

Reusable Bag Ordinance



Draft Environmental Impact Report

SCH # 2013122031

Prepared for:

City of Sacramento

Prepared with the assistance of:

Rincon Consultants, Inc.

2220 J Street, Suite 7
Sacramento, CA 95816

March 2014

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City of Sacramento Reusable Bag Ordinance EIR

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EXECUTIVE SUMMARY

This section summarizes the characteristics of the proposed Reusable Bag Ordinance (the “Proposed Ordinance”) in the City of Sacramento and the significant environmental impacts, mitigation measures, and residual impacts associated with the Proposed Ordinance. See Appendix B for a Draft of the Proposed Ordinance.

PROJECT INTRODUCTION

Project Sponsor

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Project Description

The proposed Reusable Bag Ordinance (“Proposed Ordinance”) would regulate the use of single-use plastic and paper carryout bags within the jurisdictional limits of the City of Sacramento (the City). The Proposed Ordinance would apply to three categories of retail establishments that are located within or doing business within the geographic limits of the City. The Proposed Ordinance would apply to the following types of retail establishments:

1. *A supermarket, defined as 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;*
2. *A store of at least 10,000 square feet of retail space that generates sales or use tax pursuant to the Bradley-Burns Uniform Local Sales and Use Tax Law (Part 1.5 (commencing with Section 7200) of Division 2 of the Revenue and Taxation Code) and that has a pharmacy licensed pursuant to Chapter 9 (commencing with Section 4000) of Division 2 of the Business and Professions Code; or*
3. *A convenience food store, foodmart, or other entity that is engaged in the retail sale of a limited line of goods, including milk, bread, soda, and snack foods, and that holds a Type 20 or 21 liquor license issued by the Department of Alcoholic Beverage Control.*

The proposed ordinance would (1) prohibit stores from distributing single-use plastic carryout bags and (2) require stores to charge customers at least \$0.10 for recycled paper carryout or reusable bags, at the point of sale. The Proposed Ordinance would not apply to restaurants and other food service providers, allowing them to provide single-use plastic bags to customers for prepared take-out food intended for consumption off of the food provider's premises.

The intent of the Proposed Ordinance is to reduce the environmental impacts related to the use of single-use plastic and paper bags, and to promote a shift toward the use of reusable bags. It is anticipated that by prohibiting single-use plastic bags and requiring a mandatory charge for each recycled paper carryout bag or reusable bag distributed by retailers, the Proposed Ordinance would provide a disincentive to customers to request recycled paper carryout bags when shopping at regulated stores and promote a shift to the use of reusable carryout bags by retail customers, while reducing the number of single-use plastic and paper carryout bags.

Single-use plastic bags are defined in the Proposed Ordinance as any bag made of plastic derived from either petroleum or a biologically-based source, such as corn or other plant sources, which is provided to a customer at the point of sale. The term includes compostable and biodegradable bags. Regulated bags would not include any bag without handles used exclusively to carry produce, meats, or other food items such as bulk foods to the point of sale inside a store or to prevent such food items from coming into direct contact with other purchased items, hold a prescription medication, or segregate food or merchandise that could be damaged or that could damage or contaminate other food or merchandise. A recycled paper carryout bag is defined in the Proposed Ordinance as a bag that (1) is 100% recyclable, (2) contains a minimum of 40% postconsumer recycled material (3) is capable of composting, consistent with the timeline and specifications of the American Society of Testing and Materials Standard D6400 (4) displays the name of the manufacturer, the country where the bag was manufactured and the percentage of postconsumer content the bag contains, (5) indicates that it is recyclable in a highly visible manner on the outside of the bag.

PROJECT OBJECTIVES

The City of Sacramento's objectives for the Proposed Ordinance include:

- *Reducing the environmental impacts related to single-use plastic bags, including impacts to water and other natural environments*
- *Reducing the amount of single-use plastic bags in landfills*
- *Reducing the cost of shutting down recycling machinery due to recycling of plastic bags*
- *Reducing litter and the associated adverse impacts to stormwater systems, aesthetics and both aquatic and terrestrial environments related to single-use plastic bags.*

ALTERNATIVES

As required by CEQA, the EIR examines a range of alternatives to the proposed project that feasibly attain most of the basic project objectives. These alternatives are described and evaluated in Section 6.0, *Alternatives*. Studied alternatives include:

- **Alternative 1: No Project** - The no project alternative assumes that the Reusable Bag Ordinance would not be enacted. The existing retail establishments would continue to provide single-use plastic and paper bags free of charge to the customers.
- **Alternative 2: Ban on Single-Use Plastic Bags, \$0.25 fee on Recycled Paper Bags and Reusable Bags** - This alternative would continue to prohibit regulated retail stores in Sacramento from providing single-use plastic bags to customers at the point of sale, but would increase the mandatory charge for recycled paper carryout bags from a minimum of \$0.10 to \$0.25.
- **Alternative 3: Ban on Single-use Plastic bags and Recycled Paper bags** - This alternative would continue to prohibit regulated retail stores in Sacramento from providing single-use plastic bags to customers at the point of sale, but would also ban recycled paper bags from being provided to customers at the point of sale.
- **Alternative 4: Ban on Single-Use Plastic Bags, \$0.10 fee on Recycled Paper Bags and Reusable Bags at all retail establishments.** - This alternative would prohibit all retail establishments in Sacramento from providing single-use plastic bags to customers at the point of sale, including restaurants and other food establishments and other retailers not covered under the Proposed Ordinance, and would include a mandatory minimum charge of \$0.10 for recycled paper carryout bags and reusable bags.

SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Table ES-1 includes a brief description of the environmental issues relative to the Proposed Ordinance, the identified significant environmental impacts, proposed mitigation measures, and residual impacts. *Significant and Unavoidable* impacts are defined as significant, unavoidable adverse impacts which require a statement of overriding considerations to be issued pursuant to the *CEQA Guidelines* §15093 if the project is approved. *Significant but Mitigable* impacts are significant adverse impacts that can be feasibly mitigated to less than significant levels and which require findings to be made under Section 15091 of the *CEQA Guidelines*. *Less than Significant* impacts are considered not significant, and *beneficial* effects are a reduction in existing environmental problems or hazards.

**Table ES-1
 Summary of Significant Environmental Impacts,
 Mitigation Measures, and Residual Impacts**

Impact	Mitigation Measures	Significance After Mitigation
AIR QUALITY		
Impact AQ-1 With a shift toward recycled paper and reusable bags, the Proposed Ordinance would reduce the number of single-use plastic bags used within Sacramento, thereby reducing the total number of bags manufactured. The ozone emissions associated with all types of carryout bag manufacture, transport, and use would decrease compared to existing conditions. Although atmospheric acidification emissions associated with carryout bag manufacture, transport, and use would increase, carryout bag manufacturers would be required to comply with existing air quality regulations. In addition, no carryout bag manufacturers are within the local air basin. Therefore, air quality impacts related to alteration of processing activities would be <i>less than significant</i> .	Mitigation is not required.	Impacts would be less than significant without mitigation.
Impact AQ-2 With an expected increase in the use of recycled paper and reusable bags, the Proposed Ordinance would generate air pollutant emissions associated with an incremental increase in truck trips to deliver recycled paper and reusable bags to local retailers. However, emissions would not exceed SMAQMD or City of Sacramento operational significance thresholds. Therefore, operational air quality impacts would be <i>less than significant</i> .	Mitigation is not required.	Impacts would be less than significant without mitigation.
GREENHOUSE GAS EMISSIONS		
Impact GHG-1 Implementation of the Proposed Ordinance would increase the number of recycled paper and reusable bags used in Sacramento and would therefore incrementally increase GHG emissions compared to existing conditions. However, emissions would not exceed thresholds of significance. Impacts would be <i>less than significant</i> .	Mitigation is not required.	The impact would be less than significant without mitigation.
Impact GHG-2 The Proposed Ordinance would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Impacts would be <i>less than significant</i> .	Mitigation is not required.	The impact would be less than significant without mitigation.
HYDROLOGY/WATER QUALITY		
Impact HWQ-1 Although the Proposed Ordinance would incrementally increase the number of recycled paper and reusable bags used in Sacramento, the overall reduction in the total amount of carryout bags would incrementally reduce the amount of litter and waste entering storm drains, improving water quality. This would be a <i>beneficial effect</i> .	Mitigation is not required.	The impact would be beneficial without mitigation.

**Table ES-1
 Summary of Significant Environmental Impacts,
 Mitigation Measures, and Residual Impacts**

Impact	Mitigation Measures	Significance After Mitigation
<p>Impact HWQ-2 The Proposed Ordinance could potentially alter processing activities related to bag production, which could potentially degrade water quality in some instances and locations. However, bag manufacturers would be required to adhere to existing regulations, including NPDES Permit requirements, AB 258 and the California Health and Safety Code. Therefore, impacts to water quality from altering bag processing activities would be <i>less than significant</i>.</p>	<p>Mitigation is not required.</p>	<p>Impacts would be less than significant without mitigation.</p>
UTILITIES AND SERVICE SYSTEMS		
<p>Impact U-1 The increased use of reusable bags within Sacramento as a result of the Proposed Ordinance would minimally increase water demand due to washing of reusable bags. However, sufficient water supplies are available to meet the projected increase in demand. Therefore, water supply impacts would be <i>less than significant</i>.</p>	<p>Mitigation is not required.</p>	<p>Impacts would be less than significant without mitigation.</p>
<p>Impact U-2 Water use associated with washing reusable bags would incrementally increase wastewater generation. However, projected wastewater flows would remain within the capacity of Sacramento wastewater collection and treatment systems and would not exceed applicable wastewater treatment requirements. Impacts would be <i>less than significant</i>.</p>	<p>Mitigation is not required.</p>	<p>Impacts would be less than significant without mitigation.</p>
<p>Impact U-3 The Proposed Ordinance would alter solid waste generation rates in Sacramento due to an increase in recycled paper and reusable bag use and a reduction in single-use plastic bag use. However, projected future solid waste generation would remain within the capacity of regional landfills. Impacts would therefore be <i>less than significant</i>.</p>	<p>Mitigation is not required.</p>	<p>Impacts would be less than significant without mitigation.</p>

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1.0 INTRODUCTION

This document is a Draft Environmental Impact Report (EIR) for the proposed Reusable Bag Ordinance (the “Proposed Ordinance”) in the City of Sacramento. The Proposed Ordinance would restrict all retail services, including supermarkets from providing single-use plastic bags and would also require those retailers to charge a minimum of ten cents (\$0.10) for each recycled paper bag and reusable bag provided at the point of sale. The intent of the Proposed Ordinance is to increase the use of reusable bags and decrease the use of single-use plastic and paper bags to reduce pollution in local waterways and landfills, minimize the cost and inconvenience of handling single use plastic bags at the City’s recycling centers, and to reduce litter and visual blight. The Proposed Ordinance is described in greater detail in Section 2.0, *Project Description*. This section discusses:

- *The project background;*
- *The legal basis for preparing an EIR;*
- *The scope and content of the EIR;*
- *Lead, responsible, and trustee agencies; and*
- *The environmental review process required under the California Environmental Quality Act (CEQA).*

1.1 PROJECT BACKGROUND

In response to concerns regarding the environmental impacts of single use plastic carryout bags, the City of Sacramento has prepared the Proposed Ordinance for the reduction of single-use plastic and paper bags. Adoption of the proposed Reusable Bag Ordinance would be a discretionary action subject to the environmental review requirements of the California Environmental Quality Act (CEQA). The City of Sacramento has decided to proceed with an EIR to examine the Proposed Ordinance’s potential environmental impacts.

Several cities and counties in California have previously considered or passed similar ordinances within their respective jurisdictions. These include, but are not limited to: the City of San Francisco, the County of Los Angeles, the City of Berkeley, the City of San Jose, the City of Manhattan Beach, the City of Palo Alto, Marin County, the City of Malibu, the City of Santa Monica, San Mateo County, the City of Sunnyvale, Alameda County, the City of Calabasas, the Town of Fairfax, the City of Huntington Beach, the City of Dana Point, the City of Laguna Beach, and the City of Long Beach.

The City of Sacramento prepared a Notice of Preparation (NOP) of an EIR for the Proposed Ordinance and distributed the NOP for agency and public review for a 30-day review period beginning December 16, 2013 and ending January 17, 2014. The City received one letter in response to the NOP that expressed support for the Proposed Ordinance and described concerns related to existing use of single-use plastic bags and the impact such use has on existing environmental conditions. The City also conducted a public scoping meeting during the NOP comment period. This took place in Sacramento on January 9, 2014.

The environmental topics evaluated in the EIR were identified in a scoping comment letter received and in the completion of an Initial Study. The NOP and Initial Study prepared for the project as well as the comment letter received are presented in Appendix A.

1.2 PURPOSE AND LEGAL AUTHORITY

The Proposed Reusable Bag Ordinance requires the discretionary approval of the City Council. Therefore, it is subject to the requirements of CEQA. In accordance with Section 15121 of the *CEQA Guidelines*, the purpose of this EIR is to serve as an informational document that:

...will inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This EIR is to serve as an informational document for the public and the decision-makers of the City of Sacramento. The City will review and consider the information in the EIR, along with any other relevant information, in making final decisions regarding the Proposed Ordinance (Section 15121 of the *CEQA Guidelines*). The environmental review process will culminate with a City Council hearing to determine whether the Final EIR was completed in compliance with CEQA and separately whether to adopt the Reusable Bag Ordinance.

1.3 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

The *CEQA Guidelines* define lead, responsible and trustee agencies. The City of Sacramento is the lead agency for the project because it holds principal responsibility for approving the Proposed Ordinance.

A responsible agency refers to a public agency other than the lead agency that has discretionary approval over the project, and a trustee agency refers to a state agency having jurisdiction by law over natural resources affected by a project. There are no responsible or trustee agencies for the Proposed Ordinance.

1.4 EIR SCOPE AND CONTENT

This EIR addresses the issues that the City of Sacramento determined could potentially have significant effects. The issues addressed in this EIR include:

- *Air Quality*
- *Greenhouse Gas Emissions*
- *Hydrology/Water Quality*
- *Utilities and Service Systems*

This EIR addresses the issue areas referenced above that were identified in an Initial Study as having potentially significant environmental impacts. The Initial Study is included in Appendix A.

The EIR references pertinent City policies and guidelines, certified EIRs and other adopted CEQA documents, and background documents prepared by the City in preparing the proposed Reusable Bag Ordinance. A full reference list is contained in Section 7.0, *References and Report Preparers*.

The alternatives section of the EIR (Section 6.0) was prepared in accordance with Section 15126.6 of the *CEQA Guidelines*. The alternatives discussion evaluates the CEQA-required “no project” alternative and three alternative scenarios for the Reusable Bag Ordinance. It also identifies the environmentally superior alternative among the alternatives assessed.

The level of detail contained throughout this EIR is consistent with the requirements of CEQA and applicable court decisions. The *CEQA Guidelines* provide the standard of adequacy on which this document is based. The *CEQA Guidelines* state:

An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of the proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good faith effort at full disclosure. (Section 15151)

1.5 ENVIRONMENTAL REVIEW PROCESS

The major steps in the environmental review process, as required under CEQA, are outlined below. The steps are presented in sequential order.

1. **Notice of Preparation (NOP).** After deciding to prepare an EIR, the lead agency must file an NOP soliciting input on the EIR scope to the State Clearinghouse, other concerned agencies, and parties previously requesting notice in writing (*CEQA Guidelines* Section 15082; Public Resources Code Section 21092.2). The NOP must be posted in the County Clerk’s office for 30 days. The NOP may be accompanied by an Initial Study that identifies the issue areas for which the proposed project could create significant environmental impacts (in this case, the Initial Study accompanies the Draft EIR).
2. **Draft Environmental Impact Report (DEIR).** The DEIR must contain:
 - a) Table of contents or index;
 - b) Summary;
 - c) Project description;
 - d) Environmental setting;
 - e) Discussion of significant impacts (direct, indirect, cumulative, growth-inducing and unavoidable impacts);
 - f) Discussion of alternatives;
 - g) Mitigation measures; and
 - h) Discussion of irreversible changes.

3. **Notice of Completion/Notice of Availability of Draft EIR.** A lead agency must file a Notice of Completion with the State Clearinghouse when it completes a Draft EIR and prepare a Public Notice of Availability for the Draft EIR. The lead agency must place the Notice in the County Clerk's office for 45 days (Public Resources Code Section 21092) and send a copy of the Notice to anyone requesting it (*CEQA Guidelines* Section 15087). Additionally, public notice of DEIR availability must be given through at least one of the following procedures: a) publication in a newspaper of general circulation; b) posting on and off the project site; and c) direct mailing to owners and occupants of contiguous properties. The lead agency must solicit input from other agencies and the public, and respond in writing to all comments received (Public Resources Code Sections 21104 and 21253). The minimum public review period for a DEIR is 30 days. When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days unless the Clearinghouse (Public Resources Code 21091) approves a shorter period.
4. **Final EIR.** A Final EIR must include: a) the Draft EIR; b) copies of comments received during public review; c) list of persons and entities commenting; and d) responses to comments.
5. **Certification of FEIR.** Prior to making a decision on a proposed project, the lead agency must certify that: a) the FEIR has been completed in compliance with CEQA; b) the Final EIR was presented to the decision-making body of the lead agency; and c) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project (*CEQA Guidelines* Section 15090).
6. **Lead Agency Project Decision.** A lead agency may: a) disapprove a project because of its significant environmental effects; b) require changes to a project to reduce or avoid significant environmental effects; or c) approve a project despite its significant environmental effects, if the proper findings and statement of overriding considerations are adopted (*CEQA Guidelines* Sections 15042 and 15043).
7. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead or responsible agency must find, based on substantial evidence, that either: a) the project has been changed to avoid or substantially reduce the magnitude of the impact; b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible (*CEQA Guidelines* Section 15091). If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
8. **Mitigation Monitoring Reporting Program.** When an agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
9. **Notice of Determination.** An agency must file a Notice of Determination after deciding to approve a project for which an EIR is prepared (*CEQA Guidelines* Section 15094). A local agency must file the Notice with the County Clerk. The Notice must be posted for 30 days and sent to anyone previously requesting notice. Posting of the Notice starts a 30-day statute of limitations on CEQA legal challenges (Public Resources Code Section 21167[c]).

2.0 PROJECT DESCRIPTION

This section describes the proposed project, including information about the project sponsor, project location, a description of the major characteristics of the proposed Reusable Bag Ordinance (the “Proposed Ordinance”), project objectives, and a list of discretionary approvals needed for project approval.

2.1 PROJECT SPONSOR

City of Sacramento
Department of General Services
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(916) 808-4949

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City of Sacramento
Community Development Department, Environmental Planning Services
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SCook@cityofsacramento.org

2.2 PROJECT LOCATION

The project (the “Proposed Ordinance”) would apply to retail stores located throughout the City of Sacramento’s corporate limits. Sacramento is the capital city of California and covers an area of approximately 100 square miles. Sacramento is located toward the northeast corner of Sacramento County at the confluence of the Sacramento and American Rivers. Sacramento has a deep-water port and is connected to San Francisco Bay and the Pacific Ocean through the Sacramento Delta. Several major roadways pass through the city including Interstate 80 and Interstate 5. The City is surrounded by farmland to the north and south, the Sierra Nevada foothills to the east, the Yolo Bypass flood diversion area, West Sacramento, and Davis are to the west. Figure 2-1 shows the project location.

2.3 EXISTING BAG USE CHARACTERISTICS

2.3.1 Carryout Bags in the City of Sacramento

The types and numbers of carryout bags currently used within Sacramento are discussed below.

a. Types of Carryout Bags.



Source: City of Sacramento, November 26, 2013.

Map of the City of Sacramento

Figure 2-1

Single-use Plastic Bags. Single-use plastic bags are typically made of thin, lightweight high density polyethylene (HDPE) (Hyder Consulting, 2007). For consumers, they offer a hygienic, odorless, water resistant and sturdy carrying sack, but are generally intended for one use before disposal. Currently, almost 20 billion of these single-use plastic bags are consumed annually in California (San Mateo County Final EIR, October 2012; Green Cities California MEA, 2010; and CIWMB, 2007). Studies suggest that conventional single-use plastic bags are manufactured by independent manufacturers who purchase virgin resin from petrochemical companies or obtain non-virgin resin from recyclers or other sources and that 69.3% of single-use plastic bags used in the United States are made in the United States (Stephen L. Joseph, May 17, 2013).

The HDPE bag cycle begins with the waste-byproducts of oil (imported bags) or natural gas (domestic bags) into hydrocarbon monomers, which are then further processed into polymers (Herrera et al, 2008; County of Los Angeles, 2009; Stephen L. Joseph, May 17, 2013). These polymers are connected with heat to form plastic resins, which are then blown through tubes to create the air pocket of the bag. Once cooled, the plastic film is stretched to the desired size of the bag and cut into individual bags. Typical single-use plastic bags are approximately four to nine grams in weight, and can be purchased in bulk for approximately two to five cents per bag (AEA Technology, 2009). Single-use plastic bags can be reused by customers and are recycled. Approximately 11.1% of single-use plastic bags in the United States are recycled (US EPA, 2011). In addition, customers sometimes reuse single-use plastic bags in place of other types of bags, for example as small trash can liners or to pick up/transport pet waste.

Recycled Paper Bags. Like single-use plastic bags, recycled paper bags are usually distributed free of charge to customers at grocery stores, and are intended for one use before disposal. Recycled paper bags are recycled and can be reused by customers. Paper bags are also compostable. Approximately 49.5% of recycled paper carryout bags nationwide are recycled (EPA, 2011). Reports indicate that consumers nationally recycle paper products at a rate of 50% (International Paper, 2012). Paper bags are typically produced from kraft paper and weigh between 50 and 100 grams, depending on whether or not the bag includes handles (AEA Technology, 2009). These bags can be purchased in bulk for approximately 15 to 25 cents per bag (City of Pasadena, 2008). Kraft paper bags are manufactured from a pulp that is produced by digesting a material into its fibrous constituents via chemical and/or mechanical means (FRIDGE, 2002). Kraft pulp is produced by chemical separation of cellulose from lignin (Environmental Paper Network, 2007). Chemicals used in this process include caustic sodas, sodium hydroxide, sodium sulfide, and chlorine compounds (Environmental Paper Network, 2007). The paper bags are typically made from trees (paper) and corn (glue), which are both replanted and re-grown (International Paper, 2012). Processed and then dried and shaped into large rolls, the paper is formed into bags, baled, and distributed to grocery stores. Paper bags have many other uses outside of grocery stores, including use as recycling and composting containers, school book covers, gift wrap, and other craft projects, and use for picnics or sporting events (International Paper, 2012).

Biodegradable Carryout Bags. Multiple types of single-use biodegradable bags are currently available, distinguished by their material components. Biodegradable bags are composed of thermoplastic starch-based polymers, which are made with at least 90% starch from renewable resources such as corn, potato, tapioca, or wheat, or from polyesters,

manufactured from hydrocarbons, or starch–polyester blends (James and Grant, 2005). These bags are approximately the same size and weight as HDPE plastic bags, but are more expensive and only biodegrade if they are sent to commercial composting facilities. They can be purchased in bulk for approximately 12 to 30 cents per bag (www.ecoproducts.com, 2009).

Reusable Bags. Reusable bags can be made from plastic or a variety of cloths such as vinyl or cotton. These bags differ from the single-use bags in their weight and longevity. They are built to withstand many uses, weigh at least ten times what an HDPE plastic bag weighs and two times what a paper bag weighs, and require greater material consumption on a per bag basis than HDPE plastic bags (ExcelPlas Australia, 2004; City of Pasadena, 2008). Many types of reusable bags are available today. These include: (1) non- woven polypropylene ranging from \$1-\$2.50 per bag; (2) cotton canvas bags, which are approximately \$5.00 per bag; (3) bags made from recycled water/soda bottles, which are approximately \$6.00 per bag; (4) polyester and vinyl, which are approximately \$10.00 per bag; and (5) 100% cotton, which are approximately \$5.00 to \$10.00 per bag.

The production stages in reusable bag life cycles depend on the materials used. Once in the use phase, these bags can be reused until worn out through washing or regular use. This EIR analysis assumes a conservative estimate of 52 uses prior to disposal; however, actual uses may be higher than this as the Proposed Ordinance requires that reusable bags are capable of being used at least 125 times. Worn out bags are typically disposed either in the landfill or recycling facility (if recyclable).

b. Carryout Bag Use in the City of Sacramento. Statewide, almost 20 billion single-use plastic bags (or approximately 527 bags per person) are consumed annually in California (San Mateo County Final EIR, October 2012; Green Cities California MEA, 2010; and CIWMB, 2007). Based on this per capita bag, retail customers within the City of Sacramento currently use about 249.5 million single-use plastic bags per year (see Table 2-1).

**Table 2-1
 Estimated Single-Use Plastic Bag Use in the City of Sacramento**

	Population*	Number of single-use plastic bags Used per Person**	Total Bags Used Annually
Sacramento	473,509	527	249,539,243

* California Department of Finance, "City/County Population and Housing Estimates" (May 2013).

**Based on annual statewide estimates of plastic bag use from the CIWMB (2007) – 527 bags per person = 20 billion bags used statewide per year (CIWMB, 2007) / 37,966,000 people statewide (California's current population according to the State Department of Finance, 2013).

The customer base of retailers located within Sacramento may include residents of communities located within or outside of the City (i.e., visitors who live outside Sacramento, but travel to shop within the City). Likewise, Sacramento residents may shop outside of the City. In order to estimate the current number of single-use plastic bags used per year in Sacramento, the EIR applies the rate discussed above (527 single-use plastic bags used per person/per year) to the number of residents in the City. This estimate is considered reasonable and conservative for the purposes of this analysis.

2.3.2 Regulatory Setting

In 2006, California enacted AB 2449 (Chapter 845, Statutes of 2006), which became effective on July 1, 2007. The statute states that stores providing single-use plastic bags to customers must provide at least one plastic bag collection bin in an accessible location to collect used bags for recycling. The store operator is also required to make reusable bags available to shoppers for purchase. AB 2449 applies to retail stores of over 10,000 square feet that include a licensed pharmacy and to supermarkets with gross annual sales of \$2 million or more that sell dry groceries, canned goods, nonfood items or perishable goods. Stores are also required to maintain records of their AB 2449 compliance and make them available to the California Integrated Waste Management Board (now CalRecycle) or local jurisdiction.

AB 2449 further requires the manufacturers of single-use plastic bags to develop educational materials to encourage the reducing, reusing, and recycling of single-use plastic bags, and to make the materials available to stores. Manufacturers are also required to work with stores on their at-store recycling programs to help ensure the proper collection, transportation and recycling of the single-use plastic bags.

Finally, AB 2449 restricts the ability of cities (including charter cities) and counties to regulate single-use plastic bags through imposition of a fee. Public Resources Code Section 42254(b) provided as follows:

Unless expressly authorized by this chapter, a city, county, or other public agency shall not adopt, implement, or enforce an ordinance, resolution, regulation, or rule to do any of the following:

- (1) Require a store that is in compliance with this chapter to collect, transport, or recycle plastic carryout bags.*
- (2) Impose a plastic carryout bag fee upon a store that is in compliance with this chapter.*
- (3) Require auditing or reporting requirements that are in addition to what is required by subdivision (d) of Section 42252, upon a store that is in compliance with this chapter.*

Though AB 2449 expired under its own terms on January 1, 2013, it was extended to January 1, 2020 through the adoption of SB 1219 on September 9, 2012. However, the provision listed above that preempts local regulatory action was not extended and thus expired on January 1, 2013.

There are no other California statutes that directly focus on carryout bags.

2.4 PROPOSED ORDINANCE CHARACTERISTICS

In response to concerns regarding the environmental impacts of single-use plastic bags, the City of Sacramento has prepared the Reusable Bag Ordinance for the reduction of single-use plastic and paper bags. The Proposed Ordinance would apply to the following types of retail establishments:

1. *A supermarket, defined as 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;*
2. *A store of at least 10,000 square feet of retail space that generates sales or use tax pursuant to the Bradley-Burns Uniform Local Sales and Use Tax Law (Part 1.5 (commencing with Section 7200) of Division 2 of the Revenue and Taxation Code) and that has a pharmacy licensed pursuant to Chapter 9 (commencing with Section 4000) of Division 2 of the Business and Professions Code; or*
3. *A convenience food store, foodmart, or other entity that is engaged in the retail sale of a limited line of goods, including milk, bread, soda, and snack foods, and that holds a Type 20 or 21 liquor license issued by the Department of Alcoholic Beverage Control.*

The Proposed Ordinance would regulate the use of single-use plastic and paper bags within Sacramento. The intent of the Proposed Ordinance is to reduce the environmental impacts related to the use of single-use plastic and paper bags, and to promote a shift toward the use of reusable carryout bags. It is anticipated that by prohibiting single-use plastic bags and requiring a mandatory charge for each recycled paper or reusable bag distributed by retailers, the Proposed Ordinance would provide a disincentive to customers to request recycled paper bags when shopping at regulated stores and promote a shift to the use of reusable bags by retail customers, while reducing the number of single-use plastic and paper bags within the City.

The Proposed Ordinance would: (1) prohibit the distribution of single-use plastic bags at regulated stores; and (2) require retail establishments to charge customers (at least \$0.10) for recycled paper or reusable carryout bags at the point of sale. Single-use plastic bags are defined in the Proposed Ordinance as any bag made predominately of plastic derived from either petroleum or biologically-based sources, such as corn or other plant sources, which is provided to a customer at the point of sale. Recycled paper bags are defined in the Proposed Ordinance as a bag that (1) is 100% recyclable, (2) contains a minimum of 40% postconsumer recycled material (3) is capable of composting, consistent with the timeline and specifications of the American Society of Testing and Materials Standard D6400 (4) displays the name of the manufacturer, the country where the bag was manufactured and the percentage of postconsumer content the bag contains, (5) indicates that it is recyclable in a highly visible manner on the outside of the bag. Regulated bags would not include any bag without handles used exclusively to carry produce, meats, or other food items such as bulk foods to the point of sale inside a store or to prevent such food items from coming into direct contact with other purchased items, hold a prescription medication, or segregate food or merchandise that could be damaged or that could damage or contaminate other food or merchandise.

As noted above, the Proposed Ordinance would require regulated retailers to impose a mandatory charge of at least \$0.10 for each recycled paper bag and/or reusable bag provided. Retail establishments would be required to indicate on the customer receipt the number of recycled paper bags and/or reusable bags provided and the total amount charged for the bags. The Proposed Ordinance would not apply to restaurants and other food service providers, allowing them to provide single-use plastic bags to customers for prepared take-out food intended for consumption off of the food provider's premises.

The complete Draft Ordinance is contained in Appendix B.

2.5 ANTICIPATED CHANGES IN BAG USE AS A RESULT OF THE PROPOSED ORDINANCE

The analysis in this EIR assumes that as a result of the Proposed Ordinance, which would require a \$0.10 fee on recycled paper bags and reusable bags, approximately 95% of the volume of single-use plastic bags currently used in Sacramento (249,539,243 single-use plastic bags per year) would be replaced by recycled paper bags (approximately 30%) and reusable bags (approximately 65%), as shown in Table 2-2. It is assumed that the number of single-use plastic bags used in the City annually would be 5% of the number of single-use plastic bags currently used as the Proposed Ordinance does not apply to some retailers who distribute single-use plastic bags (e.g., restaurants and other non-grocery related retailers such as clothing or hardware stores).

**Table 2-2
Existing Plastic Bag Replacement Assumptions**

Type of Bag	Replacement Assumption	Bags used Post-Ordinance Adoption	Explanation
Single-use Plastic	5% (remaining) ¹	12,476,962	Because the Proposed Ordinance does not apply to all retailers (e.g. restaurants and other non-grocery retailers), some single-use plastic bags would remain in circulation.
Recycled paper	30% ²	74,861,773	Although the volume of a recycled paper bag is generally 150% of the volume of a single-use plastic bag, such that fewer recycled paper bags would be needed to carry the same number of items, it is conservatively assumed that paper would replace plastic at a 1:1 ratio.
Reusable	65% ²	3,119,241	Although a reusable bag is designed to be used up to hundreds of times (Green Cities California MEA, 2010; Santa Monica Single-Use Bag Ordinance Final EIR, 2011), it is conservatively assumed that a reusable bag would be used by a customer once per week for one year, or 52 times.
Replacement Bags for Secondary Plastic Bag Uses	40% of initial plastic bag use ³	99,815,697	Because some single-use plastic bags do get reused another time for garbage bags or other uses, individuals may purchase new plastic bags for this purpose ³ .
Total		190,273,673	

¹ Rate utilized in the City of Huntington Beach Draft EIR, Draft EIR, SCH # 2011111053, February 2012

² Rates utilized in the City of Santa Monica Nexus Study, March 2010.

³ Rate determined by United Kingdom Environment Agency Study "Lifecycle assessment of supermarket carrier bags: a review of the bags available in 2006".

It is also assumed that approximately 74,861,773 recycled paper bags would replace approximately 30% of the single-use plastic bags currently used in Sacramento. This 1:1 replacement ratio is considered conservative, because the volume of recycled paper bags (20.48 liters) is generally equal to approximately 150% of the volume of a single-use plastic bag (14 liters), such that fewer recycled paper bags would ultimately be needed to carry the same number of items.

In order to estimate the number of reusable bags that would replace 162,200,508 single-use plastic bags (65% of the existing number of single-use plastic bags used annually in Sacramento), it is assumed that a reusable bag would be used by a customer once per week for one year (52 times). According to the March 2010 Master Environmental Assessment [MEA] on Single-use and Reusable Bags (Green Cities California, March 2010), a reusable bag may be used 100 times or more; therefore, the estimate of 52 uses for reusable bags is conservative. Based on the estimate of 52 uses, 162,200,508 single-use plastic bags that would be removed as a result of the Proposed Ordinance would be replaced by 3,119,241 reusable bags. This amounts to an estimated 6.6 reusable bags per person per year based on a Sacramento population of 473,409. This analysis assumes that the approximately 250 million single-use plastic bags currently used in Sacramento annually would be reduced to approximately 190 million total bags as a result of the Proposed Ordinance.

Furthermore, it is estimated that 40% of existing single-use plastic bags are reused once for uses such as, but not limited to, picking up after pets or as garbage bags for small garbage bins like those found in bathrooms (“Life cycle assessment of supermarket carrier bags,” United Kingdom Environment Agency, 2011). Thus, this analysis assumes a 40% replacement rate for single-use plastic bags. Though some replacement bags may be smaller than single-use plastic bags (i.e., pet waste bags) and some replacement bags may be larger than single-use plastic bags (i.e., garbage bin liners), this analysis assumes a 1:1 replacement ratio. Therefore, the purchase of new bags to replace secondary plastic bag uses is estimated to result in an additional 99,815,697 single-use plastic bags being purchased. In total, it is assumed that 112,292,6591 single-use plastic bags would continue to be used annually within Sacramento after implementation of the Proposed Ordinance, as shown in Table 2-2.

2.6 PROJECT OBJECTIVES

The City of Sacramento’s objectives for the Proposed Ordinance include:

- *Reducing the environmental impacts related to single-use plastic bags, including impacts to water and other natural environments*
- *Reducing the amount of single-use plastic bags in landfills*
- *Reducing the cost of shutting down recycling machinery due to recycling of plastic bags*
- *Reducing litter and the associated adverse impacts to stormwater systems, aesthetics and both aquatic and terrestrial environments related to single-use plastic bags.*

2.7 REQUIRED APPROVALS and PERMITS

The proposed Reusable Bag Ordinance would require an amendment to the Sacramento City Code (Addition of Chapter 5.154) with discretionary approval by the Sacramento City Council. The following approvals would be required:

- *Certification of the Final EIR*
- *Adoption of the Reusable Bag Ordinance amending the City Code*

¹ Total includes approximately 12.4 million single-use plastic bags that would remain at retailers not subject to the proposed ordinance plus the approximately 99.8 million replacement bags for secondary plastic bag uses.

No other agencies have discretionary approval authority over any aspect of the proposed Reusable Bag Ordinance.

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3.0 ENVIRONMENTAL SETTING

This section provides a general overview of the environmental setting for the proposed Reusable Bag Ordinance. More detailed descriptions of the environmental setting germane to each environmental issue area can be found in Section 4.0, *Environmental Impact Analysis*.

3.1 REGIONAL SETTING

Sacramento is the capital city of California and covers an area of approximately 99 square miles. The City is located toward the northeast corner of Sacramento County half way between San Francisco and Lake Tahoe. It is also located near the confluence of the Sacramento and American Rivers which allows for a deep-water port and a connection to San Francisco Bay and the Pacific Ocean via the Sacramento Delta. Sacramento is accessible from Interstate 80 and U.S Highway 99 which runs north/south. Amtrak provides passenger rail services and the Sacramento International Airport provides both international and domestic flights. For travel within the city and surrounding areas, the Sacramento Regional Transit provides bus and light rail services. The city is surrounded by farmland to the north and south, the Sierra Nevada foothills to the east, the Yolo Bypass flood diversion area to the west (Sacramento 2030 General Plan, 2009).

The climate of Sacramento is characterized as Mediterranean, with mild, moist winters and hot, very dry summers. Average daytime summer high temperatures are in the upper 80s to low 90s, and during the winter, average daytime high temperatures rarely stay below 50 °F.

Water services in the City of Sacramento are provided by the Sacramento Department of Utilities. About 85% of the water used in the City comes from the Sacramento and American Rivers. The remaining water comes from groundwater sources. Electric and gas service within the majority of the City limits are provided by the Sacramento Municipal Utility District and Pacific Gas and Electric Company. Wastewater draining from indoor sources in Sacramento flows through sewer pipes that direct the wastewater to the Sacramento Regional County Sanitation District.

Sacramento is served by the Sacramento Regional Transit District (buses and light rail). The Amtrak Capital Corridor serves to connect Sacramento to the Bay Area. The I-80, and I-5 freeways run through the City. A segment of US Route 50 also runs through the City (Sacramento 2030 General Plan).

3.2 CUMULATIVE PROJECTS SETTING

CEQA defines cumulative impacts as two or more individual actions that, when considered together, are considerable or will compound other environmental impacts. Cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed project and other nearby projects. For example, traffic impacts of two nearby projects may be insignificant when analyzed separately, but could have a significant impact when analyzed together. Cumulative impact analysis allows the EIR to provide a reasonable

forecast of future environmental conditions and can more accurately gauge the effects of a series of projects.

Although CEQA analysis typically lists development projects in the vicinity of a project site, this document analyzes the environmental impacts associated with a proposed ordinance and does not include development or construction activity. As such, the cumulative significance of the proposed Reusable Bag Ordinance has been analyzed within the context of other carryout bag ordinances that are approved or pending throughout California. Table 3-1 lists current adopted and pending ordinances in California. These ordinances are considered in the cumulative analyses in Section 4.0, *Environmental Impact Analysis*. As shown in Table 3-1, there are at least 43 (and more being added soon) adopted, proposed or pending carryout bag ordinances (including the Proposed Reusable Bag Ordinance) located throughout California.

**Table 3-1
 Adopted, Proposed and Pending Carryout Bag Ordinances in California**

Ordinance Location	Proposed Action	Status
City of Calabasas	This ordinance bans the issuance of plastic carryout bags and imposes a ten (10) cent charge on the issuance of recyclable paper carryout bags at regulated stores.	Adopted February 2011 Effective July 2011
City of Capitola	This ordinance bans the issuance of plastic carryout bags at all retail establishments and imposes a 25 cent fee for paper bags at regulated retail establishments.	Adopted January 2013 Effective April 2013
City of Carmel-by-the-Sea	This ordinance is a plastic bag ban in all retail stores.	Adopted July 2012 Effective February 2013
City of Carpinteria	This ordinance is the first double bag ban in the state. Starting in July 2012, large retailers as specified are prohibited from distributing single-use paper and plastic bags. Starting in April 2013, plastic bags are banned in all other retail stores including restaurants.	Adopted March 12, 2012 Carpinteria's 2012 bag ban was challenged by the Save The Plastic Bag Coalition (STPBC) March 20, 2012. They settled out of court with the agreement that the City would exempt restaurant carryout bags from the ordinance.
City of Culver City	This ordinance bans the issuance of plastic carryout bags and imposes a ten (10) cent charge on the issuance of recyclable paper carryout bags at all supermarkets and other grocery stores, pharmacies, drug stores, convenience stores, and foodmarts, in Culver City. The ordinance requires a store to provide or make available to a customer only recyclable paper carryout bags or reusable bags.	Adopted May 2013
City of Dana Point	This ordinance places a ban on single-use plastic bags from all retail stores within city limits.	Adopted March 6, 2012 Effective in larger stores April 1, 2013, and all other stores October 1, 2013.
Town of Fairfax	This ordinance allows all stores, shops, eating places, food vendors and retail food vendors, to provide only recyclable paper or reusable bags as carryout bags to customers.	Adopted August 2007 After legal challenge, adopted by voter initiative November 2008

**Table 3-1
 Adopted, Proposed and Pending Carryout Bag Ordinances in California**

Ordinance Location	Proposed Action	Status
City of Fort Bragg	This ordinance bans plastic bags and requires a 10 cent paper bag charge in all retail stores.	Adopted May 14, 2012 Effective in large stores December 10, 2012 and all other stores December 2013.
City of Glendale	This ordinance is similar to the County of Los Angeles ordinance in that it bans plastic bags and places a 10 cent charge on paper bags in regulated retail establishments.	Adopted January 2013 Effective in larger stores and farmer's markets starting in July 2013 and expanded to other covered stores January 1, 2014.
City of Huntington Beach	This ordinance would prohibit distribution of plastic carry-out bags in commercial point of sale purchases within Huntington Beach, and establish a ten (10) cent charge on the issuance of recyclable paper carry-out bags at all stores that meet at least one of the criteria listed below.	Adopted March 2013 Effective To be determined
City of Laguna Beach	This ordinance requires a plastic bag ban in all retail stores. Grocery stores, pharmacies, and convenience/liquor stores must include a 10 cent minimum price requirement on paper bags distributed.	Adopted February 2012 Effective January 1, 2013
City of Long Beach	This ordinance bans plastic carryout bags at all supermarkets and other grocery stores, pharmacies, drug stores, convenience stores, food marts, and farmers markets and would place a ten (10) cent charge on the issuance of recyclable paper carryout bags by an affected store, as defined. The ordinance would also require a store to provide or make available to a customer recyclable paper carryout bags or reusable bags.	Long Beach passed this ordinance in May 2011. But unlike LAC, Long Beach did not issue a statement of overriding consideration for the likelihood of passing the GHG emission threshold of significance. The suit was settled after Long Beach agreed to adopt the County's Statement of Overriding Consideration in October 2011. Addendum to the County of Los Angeles Final EIR certified May 2011. The ordinance was also effective in larger stores starting August 2011, and will expand to others stores in 2012.
City of Los Angeles	The ordinance would prohibit provision of single-use plastic bags at supermarkets. Large markets are allowed to phase out plastic bags over 6 months and then provide free paper bags for 6 months. Smaller markets have a year to phase out plastic bags. After a year, paper bags would be allowed for a charge of 10 cents.	Approved May 2013
City of Malibu	This ordinance bans the use of non-compostable and compostable plastic shopping bags for point-of-sale distribution.	Adopted May 2008 Effective November 2009
City of Manhattan Beach	This ordinance bans the distribution of plastic bags at the point-of-sale for all retail establishments in Manhattan Beach.	Adopted July 2008 The California Supreme Court overturned a legal challenge to the ordinance in July 2011, ruling in favor of an appeal by the City of

**Table 3-1
 Adopted, Proposed and Pending Carryout Bag Ordinances in California**

Ordinance Location	Proposed Action	Status
		Manhattan Beach affirming the right of small local governments to phase out plastic grocery bags without an EIR.
City of Millbrae	This ordinance bans single-use bags and free paper carryout bags and would apply to all retailers. Stores can charge a minimum of 10 cents per bag, should a customer need to purchase one. Those paper bags sold must be comprised of at least 40 percent post-consumer recycled materials. Thicker reusable plastic bags are allowed but would also need to be imprinted showing the bag is made of at least 40 percent post-consumer recycled materials.	Adopted February 2012. Certified a Negative Declaration. Effective September 1, 2012.
City of Monterey	This ordinance bans plastic bags and places an initial 10 cent minimum price requirement on paper bags for the first year, and 25 cents after.	Adopted December 6, 2011 Effective January 2013
City of Ojai	A proposed ordinance would ban plastic shopping bags and impose a 10-cent fee on paper bags at grocery stores, supermarkets, convenience stores, liquor stores and gasoline mini-marts.	Adopted April 2012. Effective July 1, 2012.
City of Pacific Grove	The proposed ordinance would ban single-use plastic and paper bags and place a fee on recycled content paper bags.	Pending
City of Palo Alto	<p>This ordinance bans large grocery stores in Palo Alto from distributing single-use plastic check out bags. Only reusable bags (preferred) or paper bags can be distributed. Single-use plastic bags can still be used in produce and meat departments.</p> <p>Pending expansion of the ordinance would apply the ban to all retailers including restaurants in the city. An EIR on the expanded ordinance is currently being prepared.</p>	<p>Adopted March 2009 Palo Alto's 2009 bag ban was challenged by the STPBC. They settled out of court with the agreement that the City would not expand its ban to other stores without an EIR.</p> <p>Effective September 2009</p> <p>An EIR for the expansion of the ordinance to all retailers including restaurants was prepared.</p> <p>The expanded ordinance was adopted by the City Council on May 6, 2013 and will become effective July 2013.</p>
City of Pasadena	This ordinance bans plastic bags, and imposes a 10 cent minimum price on paper bags.	Adopted November 2011 Effective July 1, 2012 for large stores and supermarkets and December 2012 for convenience stores.
City of San Francisco	<p>Retail stores governed by the ordinance can only provide the following types of bags:</p> <ul style="list-style-type: none"> a. compostable plastic b. recyclable paper c. reusable bag of any material 	<p>Adopted April 2007</p> <p>In February 2012, San Francisco expanded its bag ban and was sued by the STPBC. The two causes of action are related to CEQA compliance and the bag</p>

**Table 3-1
 Adopted, Proposed and Pending Carryout Bag Ordinances in California**

Ordinance Location	Proposed Action	Status
	In February 2012, the ordinance was expanded to all retail and food establishments within the City and requires a minimum 10 cent charge for reusable bags.	ban for restaurants. A judge upheld the expansion in September 2012.
City of San Jose	This ordinance prohibits the distribution of single-use carryout paper and plastic bags at the point of sale (i.e., check-out) for all commercial retail businesses in San José except restaurants. An exception is made for “green” paper bags containing at least 40 percent recycled content, accompanied by a charge of 10 cents to the customer, with the charge retained by the retailer. For the first two years, paper bags will be sold under this ordinance at 10 cents each; after two years the minimum price per paper bag is 25 cents each.	Adopted January 2011 Effective January 2012
City of Santa Cruz	This ordinance bans plastic bags and places a 10 cent paper bag charge.	Adopted July 2012 Effective April 2013
City of Santa Monica	This ordinance: (1) prohibits retail establishments in Santa Monica from providing “single-use plastic carryout bags” to customers at the point of sale; (2) prohibits the free distribution of paper carryout bags by grocery stores, convenience stores, mini-marts, liquor stores and pharmacies; and (3) requires stores that make paper carryout bags available to sell recycled paper carryout bags to customers for not less than ten cents per bag.	Adopted January 2011 Effective September 2011
City of Solana Beach	This ordinance prohibits the provision of plastic bags (except at restaurants) and allows purchase of paper bags for 10 cents.	Adopted May 2012, amended July 2012
City of Sunnyvale	This ordinance prohibits specified retail establishments in Sunnyvale from providing single-use plastic carryout bags to customers at the point of sale, and creates a mandatory 10 cent (\$0.10) charge for each paper bag distributed by these stores.	Adopted December 2011 Effective June 20, 2012 (grocery stores, convenience stores and large retailers) Effective March 2013 (all retailers)
City of Ukiah	This ordinance prohibits retail establishments (except eating establishments) in Ukiah from providing single-use bags. Recycled-content paper bags or reusable bags could be provided at a minimum charge of 10 cents per bag.	Adopted May 2012 Effective in large stores 180 days after adoption and 545 days for all other stores.
City of Watsonville	This ordinance prohibits retail establishments from providing non-recycled paper or plastic bags and allows sale of recycled and recyclable paper bags for a 10 cent charge.	Adopted May 2012
City of West Hollywood	This ordinance prohibits retail establishments from providing non-recycled paper or plastic bags and places a 10 cent recyclable paper bag charge.	Adopted August 2012
County of Alameda (Cities of Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San	This ordinance prohibits the distribution of single-use carryout paper and plastic bags at the point of sale (i.e., check-out) for all commercial retail businesses in Alameda County. Exception would be made for recycled paper or reusable bags containing a specified minimum percentage of recycled content, which can only be provided to customers for a nominal charge (ten cents on or before January 1,	Adopted January 2012 Effective January 1, 2013

**Table 3-1
 Adopted, Proposed and Pending Carryout Bag Ordinances in California**

Ordinance Location	Proposed Action	Status
Leandro, and Union City)	2015 and 25 cents on or after January 1, 2015) to cover the cost to the business of providing the bags.	
County of Los Angeles	This ordinance bans the issuance of plastic carryout bags and imposes a ten (10) cent charge on the issuance of recyclable paper carryout bags at all supermarkets and other grocery stores, pharmacies, drug stores, convenience stores, and foodmarts, in unincorporated Los Angeles County. The ordinance requires a store to provide or make available to a customer only recyclable paper carryout bags or reusable bags. The ordinance would also encourage a store to educate its staff to promote reusable bags and to post signs encouraging customers to use reusable bags in the unincorporated areas of the County of Los Angeles.	Adopted November 2010 In October 2011, Hilex and some individuals filed a petition to void the LA County ordinance. They alleged that the 10-cent charge on paper bags is really a local special tax that requires voter approval as amended by Prop 26. In March 2012, the Court denied the petition and ruled that a paper bag charge was not a tax under Prop 26. Helix appealed the decision April 2012 and the case is still pending.
County of Marin ²	This ordinance prohibits the distribution of plastic carryout bags and would charge at least \$0.05 for a recycled paper bag.	Adopted January 2011 In September 2011, Marin County Superior Court found the ordinance “a reasonable legislative and regulatory choice” to protect the environment without causing a significant negative impact. The County had correctly determined the project to be exempt based on its actions to protect the environment and natural resources. STPBC filed an appeal of this decision on November 29, 2011. On June 25, 2013 the First District Court of Appeal upheld the lower court ruling in favor of Marin County.
County of Mendocino	This ordinance bans plastic bags with a 10 cent paper bag charge.	Adopted June 12, 2012 Effective in large stores January 2013, and all other retailers January 2014
County of Monterey	The proposed Ordinance would ban plastic bags and place a minimum charge of 10 cents on recycled paper bags.	Pending
County of San Luis Obispo (City and County of San Luis Obispo, Atascadero, Grover Beach, Morro Bay, Paso Robles, and Pismo Beach)	The San Luis Obispo County Integrated Waste Management Authority adopted a plastic bag ban with a 10 cent minimum price requirement on paper bags.	Adopted January 2012 It goes into effect on September 1, 2012 in all seven incorporated cities as well as unincorporated areas of the county. A petition was filed January 30, 2012. The SLO lawsuit had two causes of action, but the second cause was dropped in February. The first cause of action is CEQA compliance.

**Table 3-1
 Adopted, Proposed and Pending Carryout Bag Ordinances in California**

Ordinance Location	Proposed Action	Status
		On October 15, 2012 The San Luis Obispo Superior Court ruled in favor of the IWMA.
County of San Mateo (unincorporated) and 24 participating municipalities in San Mateo and Santa Clara Counties ¹	This ordinance prohibits the provision of single use plastic bags and places a 10 cent (up to 25 cents in January 2013) charge on recycled paper bags.	Approved by San Mateo County Board of Supervisors November 2012. Effective April 2013.
BEACON (unincorporated Santa Barbara County, Buellton, Goleta, Guadalupe, Lompoc, Santa Barbara, Santa Maria, Solvang, unincorporated areas of Ventura County, Camarillo, Fillmore, Moorpark, Oxnard, Port Hueneme, Santa Paula, Simi Valley, Thousand Oaks, and Ventura)	The Beach Erosion Authority for Clean Oceans and Nourishment (BEACON) model ordinance for cities and counties in either Santa Barbara or Ventura counties would regulate the distribution of single use plastic and paper carryout bags and would impose a 10 cent fee on recycled paper bags. The EIR encompasses the County of Santa Barbara (unincorporated Santa Barbara County, Buellton, Goleta, Guadalupe, Lompoc, Santa Barbara, Santa Maria, Solvang, unincorporated areas of Ventura County, Camarillo, Fillmore, Moorpark, Oxnard, Port Hueneme, Santa Paula, Simi Valley, Thousand Oaks, and Ventura).	City of Santa Barbara adopted an ordinance in October 2013. The Santa Barbara County released a Draft EIR in December 2013 specifically for unincorporated areas of Santa Barbara County. All other cities and the County of Ventura are currently pending.
County of Santa Clara	This ordinance allows affected retail establishments to distribute either a 'green' paper bag or a reusable bag. Reusable bags may be given away or sold and are initially defined (until January 2013) as bags made of cloth or other machine washable fabric that has handles; or a durable plastic bag with handles that is at least 2.25 mils thick and is specifically designed and manufactured for multiple use. 'Green' paper bags may be sold to customers for a minimum charge of \$0.15 and are defined as paper bags that are 100% recyclable and are made from 100% recycled material.	Adopted April 2011 Effective January 2012
County of Santa Cruz	The ordinance bans single-use plastic bags and places a 10 cent minimum price requirement on single-use paper bags throughout unincorporated county areas.	Adopted September 13, 2011 The STPBC filed a lawsuit in October 2011. The case was settled out of court and in February 2012 the City repealed the ban of plastic bags used at restaurants.
County of Sonoma	The Sonoma County Waste Management Agency ordinance would ban single-use plastic bags and place a 10 cent minimum price requirement, that goes up to 25-cents, on single-use paper bags throughout the County.	Pending
Marin County	The Marin County Hazardous and Solid Waste	EIR was certified by the JPA in

**Table 3-1
 Adopted, Proposed and Pending Carryout Bag Ordinances in California**

Ordinance Location	Proposed Action	Status
Hazardous and Solid Waste Management Joint Powers Authority (JPA)	Management Joint Powers Authority (JPA) prepared a Draft Model Single Use Carryout Bag Reduction Ordinance that participating JPA member agencies within Marin County could consider for adoption. The model ordinance would regulate the distribution of single use plastic and paper carryout bags and would impose a 5 cent fee on recycled paper bags and reusable bags. The EIR encompasses the following member agencies in Marin County <ul style="list-style-type: none"> • Belvedere • Corte Madera • Larkspur • Mill Valley • Novato • Ross • San Anselmo • San Rafael • Sausalito • Tiburon 	January 2014. Pending adoption of the ordinance by the member agencies.

Source: Californians Against Waste, http://www.cawrecycles.org/issues/plastic_campaign/plastic_bags/local , accessed January 2014 ; Save the Plastic Bag Coalition, <http://savetheplasticbag.com>, accessed December 2012; San Luis Obispo County, Alameda County, City of Oakland, City of San Jose, City of Calabasas, City of Capitola, City of Carpinteria, City of Dana Point, Town of Fairfax, City of Laguna Beach, City of Palo Alto, City of Los Angeles, County of Los Angeles, City of Malibu, City of Manhattan Beach, City of San Francisco, City of Solana Beach, City of Pasadena, Marin County, City of Santa Monica, Santa Clara County, Santa Cruz County, City of Long Beach, City of Ojai, City of Sunnyvale, City of Millbrae Homepages, January 2014.

¹The City of Belmont adopted the County's Reusable Bag Ordinance in January 2013 and it became effective in April 2013. The City of Brisbane adopted the San Mateo County's Reusable Bag Ordinance on March 18, 2013 and it also became effective in April 2013. The city of Burlingame adopted the San Mateo County's Reusable Bag Ordinance on March 18, 2013 and it also became effective in April 2013. The City of Colma, Daly City, Menlo Park, Mountain View, Pacifica, Portola Valley, San Bruno, South San Francisco, and Foster City adopted the County's Ordinance January 2013 and both ordinances also became effective in April 2013. The City of Redwood City and San Carlos adopted the County's ordinance in March 2013 and it became effective in October 2013 and July 2013, respectively. The City of Cupertino adopted an amended ordinance, similar to the County's in March 2013 and it became effective in October 2013. The City of East Palo Alto adopted the County's ordinance in April 2013 and it became effective in October 2013. The City of Half Moon Bay adopted the County's ordinance in March 2013 and it became effective April 2013. The City of Los Altos adopted the County's ordinance in March 2013 and it will become effective July 4, 2013.

²This ordinance only applies to the unincorporated areas of Marin County, not the incorporated jurisdictions such as those which comprise the Study Area for the Marin County Hazardous and Solid Waste Management Joint Powers Authority (JPA) EIR .

4.0 ENVIRONMENTAL IMPACT ANALYSIS

This section discusses the possible environmental effects of the Proposed Ordinance for the specific issue areas that were identified through the Initial Study and NOP process (see Appendix A) as having the potential to experience significant impacts. “Significant effect” is defined by the *CEQA Guidelines §15382* as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.”

The assessment of each issue area begins with a discussion of the setting relevant to that issue area. Following the setting is a discussion of the Proposed Ordinance’s impacts relative to the issue area. Within the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by the City, Town, County, other agencies, universally recognized, or developed specifically for this analysis to determine whether potential impacts are significant. The next subsection describes each impact of the Proposed Ordinance, mitigation measures for significant impacts, and the level of significance after mitigation. Each impact under consideration for an issue area is separately listed in bold text, with the discussion of the impact and its significance following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

Significant and Unavoidable: *An impact that cannot be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved.*

Significant but Mitigable: *An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings to be made.*

Not Significant (Less than Significant): *An impact that may be adverse, but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.*

Beneficial: *A reduction in existing environmental problems or hazards.*

Following each environmental impact discussion is a listing of recommended mitigation measures (if required) and the residual effects or level of significance remaining after the implementation of the measures. In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect.

The impact analysis concludes with a discussion of cumulative effects, which evaluates the impacts associated with the Proposed Ordinance in conjunction with other adopted and pending bag ordinances.

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4.1 AIR QUALITY

This section analyzes the Proposed Ordinance's long-term impacts to local and regional air quality. The analysis focuses on air quality impacts associated with carryout bag manufacturing facilities and truck trips associated with carryout bag distribution. Impacts related to climate change are addressed in Section 4.2, *Greenhouse Gas Emissions*.

4.1.1 Setting

a. Characteristics of Air Pollutants. The City of Sacramento is located within the Sacramento Valley Air Basin (Air Basin). The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the regional government agency that monitors and regulates air pollution within the City of Sacramento. Pollutants that are monitored within the Basin and compared to State and Federal Standards include ozone, carbon monoxide, nitrogen dioxide and suspended particulates. The general characteristics of these pollutants are described below.

Ozone. Ozone (O₃) is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_x) and reactive organic gases (ROG). Nitrogen oxides are formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it occurs in concentrations considered serious primarily between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans, including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, persons with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide. Carbon monoxide (CO) is a colorless, odorless, poisonous gas that is found in high concentrations only near the source. The major source of CO is automobile traffic. Elevated concentrations, therefore, are usually only found near areas with high traffic volumes and engine idling. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Nitrogen Dioxide. Nitrogen dioxide (NO₂) is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ is an acute irritant. A relationship between NO₂ and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. NO₂ absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM₁₀ and acid rain.

Suspended Particulates. PM₁₀ is particulate matter measuring no more than 10 microns in diameter, while PM_{2.5} is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates and sulfates. Both PM₁₀ and PM_{2.5} are by-products of fuel combustion and wind erosion of soil and unpaved roads, and are

directly emitted into the atmosphere through these processes. Suspended particulates are also created in the atmosphere through chemical reactions.

The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and fine particulates (PM_{2.5}) can be very different. The small particulates generally come from windblown dust and dust kicked up from mobile sources. The fine particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there. These materials can damage health by interfering with the body’s mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

b. Air Quality Standards. Federal and state standards have been established for six criteria pollutants: ozone, CO, NO₂, sulfur dioxide (SO₂), PM₁₀, and PM_{2.5}, and lead (Pb). Table 4.1-1 lists the current federal and state standards for criteria pollutants. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

**Table 4.1-1
 Current Federal and State Ambient Air Quality Standards**

Pollutant	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg) 100 ppb (1-hr avg)	0.030 ppm (annual avg) 0.18 ppm (1-hr avg)
Sulfur Dioxide	75 ppb (1-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	0.15 µg/m ³ (rolling 3-month avg)	1.5 µg/m ³ (30 day avg)
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hr avg)	20 µg/m ³ (annual avg) 50 µg/m ³ (24-hr avg)
Particulate Matter (PM _{2.5})	12 µg/m ³ (annual avg) 35 µg/m ³ (24-hr avg)	12 µg/m ³ (annual avg)

*ppm= parts per million ppb= parts per billion µg/m³ = micrograms per cubic meter
 Source: California Air Resources Board (June 2013), www.arb.ca.gov/research/aaqs/aaqs2.pdf*

The SMAQMD is required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in “attainment” or “non-attainment.”

c. Current Air Quality. Air quality in Sacramento is monitored primarily at the T Street Station, located at 13th Street and T Street. Table 4.1-2 indicates the number of days that each of the state and federal air quality standards has been exceeded at the station. In both 2011 and 2012 the state threshold for ozone for the worst hour metric was exceeded at the T Street Station for one day. For the worst 8 hour ozone metric, in 2010 the T Street Station exceeded state threshold one day, in 2011 the threshold was exceeded five days and in 2012 the threshold was exceeded nine days. Federal thresholds for worst 8 hour ozone were exceeded once in 2011 and four days in 2012. The T Street Station exceeded the state standard once in 2010 and did not exceed federal or state thresholds in 2011 or 2012. For PM_{2.5}, the T Street Station did not exceed the federal standard in either 2010 or 2012 but did exceed the standard in 2011 six times.

**Table 4.1-2
Ambient Air Quality Data**

Pollutant	2010	2011	2012
Ozone, ppm - Worst Hour	0.092	0.100	0.104
Number of days of State exceedances (>0.09 ppm)	0*	1	1
Ozone, ppm – Worst 8 Hours	0.074	0.087	0.092
Number of days of State exceedances (>0.070 ppm)	1	5	9
Number of days of Federal exceedances (>0.075 ppm)	0	1	4
Particulate Matter <10 microns, µg/m ³ Worst 24 Hours	53.9	42.2	36.7
Number of samples of State exceedances (>50 µg/m ³)	1	0	0
Number of samples of Federal exceedances (>150 µg/m ³)	0	0	0
Particulate Matter <2.5 microns, µg/m ³ Worst 24 Hours	30.6	50.5	27.1
Number of samples of Federal exceedances (>35 µg/m ³)	0	6	0

Data collected from the T Street Monitoring Station

Source: ARB, 2010, 2011, & 2012 Air Quality Data Statistics, Top Four Summary, available at <http://www.arb.ca.gov>

** The California Designation Value was 0.10 at this time.*

d. Air Quality Management. Under state law, the SMAQMD is required to prepare a plan for air quality improvement for pollutants for which the District is in non-compliance. The Air Quality Attainment Plan (AQAP) provides a plan to improve Sacramento air quality and protect public health. The AQAP continues to meet federal planning requirements. However, the region continues to be designated as non-attainment for both the one-hour and eight-hour state ozone standards. On June 4, 2010 EPA approved a request to bump up the Sacramento Federal Nonattainment Area from a “serious” to a “severe” 8 hour ozone nonattainment area. This provides an extended attainment deadline of June 15, 2019. Sacramento is also in a non-attainment area for the national 24-hour standard for PM_{2.5}. Because of this, the SMAQMD is required to submit a PM_{2.5} Implementation Plan, which includes control measures and emissions inventories (SMAQMD Implementation Plan October 24, 2013).

e. Air Quality and Carryout Bags. Carryout bags can affect air quality in two ways: through emissions associated with manufacturing processes and through emissions associated with truck trips for the delivery of carryout bags to retailers. Each is summarized below.

Manufacturing Process. The manufacturing process to make carryout bags requires fuel and energy consumption which generates air pollutant emissions. These may include particulate matter, nitrogen oxides, hydrocarbons, sulfur oxides, carbon monoxide, and odorous sulfur (Green Cities California MEA, 2010). The level of emissions varies depending on the type and quantity of carryout bags produced. These emissions may contribute to air quality impacts related to acid rain (atmospheric acidification) or ground level ozone formation.

Although manufacturing facilities may emit air pollutants in the production of carryout bags, manufacturing facilities are subject to air quality regulations, as described below, that are intended to reduce emissions sufficiently to avoid violations of air quality standards. For this EIR, the analysis is focused on the Sacramento Valley Air Basin, the air basin in which Sacramento is located.

Truck Trips. Delivery trucks that transport carryout bags from manufacturers or distributors to the local retailers in Sacramento also contribute air emissions locally and regionally. As discussed in the *Transportation* section of the Initial Study (see Appendix A), assuming 2,080,000 single-use plastic bags per truck load (City of Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011) approximately 120 annual truck trips (an average of about 0.33 trips per day) would be needed to deliver the 249,539,243 estimated single-use plastic bags used annually in Sacramento.

Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material (ARB "Diesel & Health Research", 2011). The visible emissions in diesel exhaust are particulate matter, or PM, which are small and readily respirable. The particles have hundreds of chemicals adsorbed onto their surfaces, including many known or suspected mutagens and carcinogens. Diesel PM emissions are estimated to be responsible for about 70% of the total ambient air toxics risk. In addition to these general risks, diesel PM can also be responsible for elevated localized or near-source exposures ("hot-spots").

Like manufacturing facilities, delivery trucks are also subject to existing regulations primarily related to diesel emissions, as described in Section g. *Regulations Applicable to Delivery Trucks*. These regulations are intended to reduce emissions associated with fuel combustion.

Ground Level Ozone and Atmospheric Acidification. Various studies have estimated air pollutant emissions for the different carryout bags (single-use plastic, recycled paper, and reusable) to determine a per bag emissions rate. In order to provide metrics to determine environmental impacts associated with the Proposed Ordinance, reasonable assumptions based upon the best available sources of information have been established and are utilized in this EIR. Specific metrics that compare impacts on a per bag basis are available for single-use plastic, recycled paper, and low-density polyethylene (LDPE) reusable bags. Air pollutant emissions associated with the manufacture and transport of one recycled paper bag result in 1.9 times the impact on atmospheric acidification as air pollutant emissions associated with one single-use plastic bag. On a per bag basis, a reusable bag that is made of LDPE plastic would result in 3

times the atmospheric acidification compared to a single-use plastic bag if the LDPE bag is only used one time. In addition, on a per bag basis, a recycled paper bag has 1.3 times the impact on ground level ozone formation of a single-use plastic bag. Finally, a reusable bag that is made of LDPE plastic and only used one time would result in 1.4 times the ground level ozone formation of a single-use plastic bag (Stephen L. Joseph, 2010; Ecobilan, 2004; FRIDGE, 2002; and Green Cities California MEA, 2010, City of Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011).

The above statistics use the LDPE carryout bag as a representation of reusable bags in evaluating air quality impacts. There is no known available Life Cycle Assessment that evaluates all types of reusable bags (canvas, cotton, calico, etc.) with respect to potential air pollutant emissions within the United States. However, the overall emissions from all types of reusable bags are expected to be lower than plastic and recycled paper carryout bags because reusable bags are used multiple times. This EIR assumes a total of 52¹ uses based on one use per week and a one-year lifespan.

Table 4.1-3 shows the emissions contributing to ground level ozone and atmospheric acidification using the per-bag impact rates discussed above and the estimated number of existing single-use plastic bags used in Sacramento. As shown in Table 4.1-3, the manufacture and transport of single-use plastic bags currently used in Sacramento each year generates an estimated 5,739 kilograms (kg) of emissions associated with ground level ozone and 270,501 kg of emissions associated with atmospheric acidification.

**Table 4.1-3
 Current Emissions from Ground Level Ozone and
 Atmospheric Acidification (AA) from Single-use Plastic Bags In Sacramento**

Carryout Bag Type	# of Bags Used per Year	Ozone Emissions (kg) per 1,000 bags^{1,2}	Ozone Emissions per year (kg)⁴	AA Emissions (kg) per 1,000 bags^{1,3}	AA Emissions per year (kg)⁴
Single-use Plastic	249,539,243	0.023	5,739	1.084	270,501
Total			5,739	Total	
				270,501	

¹ Impact rate per bag as stated in Stephen L. Joseph, 2010; Ecobilan, 2004; FRIDGE, 2002; and Green Cities California MEA, 2010; Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011.

² Emissions per 1,000 bags from Ecobilan, 2004; Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011.

³ Emissions per 1,000 bags from FRIDGE, 2002 and Green Cities California MEA, 2010; Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011.

⁴ Emissions per year = (Emissions in kg per 1,000 bags rate x number of bags used per year / 1,000)
 See Appendix D for full calculations.

¹ This represents a conservative estimate. According to the March 2010 MEA on Single-use and Reusable Bags, reusable bags may be used 100 times or more. Further the Proposed Ordinance would require that a reusable bag "has a minimum lifetime of 125 uses".

f. Regulations Applicable to Manufacturing Facilities.

EPA Title V Permit. Title V is a federal program designed to standardize air quality permits and the permitting process for major sources of emissions across the country. The name "Title V" comes from Title V of the 1990 federal Clean Air Act Amendments, which requires the EPA to establish a national, operating permit program. Accordingly, EPA adopted regulations [Title 40 of the Code of Federal Regulations, Chapter 1, Part 70 (Part 70)], which require states and local permitting authorities to develop and submit a federally enforceable operating permit programs for EPA approval. Title V only applies to "major sources." EPA defines a major source as a facility that emits, or has the potential to emit (PTE) any criteria pollutant or hazardous air pollutant (HAP) at levels equal to or greater than the Major Source Thresholds (MST). The MST for criteria pollutants may vary depending on the attainment status (e.g. marginal, serious, extreme) of the geographic area and the Criteria Pollutant or HAP in which the facility is located (EPA Title V, December 2008). Carryout bag manufacturing facilities that emit any criteria pollutant or HAP at levels equal to or greater than the MST of the local air quality management district would need to obtain, and maintain compliance with, a Title V permit.

Local Air Quality Management District Equipment Permits. Manufacturing facilities may also be required to obtain permits from the local air quality management district. A local air quality management district permit is a written authorization to build, install, alter, replace, or operate equipment that emits or controls the emission of air contaminants, such as NO_x, CO, PM₁₀, oxides of sulfur (SO_x), or toxics. Permits ensure that emission controls meet the need for the local region to make steady progress toward achieving and maintaining federal and state air quality standards.

The SMAQMD, the local air quality management district serving Sacramento, requires operators that plan to build, install, alter, replace, or operate any equipment that emits or controls the emission of air contaminants to apply for, obtain, and maintain equipment permits. Equipment permits ensure that operators make steady progress toward achieving and maintaining federal and state air quality standards (as shown in Table 4.1-1). Permits also ensure proper operation of control devices, establish recordkeeping and reporting mechanisms, limit toxic emissions, and control dust or odors. In addition, the SMAQMD routinely inspects operating facilities to verify that equipment operates in compliance with SMAQMD rules and regulations.

g. Regulations applicable to Delivery Trucks.

On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. On December 12, 2008, the ARB approved a new regulation to reduce emissions from existing on-road diesel vehicles operating in California. The regulation requires affected trucks and buses to meet performance requirements. Heavier trucks were required to be retrofitted with PM filters beginning January 1, 2012, and older trucks must be replaced starting January 1, 2015. By January 1, 2023 all vehicles must have a 2010 model year engine or equivalent. The regulation is intended to reduce emissions of diesel PM, NO_x and other criteria pollutants (ARB "Truck and Bus Regulation, Updated March 22, 2012). All trucks making deliveries of carryout bags in California will be required to adhere to this regulation.

Diesel-Fueled Commercial Motor Vehicle Idling Limit. The regulation applies to diesel-fueled commercial motor vehicles that operate in the State of California with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. The in-use truck requirements require operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engines when idling more than five minutes at any location within California beginning in 2008 (ARB "Heavy-Duty Vehicle Idling Emission Reduction Program", updated March 2009). The purpose of this airborne toxic control measure is to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. All trucks making deliveries in the City of Sacramento are required to comply with the no-idling requirements.

4.1.2 Impact Analysis

a. Methodology and Significance Thresholds. The Proposed Ordinance does not include any physical development or construction related activities; therefore, the analysis focuses on emissions related to carryout bag manufacturing processes and truck trips associated with delivering carryout bags to Sacramento retailers. No known manufacturing facilities of carryout bags are located within the Sacramento Valley Air Basin. Nevertheless, for a conservative estimate, emissions associated with both the manufacture and transport of carryout bags to retailers within Sacramento are estimated in this EIR. Emissions associated with truck trips to deliver carryout bags to Sacramento retailers were calculated using the using the URBEMIS 2007 v. 9.2.4 computer program (Rimpo and Associates, 2007). The estimate of operational emissions includes truck trips (assumed to be heavy trucks - 33,000 to 60,000 pounds) and utilizes trip generation rates based on the increase in truck trips resulting from implementation of the Proposed Ordinance. Emissions associated with manufacturing were calculated using the impact rates described in the *Setting* section (e), Air Quality and Carryout Bags.

Based on the City of Sacramento's Thresholds of Significance, the Proposed Ordinance would create a significant air quality impact if it would:

- 1) Result in construction emissions of NO_x above 85 pounds per day;
- 2) Result in operational emissions of NO_x or ROG above 65 pounds per day;
- 3) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 4) Result in PM₁₀ concentrations equal to or greater than five percent of the State ambient air quality standard (i.e., 50 micrograms/cubic meter for 24 hours) in areas where there is evidence of existing or projected violations of this standard. (However, if project emissions of NO_x and ROG are below the emission thresholds given above, then the project would not result in violations of the PM₁₀ ambient air quality standards.);
- 5) Result in CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm)
- 6) Result in exposure of sensitive receptors to substantial pollutant concentrations.

- 7) Result in toxic air contaminant (TAC) exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources.

The Initial Study (see Appendix A) concluded that potentially significant impacts would occur only with respect to the first through the fifth criterion. The sixth and seventh criterion were found to have no impacts or less than significant impacts in the Initial Study and are not discussed further in this EIR. Impacts related to greenhouse gas emissions (GHGs) are discussed in Section 4.2, Greenhouse Gases.

According to the Sacramento Metropolitan Air Quality Management District 2011 CEQA Guide, a significant impact on air quality is defined as making measurably worse, which is five percent or more of an existing exceedance of a state ambient air quality standard. The SMAQMD is currently exceeding federal air quality standards for PM_{2.5} 24-hour average (PM_{2.5} implementation/management plan). The SMAQMD also has NO_x and ROG thresholds of 65 pounds per day during the operational phase.

b. Project Impacts and Mitigation Measures.

Impact AQ-1 **With a shift toward recycled paper and reusable bags, the Proposed Ordinance would reduce the number of single-use plastic bags used within Sacramento, thereby reducing the total number of bags manufactured. The ozone emissions associated with all types of carryout bag manufacture, transport, and use would decrease compared to existing conditions. Although atmospheric acidification emissions associated with carryout bag manufacture, transport, and use would increase, carryout bag manufacturers would be required to comply with existing air quality regulations. In addition, no carryout bag manufacturers are within the local air basin. Therefore, air quality impacts related to alteration of processing activities would be *less than significant*.**

The intent of the Proposed Ordinance is to reduce the environmental impacts of single-use plastic bags. The Proposed Ordinance would reduce the number of single-use plastic bags that are manufactured and used in Sacramento and would increase the number of recycled paper and reusable bags manufactured and used in Sacramento compared to existing conditions.

As described in the *Setting*, on a per bag basis, production and transport of a recycled paper bag has 1.9 times the impact on atmospheric acidification as the production and transport of a single-use plastic bag. On a per bag basis, the production and transport of a reusable bag that is made of LDPE plastic results in three times the atmospheric acidification impact of the production and transportation of a single-use plastic bag.

Reusable bags may be made of various materials other than LDPE, including cloths such as cotton or canvas. However, there is no known available Life Cycle Assessment that evaluates all types of reusable bags (canvas, cotton, calico, etc.) with respect to potential air pollutant emissions. Thus, by using the metrics associated with a LDPE reusable bag for quantifying air

quality emissions, this EIR utilizes the best available information regarding specific metrics on a per bag basis to disclose environmental impacts associated with the Proposed Ordinance. The overall emissions from all types of reusable bags are generally lower than those of single-use plastic and paper bags because reusable bags are usually used multiple times.²

On a per bag basis, the production and transport of a recycled paper bag has 1.3 times the impact on ground level ozone formation as the production and transport of a single-use plastic bag. The production and transport of a reusable bag that is made of LDPE plastic results in 1.4 times more ground level ozone formation than the production and transport of a single-use plastic bag (Stephen L. Joseph, 2010; FRIDGE, 2002; and Green Cities California MEA, 2010).

As described in Section 2.0, *Project Description*, retail establishments making recycled paper bags available would be required to ensure that these bags that are made with a minimum 40% post-consumer recycled content to customers for \$0.10 per bag. This mandatory charge would create a disincentive to customers to request recycled paper bags when shopping at regulated stores and is intended to promote a shift toward the use of reusable bags by consumers in Sacramento. Though there would also be a minimum \$0.10 charge for reusable bags, it is assumed that customers will likely still shift to reusable bags because they can be used multiple times. Therefore, this analysis assumes that as a result of the Proposed Ordinance, 95% of the single-use plastic bags currently used in Sacramento stores would be replaced by recycled paper bags (approximately 30%) and reusable bags (approximately 65%). The number of single-use plastic bags expected to be used annually following adoption of the Proposed Ordinance would be 5% of the number of single-use plastic bags currently used within Sacramento annually. Further, this analysis assumes a 40% replacement rate for single-use plastic bags (see Section 2.5 and Table 2.2 in Section 2.0, *Project Description*).

Table 4.1-4 estimates post-Ordinance air pollutant emissions from bag manufacture and transport that contribute to the development of ground level ozone and atmospheric acidification.

The shift away from single-use plastic bags and toward use of recycled paper and reusable bags within Sacramento would reduce emissions that contribute to ground level ozone by approximately 811 kg per year, but would increase emissions that contribute to atmospheric acidification by approximately 15,584 kg per year. This increase related to atmospheric acidification is primarily related to the increased number of recycled paper bags and replacement bags for secondary plastic bag uses that is anticipated to result from the Proposed Ordinance.

As mentioned previously, emissions associated with the manufacture of carryout bags would not occur within Sacramento because no known manufacturing facilities are located within Sacramento, nor are there any known manufacturing facilities located within the air basin. Nevertheless, as discussed in the *Setting*, air pollutant emissions from manufacturing facilities are regulated under the Clean Air Act and, if located within the air basin, would be subject to the requirements of the SMAQMD. Both recycled paper bag manufacturing facilities and reusable bag manufacturing facilities that emit any criteria pollutant or hazardous air pollutant

² This represents a conservative estimate. According to the March 2010 *MEA on Single-use and Reusable Bags*, reusable bags may be used 100 times or more.

(HAP) at levels equal to or greater than the Major Source Thresholds (MST) of the local air quality management district would need to obtain and maintain compliance with a Title V permit. Adherence to permit requirements would ensure that a manufacturing facility would not violate any air quality standard. Manufacturing facilities would also be required to obtain equipment permits for emission sources through the local air quality management district in order to ensure that equipment is operated and maintained in a manner that limits air emissions in the region. Compliance with applicable regulations would ensure that manufacturing facilities would not generate emissions conflicting with or obstructing implementation of the applicable air quality plan, violate any air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant. Compliance with existing regulations would reduce impacts to a less than significant level.

**Table 4.1-4
 Estimated Emissions that Contribute to Ground Level Ozone and
 Atmospheric Acidification (AA) from Carryout Bags in Sacramento**

Carryout Bag Type	# of Carryout Bags Used per Year¹	Ozone Emissions (kg) per 1,000 Carryout Bags^{2,3}	Ozone Emissions per Year (kg)⁵	AA Emissions (kg) per 1,000 Carryout Bags^{2,4}	AA Emissions per Year (kg)⁵	
Single-use Plastic	12,476,962	0.023	1.084	1.084	13,525	
Recycled paper	74,861,773	0.03	2.06	2.06	154,215	
Reusable	3,119,241	0.032	3.252	3.252	10,144	
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	1.084	1.084	108,200	
Total			4,928	Total		286,084
Existing			5,739	Existing		270,501
Net Change (Total minus Existing)			-811	Net Change		15,584

¹ Refer to Table 2.2 in Section 2.0, Project Description.

² Impact rate per bag as stated in Stephen L. Joseph, 2009; Ecobilan, 2004; FRIDGE, 2002; and Green Cities California MEA, 2010; Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011.

³ Emissions per 1,000 bags from Ecobilan, 2004; Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011.

⁴ Emissions per 1,000 bags from FRIDGE, 2002 and Green Cities California MEA, 2010; Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011.

⁵ Emissions per year = (Emissions in kg per 1,000 bags rate x number of bags used per year / 1,000)
 See Appendix D.

Mitigation Measures. Emissions associated with manufacture, transport, and use of carryout bags would be less than significant with adherence to existing regulations. Therefore, mitigation is not required.

Significance after Mitigation. Impacts would be less than significant without mitigation.

Impact AQ-2 With an expected increase in the use of recycled paper and reusable bags, the Proposed Ordinance would generate air pollutant emissions associated with an incremental increase in truck trips to deliver recycled paper and reusable bags to local retailers. However, emissions would not exceed SMAQMD or City of Sacramento operational significance thresholds. Therefore, operational air quality impacts would be *less than significant*.

Long-term post-Ordinance emissions would include those emissions associated with truck trips to deliver carryout bags (single-use plastic, recycled paper and reusable) from manufacturing facilities or distributors to Sacramento retail establishments. Table 4.1-5 shows the change in truck trips as a result of the Proposed Ordinance.

**Table 4.1-5
 Estimated Truck Trips per Day
 Following Implementation of the Proposed Ordinance**

Carryout Bag Type	Number of Carryout Bags per Year¹	Number of Carryout Bags per Truck Load²	Truck Trips Per Year³	Truck Trips per Day
Single-use Plastic	12,476,962	2,080,000	6	0.02
Recycled paper	74,861,773	217,665	344	0.94
Reusable	3,119,241	108,862	29	0.08
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Total			427	1.17
Existing Truck Trips for Single-use Plastic Carryout Bags^c			(120)	(0.33)
Net New Truck Trips (Total minus Existing)			307	0.84

¹ Refer to Table 2.2 in Section 2.0, Project Description

² City of Santa Monica Single-Use Carryout Bag Ordinance EIR (SCH #2010041004), January 2011.

³ [Number of Carryout Bags Per Year] / [Number of Carryout Bags per Truck] = Truck Trips per Year

The URBEMIS computer program was used to calculate mobile emissions resulting from the number of trips generated by the Proposed Ordinance. Trip generation rates were taken from

the traffic analysis contained in the *Transportation* section of the Initial Study (see Appendix A), which estimates that the change in truck traffic as a result of the Proposed Ordinance would be a net increase of 0.84 truck trips per day. Emissions associated with such truck trips are summarized in Table 4.1-6.

**Table 4.1-6
Operational Emissions Associated with Truck Delivery Trips Generated by
the Proposed Ordinance**

Emission Source	Emissions (lbs/day)				
	ROG	NO _x	PM ₁₀	PM _{2.5}	CO
Total Emissions	0.01	0.08	0.01	<0.01	0.03
<i>Thresholds</i>	65	65	N/A	N/A	N/A
Threshold Exceeded?	No	No	N/A	N/A	N/A

Source: URBEMIS version 9.2.4 calculations for Truck Trips. See Appendix D for calculations

As shown in Table 4.1-6, daily ROG emissions would be 0.01 pounds, daily NO_x emissions would be 0.08 pounds, daily PM₁₀ emissions would be approximately 0.01 pounds, daily PM_{2.5} emissions would be less than 0.01 pounds, and daily CO emissions would be approximately 0.03 pounds. The incremental increases in ROG and NO_x emissions associated with the truck deliveries would be less than the SMAQMD and City of Sacramento thresholds of 65 pounds per day. The PM_{2.5} and PM₁₀ emissions associated with truck trips would not result in an increase of five percent or more of PM_{2.5} over baseline (26 MT per day) and is therefore not considered significant by the SMAQMD or City of Sacramento. In addition, the increase in CO emissions would be incremental and would be spread out over the entire jurisdiction. Therefore, the proposed Ordinance would not create CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm). Because long-term emissions would not exceed SMAQMD or City of Sacramento thresholds, impacts would not be significant.

Mitigation Measures. Operational emissions associated with the increase in truck traffic as a result of the Proposed Ordinance would not SMAQMD thresholds. Therefore, mitigation is not required.

Significance after Mitigation. Impacts would be less than significant without mitigation.

c. Cumulative Impacts. Adopted and pending carryout bag ordinances, as described in Table 3-1 in Section 3.0, *Environmental Setting*, would continue to reduce the number of single-use plastic bags used throughout California and promote a shift toward the use of reusable bags. Similar to the Proposed Ordinance, such ordinances would be expected to generally reduce the overall number of carryout bags manufactured. Existing and future manufacturing facilities would continue to be subject to federal and state air pollution regulations (see the *Setting* for discussion of applicable regulations). Similar to the Proposed Ordinance, other

adopted and pending ordinances would be expected to incrementally reduce ozone emissions. Adopted and pending ordinances may increase atmospheric acidification emissions associated with recycled paper bag use, though this would depend on the mandatory charge for recycled paper bags associated with each ordinance. For ordinances with higher fees on recycled paper bags (greater than \$0.10), more single-use plastic bags would be replaced by reusable bags rather than recycled paper bags and the associated atmospheric acidification emissions would be reduced compared to existing conditions. Nevertheless, with adherence to existing rules and regulations regarding air pollution emissions from carryout bag manufacturing facilities (i.e.: EPA Title V permit program, local air district regulations) impacts associated with carryout bag manufacturing would be less than significant and not cumulative considerable.

Similar to the Proposed Ordinance, other adopted and pending ordinances would also be expected to incrementally change the number of truck trips associated with carryout bag delivery and associated emissions. However, based on the incremental increase in air pollutant emissions associated with the Proposed Ordinance (increase of less than one tenth of a pound per day for each criteria pollutant), the other ordinances are not expected to generate a cumulative increase in emissions that would exceed SMAQMD thresholds or adversely affect regional air quality. Moreover, the increase in truck trips to deliver reusable bags would be at least partially offset by a reduction in trips to deliver single-use plastic bags. Therefore, cumulative air quality impacts with respect to truck trips associated with carryout bag delivery would not be significant.

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4.2 GREENHOUSE GAS EMISSIONS

This section analyzes the Proposed Ordinance's impacts related to global climate change. The analysis focuses on manufacturing, transportation and disposal of carryout bags, as well as energy use related to washing reusable bags, as these are the largest contributors to greenhouse gas (GHG) emissions.

4.2.1 Setting

a. Climate Change and Greenhouse Gases. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC, 2007), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (90% or greater chance) that the global average net effect of human activities since 1750 has been one of warming. The prevailing scientific opinion on climate change is that most of the observed increase in global average temperatures, since the mid-20th century, is likely due to the observed increase in anthropogenic GHG concentrations (IPCC, 2007).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as surface water and oceanic evaporation.

Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and sulfur hexafluoride (SF₆) (California Environmental Protection Agency [CalEPA], 2006). Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent"

(CO₂E), and is the amount of a GHG emitted multiplied by its GWP. CO₂ has a GWP of one. By contrast, CH₄ has a GWP of 21, meaning its global warming effect is 21 times greater than CO₂ on a molecule per molecule basis (IPCC, 1997).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHG, Earth's surface would be about 34° C cooler (CalEPA, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. The following discusses the primary GHGs of concern.

Carbon Dioxide. The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO₂ are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (United States Environmental Protection Agency [USEPA], April 2011). CO₂ was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th Century. Concentrations of CO₂ in the atmosphere have risen approximately 40% since start of the industrial revolution. The global atmospheric concentration of CO₂ has increased from a pre-industrial value of about 280 parts per million (ppm) to 391 ppm in 2011 (IPCC, 2007; Oceanic and Atmospheric Association [NOAA], 2010). The average annual CO₂ concentration growth rate was larger during the last 10 years (1995–2005 average: 1.9 ppm per year) than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year), although there is year-to-year variability in growth rates (NOAA, 2010). Currently, CO₂ represents an estimated 82.8% of total GHG emissions (Department of Energy [DOE] Energy Information Administration [EIA], August 2010). The largest source of CO₂, and of overall GHG emissions, is fossil fuel combustion.

Methane. CH₄ is an effective absorber of radiation, though its atmospheric concentration is less than that of CO₂ and its lifetime in the atmosphere is limited to 10 to 12 years. It has a global warming potential (GWP) approximately 21 times that of CO₂. Over the last 250 years, the concentration of CH₄ in the atmosphere has increased by 148% (IPCC, 2007), although emissions have declined from 1990 levels. Anthropogenic sources of CH₄ include enteric fermentation associated with domestic livestock, landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes (US EPA, April 2012).

Nitrous Oxide. Concentrations of nitrous oxide (N₂O) began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA, 2010). N₂O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of N₂O emissions. N₂O's GWP is approximately 310 times that of CO₂.

Fluorinated Gases (HFCS, PFCS and SF₆). Fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and SF₆, are powerful GHGs that are emitted from a variety of

industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF₆ emissions, while PFC emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. Fluorinated gases are typically emitted in smaller quantities than CO₂, CH₄, and N₂O, but these compounds have much higher GWPs. SF₆ is the most potent GHG the IPCC has evaluated.

State Greenhouse Gas Inventory. Worldwide anthropogenic emissions of GHGs were approximately 40,000 million metric tons (MMT) CO₂E in 2004, including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay) (IPCC, 2007). CO₂ emissions from fossil fuel use accounts for 56.6% of the total emissions of 49,000 million metric tons CO₂E (includes land use changes) and all CO₂ emissions are 76.7% of the total. Methane emissions account for 14.3% of GHGs and N₂O emissions account for 7.9% (IPCC, 2007).

Total U.S. GHG emissions were 6,821.8 MMT CO₂E in 2009 (U.S. EPA, April 2012). Total U.S. emissions have increased by 10.5% since 1990; emissions rose by 3.2% from 2009 to 2010 (U.S. EPA, April 2012). This increase was primarily due to: (1) an increase in economic output resulting in an increase in energy consumption across all sectors; and (2) warmer summer conditions, resulting in an increase in electricity demand for air conditioning. Since 1990, U.S. emissions have increased at an average annual rate of 0.5%. In 2010, the transportation and industrial end-use sectors accounted for 32% and 26% of CO₂ emissions from fossil fuel combustion, respectively. Meanwhile, the residential and commercial end-use sectors accounted for 22% and 19% of CO₂ emissions from fossil fuel combustion, respectively (U.S. EPA, April 2012).

Based upon the California Air Resources Board (ARB) California Greenhouse Gas Inventory for 2000-2011 (ARB, August 2013), California produced 448 MMT CO₂E in 2009. The major source of GHG in California is transportation, contributing 38% of the state's total GHG emissions. Electricity generation is the second largest source, contributing 19% of the state's GHG emissions (ARB, August 2013). California emissions are due in part to its large size and large population compared to other states. However, per capita emissions in California are lower than in many other states due in part to the state's relatively mild climate. The ARB has projected that statewide unregulated GHG emissions for the year 2020 will be 507 MMT CO₂E (ARB, April 2012). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

b. Potential Effects of Climate Change. Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Scientists have projected that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and the increase may be as high as 2.2-10°F (1.4-5.8°C) in the next century. In addition to these projections, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic (IPCC, 2007).

According to the CalEPA's 2010 *Climate Action Team Biennial Report*, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA, April 2010). Below is a summary of some of the potential effects that could be experienced in California as a result of climate change.

Sea Level Rise. According to *The Impacts of Sea-Level Rise on the California Coast*, prepared by the California Climate Change Center (CCCC) (May 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The study identifies a sea level rise on the California coast over the past century of approximately eight inches. Based on the results of various global climate change models, sea level rise is expected to continue. The California Climate Adaptation Strategy (December 2009) estimates a sea level rise of up to 55 inches by the end of this century.

Air Quality. Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CEC March, 2009).

Water Supply. Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10% during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase.

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during wet winters and releasing it slowly when water is needed during dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40% reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, 2008).

Hydrology. As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise

and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise may be a product of climate change through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture. California has a \$30 billion agricultural industry that produces half of the country's fruits and vegetables. Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC, 2006).

Ecosystems and Wildlife. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as two feet along most of the U.S. coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, 2004; Parmesan, C. and H. Galbraith, 2004).

While the above-mentioned potential impacts identify the possible effects of climate change at a global and potentially statewide level, in general scientific modeling tools are currently unable to predict what impacts would occur locally with a similar degree of accuracy. In general, regional and local predictions are made based on downscaling statewide models (CEC, March 2009).

c. Greenhouse Gas Emissions from Carryout Bags. Carryout bags have the potential to contribute to the generation of GHGs either through emissions associated with manufacturing process, truck trips delivering carryout bags to retailers or through disposal during landfill degradation. Each is summarized below.

Manufacturing Process. The manufacturing process to make carryout bags requires fuel and energy consumption. This generates GHG emissions, including CO₂, CH₄, N₂O, fluorinated gases, and ozone. In addition, fertilizers that are used on crops for resources such as cotton, which are then utilized in the manufacture of carryout bags, also have the potential to emit N₂O. The amount of GHG emissions varies depending on the type and quantity of carryout bags produced. Compared to truck trips and disposal, the manufacturing process is the largest emitter of GHGs due to the high volume of fuel and energy consumption that is used during the process.

Truck Trips. Delivery trucks that transport carryout bags from manufacturers or distributors to Sacramento local retailers also create GHG emissions. GHG emissions from truck trips result primarily from the combustion of fossil fuels and include CO₂, CH₄, and N₂O. As discussed in the *Transportation* section of the Initial Study (see Appendix A), based on the estimated single-use plastic carryout bag use as shown in Table 2-2, retail customers in Sacramento currently use an estimated 249,539,243 plastic bags per year. Assuming 2,080,000 plastic bags per truck load (City of Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011; refer to Appendix A), approximately 120 annual truck trips (an average of about 0.33 trips per day) would be needed to deliver these carryout bags.

Disposal/Degradation. Once disposed of by customers, carryout bags that are not recycled are deposited to a landfill where they are left to decompose and degrade. Depending on the type and materials used, a carryout bag will degrade at various rates. While standard plastic bags degrade very slowly, when biodegradable bags degrade in anaerobic conditions at a landfill, CH₄ is emitted. This contributes to climate change (Green Cities California MEA, 2010).

Washing/Sanitizing. The energy use to power washing machines and clothes dryers to wash and sanitize reusable bags creates GHG emissions. However, the quantity of GHG emissions depends on the method of washing (i.e., hand washing, electric or natural gas-powered washing machine) and on the frequency of washing.

GHG Emission Rates per Bag. Various studies have estimated GHG emissions for the different carryout bags (single-use plastic, paper or reusable bags) to determine a per bag GHG emission rate. The Boustead Report (2007) compared single-use plastic and paper bags and assumed that one paper bag could carry the same quantity of groceries as 1.5 plastic bags. Based on the Boustead Report (2007), 1,500 single-use plastic bags would generate 0.04 metric tons of CO₂E as a result of manufacture, transport, and disposal. Based on the Scottish Report (AEA Technology, 2005) and the Santa Clara County Negative Declaration for the Single Use Carryout Bag Ordinance (October 2010), GHG emissions associated with the manufacture, use, and disposal of a single-use paper bag are 2.97 times¹ greater than the emissions generated by the manufacture, use and disposal of a single-use plastic bag. Thus, based on the single-use plastic bag GHG emissions rate of 0.04 metric tons CO₂E per 1,500 from the Boustead Report, single-use paper bags would emit 0.1188 metric tons of CO₂E per 1,000 bags (0.04 x 2.97=0.1188). If used only once, the manufacture, use and disposal of a reusable cotton carryout bag results in 131 times the GHG emissions of a single use HDPE plastic carryout bag (Environment Agency, 2011). Therefore, reusable cotton carryout bags would emit 5.24 metric tons CO₂E per 1,000 bags (if used only once).

Table 4.2-1 lists the current GHG emissions associated with the manufacture, transport, and disposal of single-use plastic bags in Sacramento using the per bag GHG emissions rates discussed above and the estimated number of carryout bags currently used in the City. As discussed in Section 2.0, *Project Description*, based on the estimated single-use plastic bag use as shown in Table 2-2, retail customers in Sacramento currently use an estimated 249,539,243 single-use plastic bags per year. As shown in Table 4.2-1, overall GHG emissions associated

¹ 10% reduction (from a rate of 3.3 to 2.97) based on the Scottish Report (AEA Technology, 2005) and the Santa Clara County Negative Declaration, October 2010 based on Environmental Defense Fund's Paper Calculator.

with Sacramento single-use plastic bag use are 6,654 metric tons of CO₂E per year, or approximately 0.014 metric tons CO₂E per person.

**Table 4.2-1
 Existing Greenhouse Gas Emissions
 from Single-Use Plastic Bags in Sacramento**

Bag Type	Existing Number of Bags Used per Year	CO₂E (metric tons)	CO₂E per year (metric tons)	CO₂E per Person²
Single-use Plastic	249,539,243	0.04 per 1,500 bags ¹	6,654	0.014
Total			6,654	0.014

CO₂E = Carbon Dioxide Equivalent units

¹ Based on Boustead Report, 2007; Santa Monica Single-use Carryout Bag Ordinance Final EIR, January 2011.

² Emissions per person are divided by the current Sacramento population – 473,509 (California Department of Finance, 2013)

d. Regulatory Setting. The following regulations address both climate change and GHG emissions.

International and Federal Regulations. The United States is, and has been, a participant in the United Nations Framework Convention on Climate Change (UNFCCC) since it was produced by the United Nations in 1992. The objective of the treaty is “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” This is generally understood to be achieved by stabilizing global GHG concentrations between 350 and 400 ppm, in order to limit the global average temperature increases between 2 and 2.4°C above pre-industrial levels (IPCC 2007). The UNFCCC itself does not set limits on GHG emissions for individual countries or enforcement mechanisms. Instead, the treaty provides for updates, called “protocols,” that would identify mandatory emissions limits.

Five years later, the UNFCCC brought nations together again to draft the *Kyoto Protocol* (1997). The Kyoto Protocol established commitments for industrialized nations to reduce their collective emissions of six GHGs (CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs) to 5.2% below 1990 levels by 2012. The United States is a signatory of the Kyoto Protocol, but Congress has not ratified it and the United States has not bound itself to the Protocol’s commitments (UNFCCC, 2007). The first commitment period of the Kyoto Protocol ended in 2012. Governments, including 38 industrialized countries, agreed to a second commitment period of the Kyoto Protocol beginning January 1, 2013 and ending either on December 31, 2017 or December 31, 2020, to be decided by the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its seventeenth session (UNFCCC, November 2011).

In Durban (17th session of the Conference of the Parties in Durban, South Africa, December 2011), governments decided to adopt a universal legal agreement on climate change as soon as possible, but not later than 2015. Work will begin on this immediately under a new group called

the Ad Hoc Working Group on the Durban Platform for Enhanced Action. Progress was also made regarding the creation of a Green Climate Fund (GCF) for which a management framework was adopted (UNFCCC, December 2011; United Nations, September 2012).

Federal Regulations. The United States is currently using a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol's mandatory framework. The Climate Change Technology Program (CCTP) is a multi-agency research and development coordination effort (led by the Secretaries of Energy and Commerce) that is charged with carrying out the President's National Climate Change Technology Initiative (U.S. EPA, December 2007). However, the voluntary approach to address climate change and greenhouse gas emissions may be changing. The United States Supreme Court in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate motor-vehicle GHG emissions under the federal Clean Air Act.

The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The first annual reports for these sources were due in March 2011.

On May 13, 2010, the U.S. EPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 million tons (MT) CO₂E per year for GHG emissions. New and existing industrial facilities that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the U.S. EPA published the "PSD and Title V Permitting Guidance for Greenhouse Gases." The U.S. EPA's guidance document is directed at state agencies responsible for air pollution permits under the Federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry. It is expected that most states will use the U.S. EPA's new guidelines when processing new air pollution permits for power plants, oil refineries, cement manufacturing, and other large pollution point sources.

On January 2, 2011, the U.S. EPA implemented the first phase of the Tailoring Rule for GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 MT CO₂E per year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time new sources were subject to GHG Title V permitting if the source emits 100,000 MT CO₂E per year, or they are otherwise subject to Title V permitting for another pollutant and emit at least 75,000 MT CO₂E per year.

California Regulations. Assembly Bill (AB) 1493 (2002), referred to as "Pavley," requires ARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles beginning with the 2009 model year. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025. Fleet average emission standards would achieve a 22% reduction by 2012 and a 30% reduction by 2016.

In 2005, the governor issued Executive Order S-3-05, establishing statewide GHG emissions reduction targets. Executive Order (EO) S-3-05 provides that by 2010, emissions shall be reduced to 2000 levels; by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80% of 1990 levels (CalEPA, 2006). In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the “2006 CAT Report”) (CalEPA, 2006). The 2006 CAT Report identifies a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc.

California’s major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the “California Global Warming Solutions Act of 2006,” signed into law in 2006. AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels; the same requirement as under S-3-05), and requires ARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations for reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, the ARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT of CO₂E. The Scoping Plan was approved by ARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

Executive Order S-01-07 was enacted on January 18, 2007. The order mandates that a Low Carbon Fuel Standard (“LCFS”) for transportation fuels be established for California to reduce the carbon intensity of California’s transportation fuels by at least 10% by 2020.

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in CEQA documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

ARB Resolution 07-54 establishes 25,000 metric tons of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005% of California’s total inventory of GHG emissions for 2004.

SB 375, signed in August 2008, enhances the State’s ability to reach AB 32 goals by directing ARB to develop regional GHG emission reduction targets to be achieved from vehicles for 2020 and

2035. SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPOs) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the Regional Transportation Plan (RTP). On September 23, 2010, ARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Sacramento Area Council of Governments (SACOG), the MPO for Sacramento, was assigned targets of a 7% reduction in per capita GHG emissions from 2005 levels by 2020 and a 16% reduction in per capita GHG emissions by 2035.

In April 2011, the governor signed SB 2X requiring California to generate 33% of its electricity from renewable energy by 2020.

For more information on the Senate and Assembly bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and <http://www.arb.ca.gov/cc/cc.htm>.

Local Regulations and CEQA Requirements. Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted *CEQA Guidelines* provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, but contain no suggested thresholds of significance for GHG emissions. Instead, they give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The general approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move the state towards climate stabilization. If a project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant.

The Sacramento Climate Action Plan was adopted on February 14, 2012 and suggests a variety of possible actions to reduce GHG emissions in each of seven general categories, including sustainable land use, mobility and connectivity, energy efficiency and renewable energy, waste reduction and recycling, water conservation and wastewater efficiency, climate adaptation, and community involvement and empowerment. The Climate Action Plan includes a baseline inventory of the City's municipal and community (businesses, residents and workers) emissions, citywide emissions reduction targets, and a number of goals and strategies for obtaining those targets. The City's reduction targets for municipal and community emissions are as follows:

- By 2020, the City will reduce emissions by 15% from 2005 emission levels, a reduction of 1.37 MMT CO₂e.
- By 2030, the City and Community will reduce emissions by 37% from 2005 emissions levels, a reduction of 1.79 MMT CO₂e.
- By 2050, the City and Community will reduce emissions by 83% of 2005 levels, a reduction of 2.43 MMT CO₂e.

While setting goals beyond 2020 is important to provide long-term objectives, the Climate Action Plan primarily focuses on reducing emissions by 2020 because it is difficult to establish

targets beyond a 10–15 year time frame for which defensible reduction assumptions can be made. This is primarily due to uncertainty around future technological advances, demographic changes, and Federal and State laws.

The Sacramento Climate Action Plan will be incorporated into the 2035 General Plan as part of the 5-year General Plan Update. The new baseline year will be moved from 2005 to 2011 in order to bring the target and goals into phase with the 2035 General Plan.

In the absence of other local GHG thresholds of significance, for this analysis, the Proposed Ordinance is evaluated based on a project-based threshold of 4.6 metric tons CO₂e per service population (defined to include both residents and employees) per year. The City of Sacramento does not recommend adoption of that threshold for any other purpose at this time, but it is used for this analysis for the following reasons. First, the 4.6 metric tons CO₂e per service population threshold was adopted by the BAAQMD as a quantitative GHG emissions threshold for project-level analysis (BAAQMD, “California Environmental Quality Act: Air Quality Guidelines” (June 2010)). This threshold has been utilized in certified CEQA documents for similar bag ordinances, including in the City of Sunnyvale (FEIR, SCH #2011062032, December 2011) and the County of San Mateo (Draft EIR, SCH#2012042013 which are both also located in the BAAQMD, and the City of Huntington Beach (Draft EIR, SCH #2011111053, February 2012) located in the SCAQMD.

Second, the BAAQMD derived the recommended “efficiency” metric from statewide compliance with AB 32. SMAQMD recommends that lead agencies consider thresholds of significance for GHG emissions that are related to AB 32’s GHG reduction goals (<http://www.airquality.org/ceqa/cequguideupdate/Ch2EnvReviewThresholdsFINAL.pdf>). Other air pollution control districts have also recommended a similar “Efficiency Threshold”. For example, the San Luis Obispo County Air Pollution Control District recommends a 4.8 metric tons per person per year Efficiency Threshold (SLO APCD, Greenhouse Gas Thresholds and Supporting Evidence, March 2012). Staff at the South Coast Air Quality Management District (SCAQMD) has proposed a project-level threshold of 4.8 metric tons CO₂e per service population (defined to include both residents and employees) per year for use in the South Coast region (SCAQMD, “Proposed Tier 4 Performance Standards: Option #3: SCAQMD Efficiency Target”, September 2010 and personal communication, Ian MacMillan, Program Supervisor - CEQA Intergovernmental Review, SCAQMD on December 29, 2011).

Based on the above, the 4.6 metric tons per person per year threshold was considered most reasonable for use in this EIR analysis.

4.2.2 Impact Analysis

a. Methodology and Significance Thresholds.

According to Sacramento’s Thresholds of Significance, impacts related to GHG emissions would be significant if the proposed ordinance would:

- Impede the City or state efforts to meet AB32 standards for the reduction of greenhouse gas emissions.

The majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

For this EIR, the Proposed Ordinance is evaluated based on the project-level threshold of 4.6 metric tons CO₂e per service population (defined to include both residents and employees) per year (BAAQMD, "California Environmental Quality Act: Air Quality Guidelines" (June 2010)). A significant impact related to climate change would occur if GHG emissions associated with implementation of the Proposed Ordinance would exceed 4.6 metric tons of CO₂E units per service population (residents and employees) per year. In addition, impacts would be significant if the Proposed Ordinance would be inconsistent with any applicable GHG emissions reductions strategies such as the Sacramento Climate Action Plan, the 2006 CAT Report or the 2008 Attorney General's Greenhouse Gas Reduction Measures.

b. Project Impacts and Mitigation Measures.

Impact GHG-1 Implementation of the Proposed Ordinance would increase the number of recycled paper and reusable bags used in Sacramento and would therefore incrementally increase GHG emissions compared to existing conditions. However, emissions would not exceed thresholds of significance. Impacts would be *less than significant*.

The intent of the Proposed Ordinance is to reduce the use of single-use bags and promote the use of reusable bags by Sacramento retail customers. As such, the Proposed Ordinance would reduce the number of single-use plastic bags that are manufactured and increase the number of recycled paper and reusable bags that are manufactured, transported, and disposed of within Sacramento.

As described in the *Setting*, through manufacture, transport, and disposal, each single-use paper bag generates 2.97 times more GHG emissions than the manufacture, transport, and disposal of a single-use plastic bag. If used only once, the manufacture, use and disposal of a reusable cotton carryout bag results in 131 times the GHG emissions of a single use HDPE plastic bag (Environment Agency, 2011). Thus, on a per bag basis, single-use plastic bags have less impact than single-use paper and reusable bags. However, reusable bags are intended to be used multiple times. With reuse of carryout bags, the total carryout bags that would be manufactured, transported and disposed of would be reduced. As described in Section 2.0 *Project Description*, implementation of the Proposed Ordinance would result in replacement of single-use plastic bags currently used in Sacramento (estimated at 249,539,243 million annually) with an estimated 74.8 million recycled paper bags and 3.1 million reusable bags (refer to Table 2-2).

As a result of the increase in reusable bags, the Proposed Ordinance may lead to increased energy use as reusable bags would be machine washable or made from a material that can be cleaned or disinfected, as required by the Proposed Ordinance. Washing reusable bags used in

Sacramento would utilize energy or natural gas, depending on the type of washing machine and dryer used, and therefore incrementally increase energy-production related GHG emissions.

As discussed in Section 4.4, *Utilities and Service Systems*, it is anticipated that most reusable carryout bag users would simply include reusable bags in wash loads that would occur with or without the bags. Nevertheless, in order to provide a conservative estimate for impacts related to energy usage resulting from the Proposed Ordinance, this analysis assumes that the demand for energy would increase in order to maintain the hygiene of reusable bags, where bags are cleaned by washing machine and clothes dryers. Assuming that all reusable bags are made of cotton and that all of them are machine washed in separate loads for just reusable bags, this would create an additional 1,970,047 loads of laundry per year.²

Table 4.2-2 provides an estimate of GHG emissions that would result from the change in the makeup of carryout bags in Sacramento resulting from implementation of the Proposed Ordinance.

As shown in Table 4.2-2, although the total number of carryout bags would be reduced by approximately 59 million bags per year, the projected increase in the use of recycled paper and reusable bags is expected to increase overall GHG emissions associated with the manufacture, transport, and disposal of carryout bags by approximately 0.012 CO₂E per person per year compared to current conditions. Washing and drying of the additional reusable bags resulting from the proposed ordinance would also increase greenhouse gas emissions by approximately 0.0017 metric tons CO₂E per person per year.

Based on the conservative assumptions described above, implementation of the Proposed Ordinance would result in a net increase of approximately 0.049 metric tons CO₂E per person per year within Sacramento. However, both the increase in GHG emissions compared to existing conditions and the total emissions after implementation of the Proposed Ordinance would be less than 4.6 metric tons CO₂E per person per year. Therefore, impacts related to GHG emissions would be less than significant. Further, this estimate conservatively assumes that all reusable bags would be cotton bags and that reusable bags are used 52 times per year; thus the actual GHG emissions may be less.

² 3,119,241 bags washed monthly, 19 bags per load assuming an average washer capacity of 8 pounds per load and 6.8 ounces per bag, as measured on 8/10/2010 by Rincon Consultants, Inc. See Section 4.4 for more information.

**Table 4.2-2
 Estimated Greenhouse Gas Emissions
 from Carryout Bags in Sacramento
 with Implementation of the Proposed Ordinance**

Manufacture, Use, and Disposal					
Carryout Bag Type	Projected # of Carryout Bags Used per Year¹	GHG Impact Rate (metric tons CO₂E)	CO₂E per year (metric tons)	CO₂E per Person (metric tons)⁵	
Single-use Plastic	12,476,962	0.04 per 1,500 bags ²	333	0.0007	
Single-use Paper	74,861,773	0.1188 per 1,000 bags ³	8,894	0.0188	
Reusable	3,119,241	5.24 per 1,000 bags ⁴	16,345	0.0345	
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags ²	2,662	0.0056	
<i>Subtotal</i>			28,233	0.0596	
Washing					
Carryout Bag Type	# of Loads per Year⁶	Electricity Use Per Load (kWh)⁷	Total Electricity Use Per Year (kWh)	CO₂E per year (metric tons)	CO₂E per Person (metric tons)
Reusable	1,970,047	3.825	7,535,428	1,777 ⁸	0.0038
<i>Subtotal</i>				1,777	0.0038
Total GHG Emissions from Proposed Ordinance (Manufacture, Use and Disposal + Washing)				30,010	0.0634
Existing GHG Emissions				6,654	0.0141
Net Change (Total for Proposed Ordinance minus Existing)				23,355	0.0493

CO₂E = Carbon Dioxide Equivalent units

See Appendix D for emissions for each individual municipality

¹ Refer to Table 2.2 in Section 2.0, Project Description.

² Based on Boustead Report, 2007; Santa Monica Single use Carryout Bag Ordinance Final EIR, January 2011.

³ 10% reduction (from a rate of 3.3 to 2.97) based on the Scottish Report (AEA Technology, 2005) and the Santa Clara County Negative Declaration, October 2010 based on Environmental Defense Fund's Paper Calculator.

⁴ Based on Environment Agency – United Kingdom government report, 2011.

⁵ Emissions per person are divided by the existing population in Sacramento – 179,334 (Dept. of Finance, May 2013)

⁶ Assumes that all reusable bags would be machine washed. Assumes that each bag is washed once a month. Assumes 19 bags per load based on an average load capacity of 8 pounds per load and 6.8 ounces per bag (as measured on 8/10/2010 by Rincon Consultants, Inc.). See Table 4.5-9 in Section 4.4, Utilities and Service Systems.

⁷ US Department of Energy: Energy Efficiency and Renewable Energy, 2010.

⁸ Assuming Electricity = 0.524 pounds CO₂ per kWh and 2,204.6 pounds per metric ton (PG&E, 2013)

Mitigation Measures. Mitigation is not required since the impact would not be significant.

Significance after Mitigation. Impacts would be less than significant without mitigation.

Impact GHG-2 The Proposed Ordinance would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Impacts would be *less than significant*.

The Proposed Ordinance would be generally consistent with applicable regulations or plans addressing GHG reductions. As indicated above, the Sacramento Climate Action Plan suggests a variety of possible actions to reduce GHG emissions, including sustainable land use, mobility and connectivity, energy efficiency and renewable energy, waste reduction and recycling, water conservation and wastewater efficiency, climate adaptation, and community involvement and empowerment. These actions are intended to bring the community in line with the AB 32 Statewide goal of reducing GHG emissions to 1990 levels by 2020. In addition, the CAT published the Climate Action Team Report (the “2006 CAT Report”) in March 2006. The CAT Report identifies a recommended list of strategies that the State could pursue to reduce climate change GHG emissions. The CAT strategies are recommended to reduce GHG emissions at a statewide level to meet the goals of the Executive Order S-3-05. These are strategies that could be implemented by various State agencies to ensure that the Governor’s targets are met and can be met with existing authority of the State agencies. In addition, in 2008 the California Attorney General published The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level (Office of the California Attorney General, Global Warming Measures Updated May 21, 2008). This document provides information that may be helpful to local agencies in carrying out their duties under CEQA as they relate to global warming. Included in this document are various measures that may reduce the global warming related impacts of a project. Tables 4.2-3, 4.2-4 and 4.2-5 illustrate that the Proposed Ordinance would be consistent with the Sacramento Climate Action Plan, the GHG reduction strategies set forth by the 2006 CAT Report and the 2008 Attorney General’s Greenhouse Gas Reduction Measures.

**Table 4.2-3
Proposed Ordinance Consistency with the Sacramento Climate Action Plan**

Goals and Actions	Project Consistency
Waste Reduction and Recycling	
Achieve 75 percent diversion of solid waste by 2020, and work towards becoming a “zero waste” community by 2040.	Consistent The Proposed Ordinance is intended to reduce the number of single-use plastic bags distributed by retailers and used by customers and to promote a shift toward the use of long-lasting, durable, reusable bags by retail customers in Sacramento. The ordinance would also encourage diversion and recycling of recycled paper bags.
Expand collaborative efforts with targeted businesses to reduce waste and increase recycling of materials that would otherwise end up in a landfill.	Consistent The Proposed Ordinance would target businesses to reduce the use of single-use plastic bags and would promote a shift toward the use of long-lasting, durable, reusable bags by retail customers in Sacramento. The Proposed Ordinance require retail services to charge a minimum fee for recycled paper bags which is intended to deter customers from simply switching from plastic to paper. Rather, the fee is intended to help promote the use of reusable bags which reduces waste as fewer plastic and paper bags would end up in the landfill.

**Table 4.2-4
Proposed Ordinance Consistency with Applicable Climate Action
Team Greenhouse Gas Emission Reduction Strategies**

Strategy	Project Consistency
California Air Resources Board	
<p>Vehicle Climate Change Standards</p> <p>AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.</p>	<p>Consistent</p> <p>The trucks that deliver carryout bags to and from Sacramento retailers on public roadways would be in compliance with ARB vehicle standards that are in effect at the time of vehicle purchase.</p>
<p>Diesel Anti-Idling</p> <p>The ARB adopted a measure to limit diesel-fueled commercial motor vehicle idling in July 2004.</p>	<p>Consistent</p> <p>Current State law restricts diesel truck idling to five minutes or less. Diesel trucks operating from and making deliveries to Sacramento retailers are subject to this state-wide law.</p>
<p>Alternative Fuels: Biodiesel Blends</p> <p>ARB would develop regulations to require the use of 1 to 4% biodiesel displacement of California diesel fuel.</p>	<p>Consistent</p> <p>The diesel vehicles that deliver carryout bags to and from Sacramento on public roadways could utilize this fuel once it is commercially available.</p>
<p>Alternative Fuels: Ethanol</p> <p>Increased use of E-85 fuel.</p>	<p>Consistent</p> <p>Truck drivers delivering carryout bags could choose to purchase flex-fuel vehicles and utilize this fuel once it is commercially available regionally and locally.</p>
<p>Heavy-Duty Vehicle Emission Reduction Measures</p> <p>Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.</p>	<p>Consistent</p> <p>The heavy-duty trucks that deliver carryout bags to and from Sacramento retailers on public roadways would be subject to all applicable ARB efficiency standards that are in effect at the time of vehicle manufacture.</p>
<p>Achieve 50% Statewide Diversion Goal</p> <p>Achieving the State's 50% waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48% has been achieved on a statewide basis. Therefore, a 2% additional reduction is needed.</p>	<p>Consistent</p> <p>As of 2012, the City of Sacramento was diverting 43% of their solid waste (Sacramento Climate Action Plan), thereby falling short of the standards established by AB 939. Any disposal of carryout bags would be required to adhere to the existing standards. The Proposed Ordinance would also assist by promoting reusable bags, thus reducing the amount of solid waste generated in the form of single-use carryout bags.</p>
<p>Zero Waste – High Recycling</p> <p>Efforts to exceed the 50% mandate would allow for additional reductions in climate change emissions.</p>	<p>Consistent</p> <p>As described above, the City of Sacramento currently falls below the 50% goal of recycling. The Proposed Ordinance would assist in meeting the state standard by promoting reusable bags, thus reducing the amount of solid waste generated in the form of single-use carryout bags. The Proposed Ordinance would also shift single-use bag consumption from plastic to paper. This would increase recycling of single-use bags because paper bags are recycled by services provided to each residence and workplace in Sacramento. Consumer access to plastic bag recycling opportunities is limited.</p>

**Table 4.2-4
Proposed Ordinance Consistency with Applicable Climate Action
Team Greenhouse Gas Emission Reduction Strategies**

<i>Strategy</i>	<i>Project Consistency</i>
Energy Commission (CEC)	
<p><i>Fuel-Efficient Replacement Tires & Inflation Programs</i></p> <p>State legislation established a statewide program to encourage the production and use of more efficient tires.</p>	<p>Consistent</p> <p>Carryout bag delivery drivers could purchase tires for their vehicles that comply with state programs for increased fuel efficiency.</p>
<p><i>Alternative Fuels: Non-Petroleum Fuels</i></p> <p>Increasing the use of non-petroleum fuels in California's transportation sector, as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports.</p>	<p>Consistent</p> <p>Carryout bag delivery drivers could purchase alternative fuel vehicles and utilize these fuels once they are commercially available regionally and locally.</p>

**Table 4.2-5
Proposed Ordinance Consistency with Applicable
Attorney General Greenhouse Gas Reduction Measures**

<i>Strategy</i>	<i>Project Consistency</i>
Transportation-Related Emissions	
<p><i>Diesel Anti-Idling</i></p> <p>Set specific limits on idling time for commercial vehicles, including delivery vehicles.</p>	<p>Consistent</p> <p>Currently, the ARB's Airborne Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling restricts diesel truck idling to five minutes or less. Diesel trucks delivering carryout bags to Sacramento retailers are subject to this state-wide law.</p>

The Proposed Ordinance would be consistent with the Sacramento Climate Action Plan, the CAT strategies and measures suggested in the Attorney General's Greenhouse Gas Reduction Report as discussed in tables 4.2-3, 4.2-4 and 4.2-5. Therefore, the Proposed Ordinance would be consistent with the objectives of AB 32, SB 97, and SB 375. Impacts would be less than significant.

Mitigation Measures. Mitigation is not required since the impact would not be significant.

Significance after Mitigation. Impacts would be less than significant without mitigation.

c. Cumulative Impacts. Adopted and pending carryout bag ordinances, as described in Table 3-1 in Section 3.0, *Environmental Setting*, would continue to reduce the amount of single-use plastic bags, and promote a shift toward reusable bags. Similar to the proposed Reusable Bag Ordinance, such ordinances would be expected to generally reduce the overall number of bags manufactured and associated GHG emissions. In addition, similar to the Proposed Ordinance, other adopted and pending ordinances could incrementally change the GHG

emissions associated with bag manufacturing, transportation and disposal. At least twelve other agencies in the northern California region (including but not limited to the City of Millbrae, City of Fairfax, County of Santa Clara, City of San Jose, City of Palo Alto, City of Sunnyvale, County of Santa Cruz, Marin County, City of San Francisco, Alameda County, Sonoma County, and the County of San Mateo) have either adopted or are considering such ordinances. However, based on the incremental increase in per capita emissions associated with the proposed Reusable Bag Ordinance, the other ordinances are expected to also generate only minimal increases in per capita emissions (approximately less than 0.1 metric tons CO₂e per person per year) and thus would not generate a significant cumulative increase in GHG emissions. For these reasons, cumulative significant impacts associated with implementation of carryout bag ordinances throughout the state are not anticipated.

4.3 HYDROLOGY and WATER QUALITY

This section analyzes the Proposed Ordinance's potential to adversely affect hydrology and water quality.

4.3.1 Setting

Carryout bags are manufactured at various facilities, which may or may not be located in Sacramento or Sacramento County. Therefore, impacts to hydrology and water quality are not limited to the local watershed. However, for this analysis the local watershed and hydrologic conditions are discussed and used as an example of the types of effects that may occur as a result of the manufacturing and disposal of carryout bags.

a. Surface Water Drainage and Carryout Bags. Sacramento is located at the confluence of the Sacramento and American Rivers, which drain into the Sacramento-San Joaquin Delta and eventually the San Francisco Bay. The Sacramento River Basin covers 27,210 square miles and is the largest river in California by flow, length and drainage area. Within the Sacramento River Watershed there are 63 identified groundwater basins (4th Edition of the Sacramento Basin Plan, 1998).

The City of Sacramento is located at the edge of the Sacramento Valley Subregion and the American River Subregion. The Sacramento Valley Subregion begins at Shasta Lake and follows the Sacramento River south to the City of Sacramento and also encompasses the Sacramento Delta to the southwest of the City. The Sacramento-San Joaquin river delta encompasses 1,600 square miles and drains more than 40% of California. The waters and wetlands of the delta form the west coast's largest estuary and have significant economic and environmental importance. Also flowing through the City of Sacramento is the American River. The American River Subregion extends northeast of the City along the American River. The subregions encompass parts of five counties and elevations from over 9,000 feet to 23 feet at the confluence of the Sacramento River (Sacramento River Watershed Program).

Urban runoff within Sacramento consists of stormwater runoff from rainfall as well as non-stormwater runoff from human activities (e.g. over-irrigation of landscapes, vehicle washing, discharges from pools, spas, or water features, etc.). Runoff from streets, parking lots, commercial businesses, and private yards may contain oil, grease, pesticides and herbicides, heavy metals, paints and household chemicals, construction materials, sediment and eroded soil. Urban runoff is collected and transported through the City's storm drain system and ultimately discharged to local waterways such as the Sacramento and American Rivers, where they have caused substantial water quality degradation over the past century (Sacramento River Watershed Program, 2014).

Carryout bags that enter the storm drain system may affect storm water flow by clogging drains and redirecting flow. Typical single-use plastic bags weigh approximately five to nine grams and are made of thin (less than 2.25 mils thick) high density polyethylene (HDPE) (Hyder Consulting, 2007). Post-use from a retail store, a customer may reuse a single-use plastic bag at home, but eventually the bags are disposed in the landfill or recycling facility or discarded as

litter. Although some recycling facilities handle plastic bags, most reject them because they get caught in the machinery and cause malfunctioning, or are contaminated after use. Only about 11.1% of the plastic bags in California and nationwide are currently recycled (Green Cities California MEA, 2010; and Boustead, 2007). The majority of single-use plastic bags end up as litter or in the landfill. Even those collected by recycling and solid waste trucks and handled at transfer stations and landfills may blow away as litter due to their light weight (Green Cities California MEA, 2010). Single-use plastic bags that become litter can enter storm drains and may clog catch basins or be transported to the Sacramento Delta, San Francisco Bay, and eventually the Pacific Ocean.

Recycled paper bags also have the potential to enter the storm drains as litter. However, because of the weight, biodegradability of the materials, and recyclability, recycled paper bags are less likely to become litter compared to single-use plastic bags (Green Cities California MEA, 2010). In addition, because recycled paper bags are not as resistant to breakdown, there is less potential to clog catch basins compared to single-use plastic bags. Thus, although recycled paper bag litter may enter storm drains and affect hydrologic flow of surface water runoff, the potential to enter storm drains and cause hydrologic effects is less than with single-use plastic bags.

Reusable bags may also become litter and enter storm drains; however, these bags differ from the single-use bags in their weight and longevity. Reusable bags can be made from plastic or a variety of cloth such as vinyl or cotton. Built to withstand many uses, reusable bags weigh at least ten times what a single-use plastic bag weighs and two times what a recycled paper bag weighs, thereby restricting the movement by wind. Reusable bags are typically reused until worn out through washing or multiple uses, and then typically disposed either in the landfill or recycling facility. Because of the weight and sturdiness of these bags, reusable bags are less likely to become litter or to be carried from landfills by wind as litter compared to single-use plastic and recycled paper bags (Green Cities California MEA, 2010). Therefore, reusable bags are less likely to enter the storm drain system as litter.

b. Water Quality and Carryout Bags. The City of Sacramento participates in the Sacramento Coordinated Monitoring Program (CMP) along with the Sacramento Regional County Sanitation District. This monitoring program has five monitoring sites and tests for approximately 70 parameters at each site. The Sacramento River has been identified by the State of California as impaired by Chlordane, Chlorpyrifos, DDT, Diazinon, Dieldrin, Diuron, Mercury and PCB's (2010 Integrated Report, Clean Water Act Section). Water quality in the river is of particular concern because the river is habitat for several endangered species including the southernmost population of Chinook salmon, steelhead trout, foothill yellow-legged frog and western spadefoot.

Water quality may be affected by carryout bags in two different ways: litter from carryout bags and the use of materials for processing activities. As described above in *Surface Water Drainage and Carryout Bags*, litter that enters the storm drain system may clog storm drains and could result in contamination or may be transported into the local watershed or coastal habitat, violating waste discharge requirements (as described below in the *Regulatory Setting*). In addition, manufacturing facilities may utilize materials that, if released in an uncontrolled manner, could degrade the water quality in local waterways.

While single-use plastic bags are more likely to affect water quality as a result of litter, the manufacturing process utilizes “pre-production plastic,” which may degrade water quality if released either directly to a surface water body or indirectly through storm water runoff. Recycled paper bags have less litter-related effects on water quality than single-use plastic bags; however, the manufacturing process for paper bags may utilize various chemicals and materials and may also require the use of fertilizers, pesticides and other chemicals for production of resources (such as cotton). This may increase the potential for higher natural concentrations of trace metals, biodegradable wastes (which affect dissolved oxygen levels), and excessive major nutrients such as nitrogen and phosphorus if discharged into water bodies, either directly or indirectly through storm water runoff. If released into the environment, these potential pollutants can degrade water quality in local water bodies.

Reusable bags are less likely to affect water quality. Because of the weight and sturdiness of these bags, reusable bags are less likely to be littered or carried from landfills by wind as litter compared to single-use plastic and paper bags (Green Cities California MEA, 2010). However, similar to recycled paper bags, the manufacturing process for reusable bags can utilize materials such as chemicals or fertilizer for production of resources (such as cotton) that if released, either directly to a stream or indirectly via storm water runoff, could degrade water quality in local water bodies.

c. Regulatory Setting. The federal Clean Water Act (CWA) and the California Ocean Plan are the primary mechanisms through which pollutant discharges are regulated in California. The CWA established minimum national water quality goals and created the National Pollutant Discharge Elimination System (NPDES) permit system to regulate the quality of discharged water. All dischargers must obtain NPDES permits. Beginning in 1991, all municipal and industrial storm water runoff is also regulated under the NPDES system. Of the 126 “priority contaminants” (metals and organic chemicals) established by the CWA, the California Ocean Plan has established effluent limitations for 21 of those pollutants.

The U.S. Environmental Protection Agency (EPA) is the primary Federal agency responsible for implementing the CWA. The Regional Water Quality Control Board (RWQCB) is the primary state agency responsible for implementing the CWA and the state’s Porter-Cologne Water Quality Act within state waters. The RWQCB is also responsible for water quality regulation through its work in preparing and adopting the California Ocean Plan. Local agencies also have responsibility for managing wastewater discharges. All are required to meet criteria set forth in their NPDES permits, monitor their discharges, and submit monthly reports to the RWQCB and the EPA.

Assembly Bill (AB) 258 was enacted in 2008 to address problems associated with releasing “preproduction plastic” (including plastic resin pellets and powdered coloring for plastics) into the environment. The bill enacted Water Code Section 13367, requiring the State Water Resource Control Board and RWQCBs to implement a program to control discharges of preproduction plastic from point and nonpoint sources (Green Cities California MEA, 2010). Program control measures must, at a minimum, include waste discharge, monitoring, and reporting requirements that target plastic manufacturing, handling, and transportation facilities. The program must, at a minimum, require plastic manufacturing, handling, and transportation facilities to implement best management practices to control discharges of preproduction

plastics. This includes containment systems, careful storage of pre-production plastics, and the use of capture devices to collect any spills.

The State Water Resources Control Board (SWRCB, 2010) reports that it is taking the following actions to comply with Section 13367:

“State and Regional Water Board staff has conducted and are continuing to conduct compliance inspections of various types and scales of preproduction plastic manufacturing, handling, and transport facilities enrolled under California's Industrial General Permit (IGP) for storm water discharges...Collectively these inspections will help State and Regional Water Board staff to develop cost-effective regulatory approaches (including compliance-evaluation procedures and appropriate best management practices) for addressing this pollution problem.

“The State Water Board has issued an investigative order to all plastic-related facilities enrolled under the IGP to provide the State Water Board with critical information needed to satisfy the legislative mandates in AB 258 (Krekorian). Facilities subject to this order must complete an online evaluation and assess their points of potential preproduction plastics discharge and means of controlling these discharges. Data gathered as a result of this effort will be used to help the State Board understand the California plastics industry and ultimately develop appropriate regulation of these facilities to ensure compliance with the Clean Water Act.”

The City of Sacramento is listed under a regional municipal stormwater permit for Region 5. The Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities was adopted by the Regional Water Quality Control Board (RWQCB) for Region 5 on September 11, 2008. This permit regulates discharges from municipal separate storm drain systems into waterways under each co-permittee's jurisdiction. Provision C.10 of the MRP (Trash Load Reduction) requires permittees to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by 40% before July 1, 2014 by implementing control measures and other actions to reduce trash loads (RWQCB: Central Valley Region: Order R5-2008-0142, September 2008). Permittees implementing a control measure for a reusable bag ordinance would potentially receive a load reduction credit.

As part of the Sacramento Stormwater Quality Partnership, the City of Sacramento continues to develop and implement all applicable control measures to reduce non-storm water discharges into its storm drain system. The City is one of 7 co-permittees involved in the partnership who developed a Stormwater Quality Improvement Program (SQIP). The SQIP identified best management practices (BMPs) for storm water pollution control, public outreach and education programs, and local inspection and enforcement activities designed to improve storm water quality.

The Sacramento SQIP focuses on prevention of illicit connection/illegal dumping, quality of industrial and commercial discharges, and minimizing impacts from new development and construction activities. The City implements BMPs for maintaining street and roads, storm drains, and water utilities, and preventing stormwater pollution. The City also provides public education and outreach activities related to the prevention of discharges of pollutants such as pesticides, copper, mercury, and other wastes that may have an impact on water quality.

4.3.2 Impact Analysis

a. Methodology and Significance Thresholds. Based on the City's Thresholds of Significance, the Proposed Ordinance would create a significant hydrology or water quality impact if it would:

- 1) Substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the Specific Plan; or
- 2) Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

The Initial Study (see Appendix A) concluded that only the first criterion could potentially result in a significant impact, while the Proposed Ordinance would result in no impact with respect to the second criterion. Hence, only the first criterion is addressed in this section.

b. Project Impacts and Mitigation Measures.

Impact HWQ-1 Although the Proposed Ordinance would incrementally increase the number of recycled paper and reusable bags used in Sacramento, the overall reduction in the total amount of carryout bags would incrementally reduce the amount of litter and waste entering storm drains, improving water quality. This would be a *beneficial* effect.

As a result of the Proposed Ordinance, existing single-use plastic bags used in Sacramento (approximately 250 million annually) would be replaced by an estimated 75 million recycled paper bags, 3 million reusable bags, 12- million single-use plastic bag and 100 million replacement bags used for trash liners and dog waste bags (refer to Table 2-2 in Section 2.0, *Project Description*). This represents a 55% reduction in single-use plastic bags and a 24% reduction (approximately 59 million bags) in total carryout bags (including single-use plastic, recycled paper, and reusable).

Each type of carryout bag's potential to become litter is based on the bag's weight, material and quantity of bags used. The majority of single-use plastic bags end up as litter or in the landfill. Even those collected by recycling and solid waste trucks and handled at transfer stations and landfills may blow away as litter due to their light weight (Green Cities California MEA, 2010). Single-use plastic bags that become litter may enter storm drains from surface water runoff or may be blown directly into local waterways by the wind. Single-use plastic bag litter that enters the storm drain system can block or clog drains resulting in contamination (Green Cities California MEA, 2010). Based on the statewide data that currently almost 20 billion plastic grocery bags (or approximately 527 bags per person) are consumed annually in California (Green Cities California MEA, 2010), retail customers in Sacramento currently use approximately 250 million single-use plastic bags per year.

Similarly, recycled paper grocery bags also have the potential to enter storm drains and local waterways as litter. However, due to the weight, biodegradability of the materials, and

recyclability, recycled paper bags are less likely to become litter compared to single-use plastic bags (Green Cities California MEA, 2010). In addition, because recycled paper bags are not as resistant to breakdown, they would be less likely to block or clog drains compared to single-use plastic bags and would therefore be less likely to result in storm drain blockage or contamination.

Due to the weight and sturdiness of reusable bags made for multiple uses, reusable bags are less likely to be littered or carried from landfills by wind as litter compared to both single-use plastic and paper bags (Green Cities California MEA, 2010). Reusable bags are less likely to become litter compared to single-use plastic and recycled paper bags. Therefore, shifting toward greater use of reusable bags would improve water quality and reduce the potential for storm drain blockage.

The Proposed Ordinance is anticipated to reduce the overall number of carryout bags used in Sacramento per year by approximately 59 million bags. Therefore, the Proposed Ordinance would reduce the amount of litter associated with single-use plastic bags. Consequently, water quality would benefit from the Proposed Ordinance, which would be expected to reduce the amount litter that could enter storm drains and local waterways, thus improving water quality and reducing the potential for storm drain blockage.

Mitigation Measures. Water quality and storm drains and associated hydrological conditions would benefit from the Proposed Ordinance because the Proposed Ordinance would be expected to incrementally reduce the amount of litter that enters the storm drain system and local waterways, thereby improving water quality. Therefore, mitigation is not required.

Significance After Mitigation. Impacts to water quality and storm drain operation from litter entering storm drains and local waterways would be beneficial without mitigation.

Impact HWQ-2 The Proposed Ordinance could potentially alter processing activities related to bag production, which could potentially degrade water quality in some instances and locations. However, bag manufacturers would be required to adhere to existing regulations, including NPDES Permit requirements, AB 258 and the California Health and Safety Code. Therefore, impacts to water quality from altering bag processing activities would be *less than significant*.

The manufacturing process for single-use plastic, recycled paper, and reusable bags utilize various chemicals and materials. Single-use plastic bag manufacturers utilize “pre-production plastic.” As discussed in the *Setting*, recycled paper bags and reusable bag manufacturers may utilize various chemicals and materials and may also require the use of fertilizers, pesticides and other chemicals for production of resources (such as cotton) which may increase the potential for higher natural concentrations of trace metals, biodegradable wastes (which affect dissolved oxygen levels), and excessive major nutrients such as nitrogen and phosphorus. Similar to recycled paper bags, the manufacturing process for reusable bags can utilize materials such as chemicals or fertilizer for production of resources (such as cotton) that if released, either directly to a stream or indirectly via storm water runoff, could degrade water

quality in local water bodies. If released into the environment, these pollutant materials from the processing activities for bags could degrade water quality.

The intent of the Proposed Ordinance is to increase the use of reusable bags and reduce the use of single-use plastic and paper bags to reduce pollution in the Sacramento and American Rivers, the Delta, and in the marine environment. It is anticipated that by prohibiting single-use plastic bags and requiring a store to charge for each recycled paper bag distributed by retailers, the Proposed Ordinance would promote a shift to the use of reusable bags by retail customers and reduce the number of single-use plastic and paper bags within the City. The Proposed Ordinance is anticipated to reduce single-use plastic bags in Sacramento by 55% and reduce the use of all types of bags (including single-use plastic, recycled paper, and reusable) by approximately 59 million bags. These shifts in the types and number of bags used could potentially alter processing activities related to bag production. The manufacturing impacts of each bag type and the anticipated changes in use are described below.

Single-use Plastic Bags. Conventional single-use plastic bags are a product of the petrochemical industry and are typically produced by independent manufacturers who purchase virgin resin from petrochemical companies or obtain non-virgin resin from recyclers or other sources. Single-use plastic bags begin the manufacturing process with the conversion of the waste byproducts of crude oil or natural gas into hydrocarbon monomers, which are then further processed into polymers. These polymers are heated to form plastic resins, which are then blown through tubes to create the air pocket of the bag. Once cooled, the plastic film is stretched to the desired size of the bag and cut into individual bags (Green Cities California MEA, 2010). As described in the *Setting*, the plastic resin pellets are a concern when accidentally released (from spilling into storm drains during use or transport) into aquatic environments. AB 258 was enacted to address these concerns by implementing program control measures that require plastic manufacturing, handling, and transportation facilities to implement best management practices to control discharges (accidental release from spilling) of preproduction plastics. These measures include containment systems, careful storage of pre-production plastics, and the use of capture devices to collect any spills.

Products used in the manufacture single-use plastic bags, such as petroleum and natural gas, also have the potential to be released as result of an accident during transport or use. However, regulatory agencies such as the EPA set forth Preliminary Remediation Goals (PRGs) for various pollutants in soil, air, and tap water (USEPA Region IX, Preliminary Remediation Goals Tables, 2004). PRG concentrations can be used to screen pollutants in environmental media, trigger further investigation, and provide initial cleanup goals resulting from an accident or spill of petroleum or natural gas at a single-use plastic bag manufacturing facility.

Recycled Paper Bags. The majority of recycled paper bags are made from Kraft paper bags, which are manufactured from a pulp that is produced by digesting a material into its fibrous constituents via chemical and/or mechanical means. Kraft pulp is produced by chemical separation of cellulose from lignin. Chemicals used in this process include caustic sodas, sodium hydroxide, sodium sulfide, and chlorine compounds (Green Cities California MEA, 2010). Processed and then dried and shaped into large rolls, the paper is then printed, formed into bags, baled, and then distributed to grocery stores. The paper bag manufacturing process may utilize fertilizers, pesticides and other chemicals in the production of resources such as

pulp. These pollutants may increase the potential for higher concentrations of trace metals, biodegradable wastes (which affect dissolved oxygen levels), and excessive major nutrients such as nitrogen and phosphorus, causing eutrophication as a result of surface water runoff. A paper bag has 14 times the impact of one single-use plastic bag on eutrophication, which is caused when nitrate and phosphate are emitted into water, stimulating excessive growth of algae and other aquatic life (Green Cities California MEA, 2010). Eutrophication reduces the water quality and causes a variety of problems such as a lack of oxygen in the water (Green Cities California MEA, 2010). However, direct discharges of pollutants into waters of the United States are not allowed, except in accordance with the National Pollutant Discharge Elimination System (NPDES) program established in Section 402 of the Clean Water Act (CWA).

Recycled paper bag manufacturers are required to comply with the local plans and policies of the SWRCB and the RWQCB, which regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. For example, in the City of Sacramento, recycled paper bag manufacturers would be required to adhere to the Sacramento UWMP, which specifies BMPs to reduce the presence of pollutants in stormwater discharges to the maximum extent practicable. Recycled paper bag manufacturing facilities would be required to implement BMPs, reducing the likelihood that pollutants would enter storm drains and other aquatic environments. There are currently no known single-use bag manufacturers in the City of Sacramento or Sacramento County.

Reusable Bags. Reusable bags can be manufactured with various materials, including polyethylene (PE) plastic, polypropylene (PP) plastics, multiple types of cloth (cotton canvas, nylon, etc.), and recycled plastic beverage containers (polyethylene terephthalate, or PET), among others (Green Cities California MEA, 2010). Depending on the type of material used in the manufacturing process, reusable bags have various impacts to water quality. A single reusable low density polyethylene (LDPE) bag has 2.8 times the impact of a single-use plastic bag on eutrophication as result of the use of pollutants that are used for materials in the manufacturing process (Green Cities California MEA, 2010). In addition, other types of reusable bags, such as cotton canvas, may require the use of fertilizers, pesticides and other chemicals in the production process. These pollutants may increase the potential for higher natural concentrations of trace metals, biodegradable wastes (which affect dissolved oxygen levels), and excessive major nutrients such as nitrogen and phosphorus causing eutrophication as a result of surface water runoff. However, with reuse of a LDPE or cotton canvas bag as intended, overall impacts to eutrophication would be lower in comparison to a single-use plastic bag and a recycled paper bag since reusable bags are intended to be used “hundreds of times” (Green Cities California MEA, 2010). Therefore, each reusable bag would be expected to replace hundreds of single-use plastic or paper bags, more than offsetting the increased impacts associated with each individual bag.

As with other types of bags, reusable bag manufacturers would not be allowed to directly discharge pollutants into waters of the United States, except in accordance with the NPDES program established in Section 402 of the CWA. Reusable bag manufacturers may be required to obtain an “Individual” NPDES Permit and/or would need to adhere to an existing “General” NPDES Permit of the local area. An Individual NPDES permit regulates and limits the particular discharge at the manufacturing facility. The permit limits are based on the type of activity, nature of discharge and receiving water quality. Manufacturing facilities would need to

apply for and obtain a permit prior to the start of manufacturing operations. In addition, as part of the Individual Permit, a manufacturing facility would be required to monitor and report its discharges to the local Regional Water Quality Control Board to demonstrate that the facility's discharges are not in violation of any water quality standards.

Manufacturing facilities would also be required to adhere to existing General Permits that specify local discharge requirements for municipal storm water and urban runoff discharges. For example, in Sacramento, recycled paper bag manufacturers would be required to adhere to the Sacramento UWMP, which specifies BMPs to reduce the presence of pollutants in stormwater discharges to the maximum extent practicable.

Although reusable bags may utilize various materials, reusable bag manufacturers that utilize plastics in their production (for example, production of LPDE reusable bags) would also be required to adhere to pending requirements specified in AB 258, which addresses the release of "preproduction plastics" as described in the *Setting*. In addition, the California Health and Safety Code (Section 25531-25543.3) establishes a program for the prevention of accidental releases of regulated substances. With adherence to Health and Safety Code Section 25531-25543.3, reusable bag manufacturing facilities would be required to prepare and update a Risk Management Plan (RMP). This would further reduce the potential for a release of substances that may be washed into and through the storm drainage systems, Sacramento River, Sacramento-San Joaquin Delta, and ultimately to the San Francisco Bay.

Anticipated Changes in Bag Use. As discussed in Table 2-2 of Section 2.0, *Project Description*, this analysis assumes that as a result of the Proposed Ordinance, the approximately 250 million single-use plastic bags currently used in Sacramento annually would be reduced to approximately 190 million total bags (112 million plastic bags (single-use plastic bags and replacement plastic bags for items such as garbage can liners and dog waste bags), 3 million reusable bags plus 75 million recycled paper bags).

Although the Proposed Ordinance would be expected to incrementally increase the use of recycled paper bags and reusable bags in Sacramento, it would also eliminate approximately 137 million single-use plastic bags per year. With implementation of the Proposed Ordinance, approximately 190 million carryout bags (including recycled paper, single-use plastic, plastic bags for bin liners and dog waste, and reusable bags) would be manufactured for use in Sacramento – a decrease of 59 million bags compared to existing conditions. Because the Proposed Ordinance would reduce the overall number of carryout bags manufactured, it would reduce the overall impacts to water quality associated with bag manufacturing. Furthermore, any existing or potential manufacturing facilities would be required to adhere to existing federal, state and local regulations which are intended to protect water quality, as described above. Therefore, impacts to water quality related to the potential change of processing activities as a result of the Proposed Ordinance would not be significant.

Mitigation Measures. Because the impact would not be significant, no mitigation is required.

Significance After Mitigation. Impacts to water quality related to the potential change of process activities would be less than significant without mitigation.

c. Cumulative Impacts. Pending carryout bag ordinances, as described in Table 3-1 in Section 3.0, *Environmental Setting*, would continue to reduce the amount of single-use carryout bags, and promote a shift toward reusable bags. As discussed above, the hydrology and water quality impacts associated with the Proposed Ordinance would not be significant and would generally be beneficial. Other agencies in Northern California including (City of Millbrae, City of Fairfax, County of Santa Clara, City of San Jose, City of Sunnyvale, County of Santa Cruz, Marin County, City of San Francisco, Alameda County, Sonoma County, and the County of San Mateo) have either adopted or are considering such ordinances. These ordinances would be expected to result in similar reductions in the amount of litter entering storm drains, local creeks or watersheds, thereby improving water quality. In addition, the overall reduction in bag manufacturing expected to occur as a result of implementation of these ordinances would be expected to generally reduce water quality impacts associated with bag manufacturing. In addition, all recycled paper and reusable bag manufacturing facilities would be required to comply with applicable regulatory requirements pertaining to preservation of water quality, including AB 258 and the California Health and Safety Code, as discussed in Impact HWQ-2. For these reasons, cumulative significant impacts associated with implementation of carryout bag ordinances throughout the state are not anticipated.

4.4 UTILITIES AND SERVICE SYSTEMS

This section discusses potential impacts of the Proposed Ordinance to utilities, including water supply and distribution, wastewater collection and treatment, and solid waste disposal.

4.4.1 Setting

a. Water Supply and Demand. The Proposed Ordinance would apply to retailers located within the City of Sacramento. Water service in the City is provided by the City of Sacramento, Department of Utilities (SDU). About 85% of the SDU water supplies come from the American and Sacramento Rivers. The remaining 15% is derived from groundwater pumped from the North American and South American subbasins of the Sacramento Valley Groundwater Basin. As shown in Table 4.4-1, the estimated water supply is 283,300 while the total demand is estimated to be approximately 172,589 (Sacramento 2010 UWMP).

**Table 4.4-1
 Sacramento Water Supply and Demand**

Service Provider	Service Area	Water Sources	Estimated Minimum Water Supply in 2015 (AFY)	Estimated Total Demand in 2015 (AFY)	Excess Supply (AFY)
Sacramento Department of Utilities	City of Sacramento	Surface Water (Sacramento and American Rivers)	283,300	172,589	118,211

*AFY = acre-feet per year
 Source: SUWMP, 2011 UWMP*

No known carryout bag manufacturing facilities are located within Sacramento County; therefore, water demand associated with single-use plastic bag manufacturing does not directly affect the existing water supply within Sacramento.

b. Wastewater Collection and Treatment. The Sacramento Regional County Sanitation District (SRCSD) provides wastewater collection and treatment services within Sacramento. SRCSD . Table 4.4-2 shows the existing permitted capacity (181 million gallons per day of wastewater (mgd)), the average flow (115 mgd) and the remaining capacity at the plant (66 mgd). Since no manufacturing facilities are located in Sacramento, wastewater generation associated with single-use plastic bag manufacturing does not directly affect the Sacramento Regional Wastewater Treatment Plant.

**Table 4.4-2
 Current Treatment Plant Flow and Remaining Capacity**

Treatment Plant	Permitted Capacity (mgd)	Average Flow (mgd)	Remaining Capacity (mgd)
Sacramento Regional Wastewater Treatment Plant	181	115	66

*mgd = million gallons per day of wastewater
 Dry weather capacities and flows reported unless otherwise noted.
 Sources: 2012 SRCSD State of the District Report*

c. Solid Waste. One active landfill is located in Sacramento County: the Kiefer Landfill and Recycling Center located in Sloughhouse. The Kiefer Landfill has a maximum permitted throughput of 10,815 tons per day, a remaining capacity of 112,900,000 cubic yards, and an estimated closure date of January 1, 2064 (CalRecycle, January 2014). The current average daily disposal is approximately 1,643 tons (CalRecycle, 2013); therefore, the landfill has a remaining daily capacity of 9,172 tons.

The City of Sacramento is required to comply with State Law AB 939, the California Integrated Waste Management Act, which requires every city in California to divert at least 50% of the solid waste it generates from landfills. The Sacramento Regional Solid Waste Authority (SWA) partners with the City of Sacramento to ensure Sacramento County’s compliance with AB 939. The SWA surpassed the state’s 50% mandate and posted a 70% diversion rate for Sacramento in 2010 (Sacramento County Department of Waste Management & Recycling, 2012). Therefore, Sacramento complies with the standards established by AB 939.

Solid Waste Generation Associated with Single-use Plastic Bags. Various studies have estimated solid waste rates related to the different types of bags (single-use plastic, recycled paper or reusable bags) to determine a per bag solid waste rate. Assuming 11.1% of single-use plastic bags are recycled in the United States and 49.5% of recycled paper bags are recycled (EPA, 2011) and using the Ecobilan data, it was estimated that a single-use plastic bag would generate 0.0066 kilograms (kg) of solid waste per bag, while a recycled paper bag would generate 0.0140 kg of waste per bag. In terms of reusable bags, cotton bags are assumed to be the heaviest type of reusable bags. Based on data from the EPA (2011) a reusable cotton bag would generate 0.2 kg of waste per bag. Similarly, using the Boustead data and assuming the EPA recycling rates discussed above (EPA, 2011), it is estimated that single-use plastic bags would produce 0.0042 kg waste per bag, while a recycled paper bag would generate 0.0171 kg of waste per bag. The Boustead data does not estimate the solid waste from reusable bags. Tables 4.4-3 and 4.4-4 estimate the amount of solid waste associated with single-use plastic bags currently used in Sacramento based on the Ecobilan and Boustead studies.

**Table 4.4-3
 Current Solid Waste Associated with Single-use Plastic Bags
 Based on Ecobilan Data**

Number of Single-use Plastic Bags	Solid Waste		
	Solid Waste per Bag (kg)	Solid Waste Per Day (tons)	Solid Waste per Year (tons)
249,539,243	0.0066	4.96	1,811

*Calculations are contained in the Utility Worksheets contained in Appendix E
 Source: Ecobilan, February 2004*

**Table 4.4-4
 Current Solid Waste Generation Associated with Single-use Plastic Bags
 Based on Boustead Data**

Number of Single-use Plastic Bags	Solid Waste		
	Solid Waste per Bag (kg)	Solid Waste Per Day (tons)	Solid Waste per Year (tons)
249,539,243	0.0042	3.14	1,148

*Calculations are contained in the Utility Worksheets contained in Appendix E
 Source: Boustead Consulting and Associates Ltd. 2007.*

As shown in Table 4.4-3, based on EPA recycling rates and the Ecobilan data, the use of single-use plastic bags within Sacramento generates approximately 4.96 tons of solid waste per day, or 1,811 tons per year. Based on the Boustead data (Table 4.4-4), the use of single-use plastic bags within Sacramento generates approximately 3.14 tons of solid waste per day, or 1,148 tons per year. The difference in solid waste results between the Ecobilan data and the Boustead data is attributed to the Boustead data having a lower rate of waste per bag for single-use plastic bags.

4.4.2 Impact Analysis

a. Methodology and Significance Thresholds. To analyze impacts to utilities, the anticipated change in water demand and wastewater and solid waste generation resulting from implementation of the Proposed Ordinance was compared to the available capacity of facilities that serve Sacramento.

Based on the City’s Thresholds of Significance, a significant impact related to utilities and service systems would occur if the Proposed Ordinance would:

- 1) Result in the determination that adequate capacity is not available to serve the project’s demand in addition to existing commitments; or
- 2) Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts.

The Initial Study (Appendix A) determined that potential increases in water use, wastewater generation, and solid waste could lead to significant impacts for these two criteria. Therefore, impacts related to water, wastewater, and solid waste are discussed below.

b. Project Impacts and Mitigation Measures

Impact U-1 **The increased use of reusable bags within Sacramento as a result of the Proposed Ordinance would minimally increase water demand due to washing of reusable bags. However, sufficient water supplies are available to meet the projected increase in demand. Therefore, water supply impacts would be less than significant.**

The Proposed Ordinance would increase the use of recycled paper bags and reusable bags as a result of prohibiting the distribution of single-use plastic bags by specified retailers and requiring a mandatory charge for recycled paper bags. Manufacturers of carryout bags are not known to be located within the City of Sacramento. Therefore, manufacturing facilities would not utilize the water supplies of the City.

In addition to water use from the manufacture of recycled paper and reusable bags, the Proposed Ordinance may result in increased water use as reusable bags would be machine washable or made from a material that can be cleaned or disinfected, as required by the Proposed Ordinance. Periodic washing of reusable bags for hygienic purposes would be the responsibility of the individual customers. It is assumed that individuals would generally continue to practice good hygiene and would wash reusable bags on a regular basis. Washing reusable bags used within Sacramento would utilize local water supplies. It is anticipated that most reusable bag users would simply include the bags in wash loads that would occur with or without the bags. Nevertheless, in order to provide a conservative estimate the Proposed Ordinance's impact with respect to water demand, this analysis assumes that reusable bags would be washed separately. This analysis assumes that all reusable bags would be machine washed. Assuming that all new reusable bags require monthly cleaning in a washing machine, the total increase in water demand (as shown in Table 4.4-5) would be approximately 241.8 AFY.

As stated in the *Setting*, there is approximately 118,211 AFY of excess water supply in Sacramento. Thus, the potential increase in water demand due to implementation of the Proposed Ordinance is within the capacity of the water supplies of Sacramento and significant water supply impacts would not occur. Furthermore, the estimated water demand associated with implementation of the Proposed Ordinance is conservative, as it assumes that 100% of reusable bags would be washed in separate washing machine loads rather than included in existing wash loads.

**Table 4.4-5
 Water Use From Reusable Bag Cleaning**

# of Additional Reusable Bags from Proposed Ordinance that Require Washing¹	Number of Times Washed per Year (monthly)²	# of Bags per Wash Load³	# of Loads per Year	Gallons of Water per Wash Load⁴	Total Water Use (gallons per year)	Total Water Use (AFY)
3,119,241	12	19	1,970,047	40	78,801,866	241.8
TOTAL					78,801,866	241.8

¹ Assumes that all of reusable bags would be machine washed.

² Assumes that each reusable bag is washed once a month.

³ Assumes an average washer capacity of 8 pounds per load and 6.8 ounces per reusable bag (as measured on 8/10/2010 by Rincon Consultants, Inc.)

⁴ Source: California Energy Commission: Consumer Energy Center, 2010; City of Santa Monica Carryout Bag Final EIR, January 2011.

Mitigation Measures. Impacts would be less than significant; therefore mitigation is not required.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Impact U-2 Water use associated with washing reusable bags would incrementally increase wastewater generation. However, projected wastewater flows would remain within the capacity of Sacramento wastewater collection and treatment systems and would not exceed applicable wastewater treatment requirements. Impacts would be *less than significant*.

Although the Proposed Ordinance would not result in additional sewer connections or an increase in the Sacramento population, it may incrementally increase water use associated with washing of reusable bags as described under Impact U-1 and, therefore, may incrementally increase wastewater generation. As shown in Table 4.4-2, the Sacramento Regional Wastewater Treatment Plant has approximately 66 mgd of additional capacity.

The manufacture of all types of carryout bags produces wastewater (as described above in the *Setting*); however, because no known manufacturing facilities are located within the City of Sacramento, the use of single-use plastic bags does not currently affect wastewater conveyance or treatment facilities serving Sacramento and the projected increased use of recycled paper bags and reusable bags as a result of the Proposed Ordinance would not affect wastewater conveyance facilities or the Sacramento Regional Wastewater Treatment Plant.

The use of reusable bags within Sacramento would, however, require periodic washing of bags for hygienic purposes. Assuming that 100% of the water used to wash reusable bags would become wastewater, approximately 78.8 million gallons per year or 215,896 gallons per day (0.215 mgd) would enter the sewer system and require treatment at the Sacramento Regional

Wastewater Treatment Plant. As shown in Table 4.4-4, the plant has approximately 66 mgd of remaining capacity to treat additional wastewater.

Based on the above discussion, there is adequate capacity to treat the additional wastewater that would result from the Proposed Ordinance and new facilities would not be needed. Further, this analysis is based on conservative assumptions and actual water use and wastewater generation may be lower. Impacts would be less than significant.

Mitigation Measures. Impacts would be less than significant; therefore, mitigation is not necessary.

Significance After Mitigation. Impacts related to wastewater generation would be less than significant without mitigation.

Impact U-3 **The Proposed Ordinance would alter solid waste generation rates in Sacramento due to an increase in recycled paper and reusable bag use and a reduction in single-use plastic bag use. However, projected future solid waste generation would remain within the capacity of regional landfills. Impacts would therefore be *less than significant*.**

Solid waste generated within Sacramento is taken to the Kiefer Landfill and Recycling Center. The Proposed Ordinance does not involve any physical development. However, use of all types of carryout bags would require disposal at the end of use and changes in the number and types of carryout bags used would alter the amount of solid waste generation. Tables 4.4-6 and 4.4-7 estimate the anticipated change in solid waste generation that would result from the Proposed Ordinance using the Ecobilan (Table 4.4-6) and the Boustead (Table 4.4-7) data, as discussed in the *Setting*.

**Table 4.4-6
Solid Waste Due to Carryout Bags Based on Ecobilan Data**

Type of Carryout Bag	Number of Carryout Bags	Solid Waste		
		Solid Waste per Carryout Bag per day (kg)	Solid Waste Per Day (tons)	Solid Waste per Year (tons)
Single-use Plastic	12,476,962	0.0066	0.25	90.53
Recycled Paper	74,861,773	0.0070	3.15	1,151.23
Reusable*	3,119,241	0.200	1.88	687.67
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.0066	1.98	724.26
Total			7.27	2,653.70
Existing			4.96	1,810.66
Net Change (Total minus Existing)			2.31	843.04

*Calculations are contained in the Utility Worksheets contained in Appendix E.
Source: Ecobilan, February 2004*

** A conservative assumption that all reusable bags would be made of cotton and would be disposed in a landfill after one year is included in this analysis.*

As shown in Table 4.4-6, based on the Ecobilan data and using an assumption that all reusable bags are made of cotton and would be sent to a landfill, the Proposed Ordinance would result in a net increase of approximately 843 tons of solid waste per year. As shown in Table 4.4-7, based on the Boustead data and assuming that all reusable bags are made of cotton and would be disposed of each year, there would be an increase of approximately 1,469 tons of solid waste per year. The Boustead study shows single-use plastic bag waste as lower in weight and recycled paper bag waste as higher in weight than the Ecobilan data, thus resulting in a higher net increase in solid waste generation.

The above estimates represent a conservative scenario that assumes approximately half of all recycled paper bags would be deposited in a landfill even though Sacramento has a higher recycling rate of approximately 70% (CalRecycle, 2013) than the EPA rate of 49%. In addition, this analysis conservatively assumes that all reusable bags would be cotton bags (the heaviest bag available) and that each reusable bag purchased per year would be deposited in a landfill within that year. In reality, Sacramento residents would likely recycle paper bags at a higher rate than the 49.5% assumed in this analysis based on the City’s high diversion rate and would use various types of reusable bags, many of which weigh less than cotton bags. Finally, because the Proposed Ordinance includes requirement that reusable bags be designed for a minimum of 125 uses, it is likely that many reusable bags would be utilized for more than one year so would not be disposed of annually. Nevertheless, based on these conservative scenarios, the increase in solid waste would range from an estimated 2.31 to 4.03 tons per day. The maximum increase of 4.03 tons per day would represent 0.04% of the remaining daily capacity at the Kiefer Landfill and Recycling Center, which has a remaining daily capacity of 9,988 tons. Therefore, the impact to solid waste facilities as a result of the Proposed Ordinance would be less than significant.

**Table 4.4-7
Solid Waste Due to Carryout Bags Based on Boustead Data**

Type of Carryout Bag	Number of Carryout Bags	Solid Waste		
		Solid Waste per Carryout Bag per day (kg)	Solid Waste Per Day (tons)	Solid Waste per Year (tons)
Single-use Plastic	12,476,962	0.0042	0.16	57.38
Recycled Paper	74,861,773	0.0171	3.87	1,412.72
Reusable*	3,119,241	0.200	1.88	687.67
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.0042	1.26	459.08
Total			7.17	2,616.85
Existing			3.14	1,147.69
Net Change (Total minus Existing)			4.03	1,469.16

*Calculations are contained in the Utility Worksheets contained in Appendix E.
Source: Boustead Consulting and Associates Ltd. 2007. Note: Boustead data does not estimate solid waste from reusable bags.*

** Since Boustead does not estimate solid waste from reusable bags, a conservative assumption that all reusable carryout bags would be made of cotton is included in this analysis.*

Mitigation Measures. Impacts would be less than significant; therefore, mitigation is not required.

Significance After Mitigation. Impacts related to solid waste generation would be less than significant without mitigation.

c. Cumulative Impacts. Adopted and pending carryout bag ordinances, as described in Table 3-1 in Section 3.0, *Environmental Setting*, would continue to reduce the amount of single-use plastic bags, and promote a shift toward reusable bags. Cumulative impacts are discussed below by impact area.

Water. Similar to the Proposed Ordinance, other adopted and pending ordinances could incrementally increase water use associated with washing of reusable bags for hygienic purposes. Throughout California, other jurisdictions have either adopted or are considering such ordinances. However, based on the incremental water use associated with the Proposed Ordinance (increase of approximately 2412 AFY in the Sacramento), the other ordinances are not expected to generate an increase in water that would exceed water supplies in their respective regions. Moreover, ordinances within individual communities would not have additive effects in conjunction with ordinances within different watersheds and reliant on different water supplies. Therefore, cumulative water impacts would not be significant.

Wastewater. Similar to the Proposed Ordinance, other adopted and pending carryout bag ordinances could incrementally increase wastewater associated with washing of reusable bags. Other agencies in Northern California including (City of Millbrae, City of Fairfax, County of Santa Clara, City of San Jose, City of Sunnyvale, County of Santa Cruz, Marin County, City of San Francisco, Alameda County, Sonoma County, and the County of San Mateo) have either adopted or are considering such ordinances. However, based on the incremental increase in wastewater associated with the Proposed Ordinance (approximately 215,616 gallons per day), the other ordinances are not expected to generate an increase in wastewater that would exceed the capacity of a wastewater treatment plant or require new or expanded facilities within their respective regions. Moreover, ordinances within individual communities would not have additive effects in conjunction with ordinances in other communities that are served by different wastewater collection and treatment systems. Therefore, cumulative wastewater impacts would not be significant.

Solid Waste. Similar to the Proposed Ordinance, other adopted and pending ordinances could incrementally increase solid waste associated with the use of bags. Other agencies in Northern California including (City of Millbrae, City of Fairfax, County of Santa Clara, City of San Jose, City of Sunnyvale, County of Santa Cruz, Marin County, City of San Francisco, Alameda County, Sonoma County, and the County of San Mateo) have either adopted or are considering such ordinances. As described in Impact U-3, based on conservative assumptions regarding carryout bag weight, use, and durability, an incremental increase in solid waste generation could occur. Based on the increase in solid waste associated with the Proposed Ordinance (estimated at between 2.31 to 4.03 tons per day), other ordinances are not expected to generate an increase in solid waste that would exceed the capacity of a regional landfill or require new or expanded facilities within their respective regions. Moreover, ordinances within individual communities would not have additive effects in conjunction with ordinances in other communities that are served by different solid waste disposal facilities. Therefore, cumulative solid waste impacts would not be significant.

5.0 OTHER CEQA DISCUSSIONS

This section discusses additional issues required for analysis under CEQA, including growth inducement and significant irreversible environmental effects.

5.1 GROWTH INDUCING IMPACTS

The *CEQA Guidelines* require a discussion of a proposed project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. Therefore, the Proposed Bag Ordinance's growth-inducing potential is considered significant if it could result in significant physical effects in one or more environmental issue areas. The most commonly cited example of how an economic effect might create a physical change is where economic growth in one area could create blight conditions elsewhere by causing existing competitors to go out of business and the buildings to be left vacant.

5.1.1 Economic and Population Growth

The Proposed Ordinance would (1) prohibit the free distribution of single-use plastic bags and (2) require retail establishments to charge customers (at least \$0.10) for recycled paper carryout bags and reusable carryout bags, at the point of sale. The intent of the Proposed Ordinance is to reduce the environmental impacts of pollution related to single-use plastic bags in local waterways such as the Sacramento and American Rivers, and the Sacramento San Joaquin Delta as well as to promote a shift toward the use of reusable bags by retail customers in Sacramento. The proposed Bag Ordinance would not include development of any physical structures or involve any construction activity.

Single-use plastic bag production and distribution would decline as a result of the Proposed Ordinance. However, employment patterns in Sacramento would not be affected as there are no known plastic bag manufacturing facilities in the City. In addition, recycled paper bag use is anticipated to increase incrementally. However, similar to single-use plastic bag manufacturing, employment patterns in the region would not be affected by the proposed Bag Ordinance as there are no known paper bag manufacturing plants in Sacramento. There is a paperbag manufacturing plant in Buena Park, California (County of San Mateo Draft EIR, June 2012).

Demand for reusable bags is anticipated to increase. Nevertheless, incremental increases in the use of recycled paper and reusable bags in the region is not anticipated to significantly affect long-term employment at reusable bag manufacturing facilities or increase the region's population.

Revenues generated by the sale of recycled paper bags would remain with the affected stores and are intended to offset the costs of implementing the Proposed Ordinance. The Proposed Ordinance is not expected to generate substantial economic growth.

Based on the above, the Proposed Ordinance would not be growth-inducing as it would not affect significantly long-term local or regional employment patterns or increase the region's population.

5.1.2 Removal of Obstacles to Growth

The Proposed Ordinance would not involve any physical development. As such, it would not necessitate any improvements to water, sewer, and drainage connection infrastructure. No new roads would be required as the only change in traffic patterns would involve deliveries of paper and reusable bags to existing businesses. Because the Proposed Ordinance would not include any physical development or construction activities and would not involve the extension of infrastructure into areas that otherwise could not accommodate growth, it would not remove an obstacle to growth.

5.2 IRREVERSIBLE ENVIRONMENTAL EFFECTS

The *CEQA Guidelines* require that EIRs reveal the significant environmental changes that would occur with project development. CEQA also requires decisionmakers to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. This section addresses non-renewable resources, the commitment of future generations to the proposed Bag Ordinance, and irreversible impacts associated with the Proposed Ordinance.

As an ordinance, the project would not include development of any physical structures or involve any construction activity. Therefore, the Proposed Ordinance would not alter existing land uses or cause irreversible physical alterations related to land development or resource use.

As discussed in Section 4.1, *Air Quality*, air pollutant emissions would not be increased beyond SMAQMD or City of Sacramento thresholds and ozone emissions associated with plastic bag manufacture would be reduced compared to existing conditions. As discussed in Section 4.3, *Greenhouse Gas Emissions*, although the proposed Ordinance would result in net increase of GHG emissions (approximately 0.049 metric tons CO₂e/person/year) compared to existing conditions, this increase would not exceed any thresholds of significance and the Proposed Ordinance would be consistent with applicable plans, policies and regulations related to reducing GHG emissions, including the Sacramento Climate Action Plan. Thus, the proposed Bag Ordinance would not result in any significant impacts related to air quality and GHG emissions.

6.0 ALTERNATIVES

As required by Section 15126.6 of the *CEQA Guidelines*, this section examines a range of reasonable alternatives to the proposed project. The following four alternatives are evaluated:

- *Alternative 1: No Project*
- *Alternative 2: Ban on Single-Use Plastic Bags, \$0.25 fee on Recycled Paper Bags and Reusable Bags*
- *Alternative 3: Ban on Both Single-Use Plastic Bags and Recycled Paper Bags*
- *Alternative 4: Ban on Single-Use Plastic Bags, \$0.10 fee on Recycled Paper Bags and Reusable Bags at all retail establishments.*

Each alternative also includes a discussion of impacts should the City of Sacramento adopt one of these alternatives. This section also includes a discussion of the “environmentally superior alternative” among those studied.

6.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

6.1.1 Description

The no project alternative assumes that the Reusable Bag Ordinance is not adopted or implemented. Single-use plastic and recycled paper bags would continue to be available free-of-charge to customers at most retail stores throughout the City of Sacramento. In addition, reusable bags would continue to be available for purchase by retailers. Thus, it is assumed that the use of carryout bags at retail stores would not change compared to current conditions.

6.1.2 Impact Analysis

No change in environmental conditions would occur under this alternative because neither a ban nor a mandatory charge for recycled paper or reusable bags would be imposed. Thus, Sacramento retail customers would have no incentive to alter their existing carryout bag preferences. Because conditions would not change under this alternative, none of the impacts in the studied issue areas associated with the Proposed Ordinance would occur. This alternative would not increase recycled paper bag use and associated atmospheric acidification emissions. This alternative would not result in the change in truck trips associated with delivering reusable bags and paper bags that would occur with implementation of the Proposed Ordinance and would therefore eliminate the air quality emissions and greenhouse gas (GHG)/climate change impacts associated with such trips. In addition, because the No Project alternative would not facilitate a shift to reusable bags, the Proposed Ordinance’s less than significant impacts related to water and wastewater demand from washing reusable bags would be eliminated. On the other hand, this alternative would not achieve the Proposed Ordinance’s beneficial effects relative to litter reduction, hydrology, and water quality that are expected to result from implementation of the Proposed Ordinance. Solid waste generation would not change from existing conditions; therefore, there would be no impact related to solid waste facilities.

6.2 ALTERNATIVE 2: BAN ON SINGLE-USE PLASTIC BAGS, \$0.25 FEE ON RECYCLED PAPER BAGS AND REUSABLE BAGS.

6.2.1 Description

Similar to the Proposed Ordinance, this alternative would prohibit Sacramento retailers from providing single-use plastic bags to customers at the point of sale. However, under this alternative, the Ordinance would mandate a minimum of a \$0.25 charge for recycled paper and reusable bags. This equates to a \$0.15 increase per bag over the minimum fee under the Proposed Ordinance.

It is anticipated that this alternative would reduce the number of recycled paper bags used in the Sacramento by approximately 60 million bags per year compared to the Proposed Ordinance. Though the price for reusable bags would also increase, it is assumed that patrons would still switch to reusable bags since reusable bags can be used multiple times. It is assumed that as a result of the increased charge, recycled paper bag use would drop to 6%. Bag use would shift further toward reusable bags, which would represent 89% of bag use (assumption rates from City of San Jose Final EIR, SCH # 2009102095, October 2010). It is assumed that each reusable bag would be used on average 52 times per year. As a result, the total number of bags used in the City of Sacramento is expected to decrease by approximately 59 million bags when compared to the Proposed Ordinance. The total estimate of carryout bag use under this alternative, compared to the Proposed Ordinance, is summarized in Table 6-1.

**Table 6-1
 Estimated Carryout Bag Use: Proposed Ordinance versus Alternative 2**

Bag Type	Carryout Bags Used Annually	
	Proposed Ordinance ¹	Alternative 2 ²
Single-use Plastic	12,476,962	12,476,962
Recycled paper	74,861,773	14,972,355
Reusable	3,119,241	4,270,960
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	99,815,697
Total	190,273,673	131,535,974

¹ Refer to Table 2.2 in Section 2.0, Project Description

² Based on assumptions of 5% single-use plastic bag use remaining, 6% paper bag use, and 89% conversion to reusable bags (based on 52 uses per year) (using the Herrera Study contained in the City of San Jose Final EIR, October 2010).

Under this alternative, only those retail establishments defined as a “Store” in the Proposed Ordinance would be affected. Therefore, the number of single-use plastic bags used annually would remain at 5% of the current use.

6.2.2 Impact Analysis

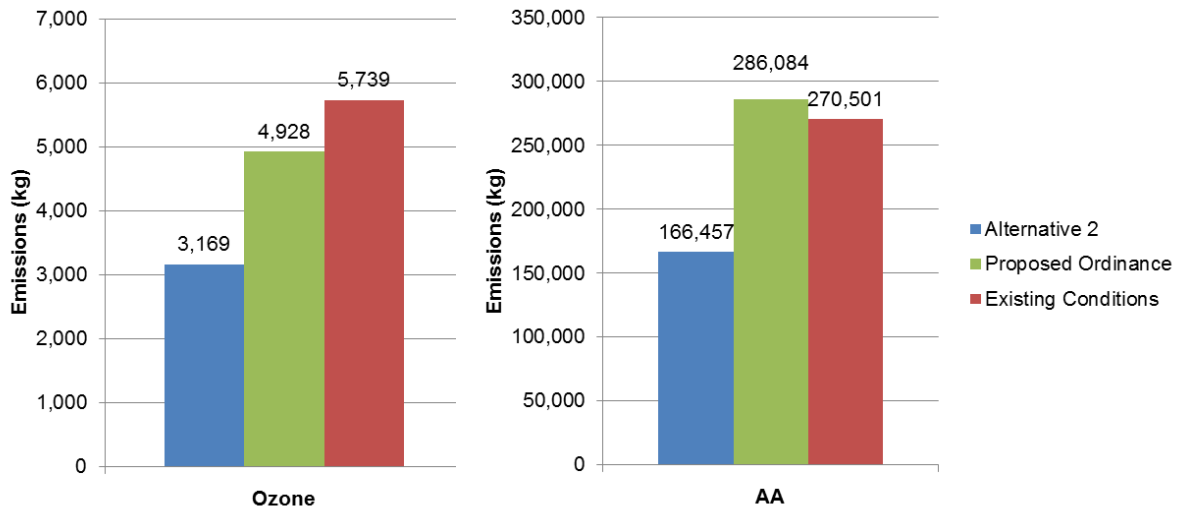
a. Air Quality. Table 6-17 compares emissions that contribute to the development of ground level ozone and atmospheric acidification resulting from implementation of Alternative 2 to those that would occur under the Proposed Ordinance. Emissions that contribute to ground level ozone would decrease by approximately 1,760 kg per year under this alternative (a 36% decrease) and the contribution to atmospheric acidification would decrease by approximately 119,627 kg per year (a 42% decrease) when compared to the Proposed Ordinance. In addition, this alternative would result in a net reduction of both ozone (a 45% reduction) and atmospheric acidification (a 38% reduction) compared to existing conditions.

**Table 6-2
Estimated Emissions that Contribute to Ground Level Ozone and
Atmospheric Acidification (AA) from Alternative 2**

Carryout Bag Type	# of Carryout Bags Used per Year	Ozone Emissions (kg) per 1,000 Carryout Bags	Ozone Emissions per Year (kg)	AA Emissions (kg) per 1,000 Carryout Bags	AA Emissions per Year (kg)
Single-use Plastic	12,476,962	0.023	287	1.084	13,525
Recycled paper	14,972,355	0.03	449	2.06	30,843
Reusable	4,270,960	0.032	137	3.252	13,889
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	2296	1.084	108,200
Alternative 2 Total			3,169	Alternative 2 Total	166,457
Proposed Ordinance Total			4,928	Proposed Ordinance Total	286,084
Difference between Alternative 2 and Proposed Ordinance			(1,760)	Difference between Alternative 2 and Proposed Ordinance	(119,627)
Existing Total (without an Ordinance)			5,739	Existing Total (without an Ordinance)	270,501
Net Change of Alternative 2 (Alternative 2 Total minus Existing Total)			(2,570)	Net Change	(104,044)

Source: Refer to Table 4.1-4 in Section 4.1, Air Quality.
Emissions per year = (Emissions per 1,000 bags/1,000) x number of bags used per year
() denotes reduction

Figure 6-1
Comparison of Ozone and Atmospheric Acidification Emissions - Alternative 2



To estimate mobile emissions resulting from Alternative 2, the number of truck trips per day was calculated using the assumptions outlined in the Initial Study (Appendix A). As shown in Table 6-3, Alternative 2 would result in an estimated 162 truck trips per year, or 0.44 truck trips per day, which is lower than truck trips with the Proposed Ordinance but higher than the existing number of truck trips related to delivering single-use plastic bags.

As indicated in Table 6-4, this alternative would reduce daily emissions compared to the Proposed Ordinance. Mobile emissions would be slightly increased compared to existing conditions but would not exceed SMAQMD or City of Sacramento thresholds.

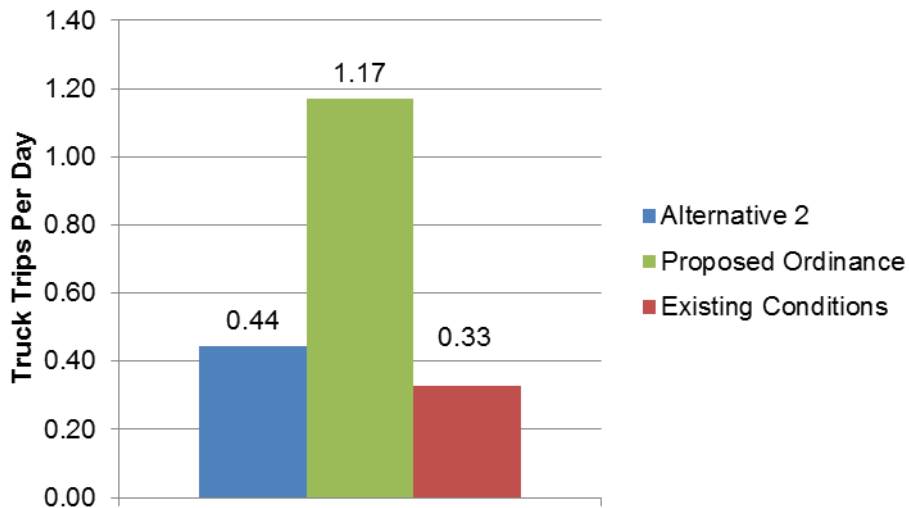
Alternative 2 would reduce air quality impacts compared to the Proposed Ordinance. Impacts resulting from bag manufacture and use (ground level ozone and atmospheric acidification) would be reduced from a *less than significant* impact to a *beneficial* effect. Impacts related to an increase in truck trips would also be reduced compared to the proposed ordinance and would remain *less than significant*.

**Table 6-3
 Estimated Truck Trips per Day Following Implementation of Alternative 2**

Carryout Bag Type	Number of Carryout Bags per Year	Number of Carryout Bags per Truck Load*	Truck Trips Per Year	Truck Trips per Day
Single-use Plastic	12,476,962	2,080,000	6	0.02
Recycled Paper	14,972,355	217,665	69	0.19
Reusable	4,270,960	108,862	39	0.11
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Alternative 2 Total			162	0.44
Proposed Ordinance Total			427	1.17
Difference between Alternative 2 and Proposed Ordinance			(265)	(0.72)
Existing Total for Plastic Bags (without an Ordinance)			120	0.33
Net Change of Alternative 2 (Alternative 2 Total minus Existing Total)			42	0.12

* City of Santa Monica Single-use Carryout Bag Ordinance EIR (SCH #2010041004), January 2011.
 () denotes reduction

**Figure 6-2
 Comparison of Estimated Truck Trips per Day – Alternative 2**



**Table 6-4
Operational Emissions Associated with Alternative 2**

	Emissions (lbs/day)				
	ROG	NO _x	PM ₁₀	PM _{2.5}	CO
Mobile Emissions: Proposed Ordinance	0.01	0.08	0.01	<0.01	0.03
Mobile Emissions: Alternative 2	<0.01	0.01	<0.01	<0.01	<0.01
<i>Thresholds</i>	65	65	N/A	N/A	N/A
Threshold Exceeded?	No	No	N/A	N/A	N/A

Source: URBEMIS 2007 calculations for Vehicle. See Appendix F for calculations

b. Greenhouse Gas Emissions. Table 6-5 estimates GHG emissions that would result from the reduction of carryout bags as a result of implementation of Alternative 2. Compared to existing conditions without an Ordinance, this alternative would increase GHG emissions by approximately 22,932 metric tons per year or approximately 0.0484 CO₂E per person per year, which is below the 4.6 MT CO₂E per person per year threshold. Compared to the Proposed Ordinance, GHG emissions under Alternative 2 would decrease by approximately 0.0009 CO₂E per person per year. Therefore, GHG impacts from Alternative 2 would be reduced when compared to the Proposed Ordinance and would be *less than significant*.

**Table 6-5
Estimated Greenhouse Gas Emissions from Alternative 2**

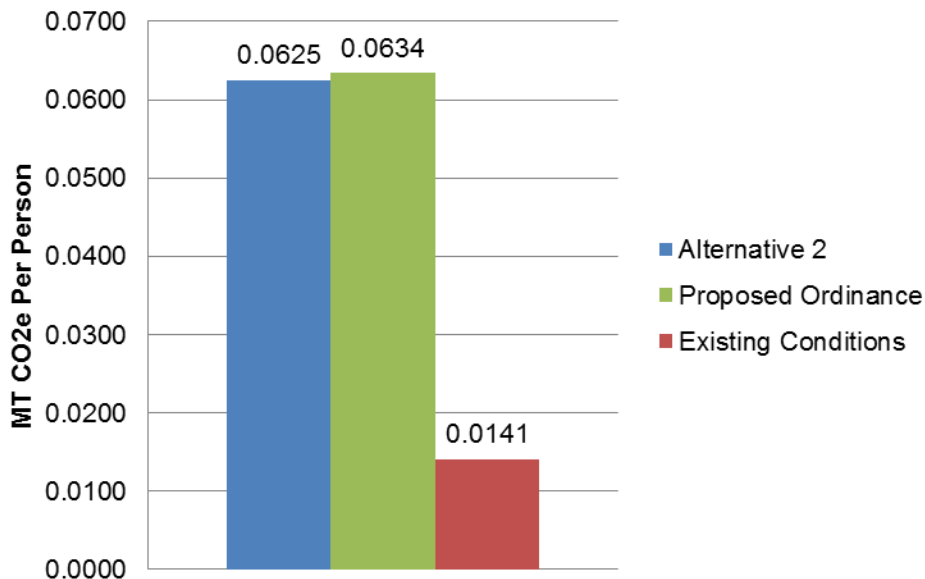
Manufacture, Use and Disposal				
Carryout Bag Type	Proposed # of Carryout Bags Used per Year ¹	GHG Impact Rate (metric tons CO ₂ E)	CO ₂ E per Year (metric tons)	CO ₂ E per Person (metric tons) ⁵
Single-use Plastic	12,476,962	0.04 per 1,500 bags	333	0.0007
Recycled Paper	14,972,355	0.1188 per 1,000 bags	1,779	0.0038
Reusable	4,270,960	5.24 per 1,000 bags	22,380	0.0473
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags	2,662	0.0056
<i>Subtotal</i>			<i>27,153</i>	<i>0.0573</i>

**Table 6-5
 Estimated Greenhouse Gas Emissions from Alternative 2**

Washing					
Bag Type	# of Loads per Year ⁶	Electricity Use Per Load (kW) ⁷	Total Electricity Use Per Year (kW)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)
Reusable	2,697,448	3.825	10,317,741	2,433	0.0051
<i>Subtotal</i>				2,433	0.0051
Total GHG Emissions from Alternative 2				29,586	0.0625
Total GHG Emissions from Proposed Ordinance				30,010	0.0634
Difference between Alternative 2 and Proposed Ordinance				(424)	(0.0009)
Existing GHG Emissions				6,654	0.0141
Net Change (Total for Alternative 2 minus Existing)				+22,932	+0.0484

Source: Refer to Table 4.3-2 in Section 4.3, Greenhouse Gas Emissions. See Appendix F for emissions for each municipality.
 CO₂E per year = proposed # of carryout bags used per year x GHG impact rate
 () denotes reduction

**Figure 6-3
 Comparison of Greenhouse Gas Emissions - Alternative 2**



c. Hydrology and Water Quality. Compared to the Proposed Ordinance, this alternative would result in approximately 59 million fewer total carryout bags (including single-use plastic, recycled paper, and reusable). As a result, overall, this alternative would reduce litter compared to the Proposed Ordinance. As with the Proposed Ordinance, an incremental reduction in the amount of litter that could enter storm drains and local waterways would improve water

quality and reduce the potential for storm drain blockage. Therefore, like the Proposed Ordinance, this alternative would result in *beneficial* effects to water quality. Overall benefits would be somewhat greater under this alternative since fewer recycled paper bags would be used in Sacramento.

This alternative would be expected to result in the use of 60 million fewer recycled paper bags in Sacramento as compared to the Proposed Ordinance. However, it would not completely eliminate the use of recycled paper bags. As with the Proposed Ordinance, recycled paper bag manufacturing facilities would be required to adhere to NPDES Permit requirements and the California Health and Safety Code, thus reducing impacts to water quality. Impacts to water quality from altering carryout bag processing activities would be the same as the Proposed Ordinance and would continue to be *less than significant*.

d. Utilities and Service Systems. Compared to the Proposed Ordinance, this alternative would be expected to reduce the number of recycled paper bags by approximately 60 million and increase the number of reusable bags by approximately 1.2 million. With the increase in reusable bags, water use for this alternative would result in an increase by an estimated 89 AFY compared to the Proposed Ordinance and wastewater generation would increase in comparison to the Proposed Ordinance by an estimated 79,715 gallons per day. As noted in Section 4.5, *Utilities and Service Systems*, there are sufficient water supplies and wastewater facility capacity to meet this demand. Therefore, impacts would be slightly greater than those of the Proposed Ordinance, but would remain *less than significant*.

Using the more conservative solid waste generation rates from Boustead (as shown in Table 4.5-10 in Section 4.5, *Utilities and Service systems*), implementation of this alternative would generate a net increase in solid waste generation of 1.62 tons/day (calculations are contained in Appendix F). In comparison, implementation of the Proposed Ordinance would generate a net increase of 4.03 tons/day when using the Boustead data. Therefore, using conservative assumptions, Alternative 2 would generate 2.40 tons/day less solid waste than the Proposed Ordinance (a 33% decrease). As with the Proposed Ordinance, this increase would not exceed the available capacity at the Kiefer Landfill. Solid waste impacts would be lower when compared to the Proposed Ordinance and would be *less than significant*.

6.3 ALTERNATIVE 3: BAN ON BOTH SINGLE-USE PLASTIC BAGS AND RECYCLED PAPER BAGS

6.3.1 Description

Similar to the Proposed Ordinance, this alternative would prohibit Sacramento retailers from providing single-use plastic bags to customers at the point of sale. However, under this Alternative, the Ordinance would also prohibit stores from providing single-use recycled paper bags at checkout. Only reusable bags would be available for purchase. As a result, no single-use plastic or recycled paper bags would be distributed at stores covered by ordinance. This would result in a decrease of about 73 million bags when compared to the Proposed Ordinance. It is assumed that all of the recycled paper bags would be replaced by reusable bags, which would be used 52 times each before disposal.

The total estimate of bag use under this alternative for Sacramento, compared to the Proposed Ordinance, is summarized in Table 6-6.

**Table 6-6
 Estimated Carryout Bag Use: Proposed Ordinance versus Alternative 3**

Bag Type	Carryout Bags Used Annually	
	Proposed Ordinance ¹	Alternative 3 ²
Single-use Plastic	12,476,962	12,476,962
Recycled paper	74,861,773	0
Reusable	3,119,241	4,558,890
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	99,815,697
Total	190,273,673	116,851,549

¹ Refer to Table 2.2 in Section 2.0, Project Description

² Based on assumptions of 5% single-use plastic bag use, 95% conversion to reusable bags (based on 52 uses per year).

6.3.2 Impact Analysis

a. Air Quality. Because the additional 73 million bags captured by this alternative are anticipated to be replaced by reusable bags (refer to Table 6-1), the total number of reusable bags would increase by approximately 1.4 million bags per year. Because Alternative 3 would essentially trade 73 million recycled paper bags for 1.4 million reusable bags, air pollutant emissions would decrease as compared to what would occur under the Proposed Ordinance. Table 6-7 compares emissions that contribute to the development of ground level ozone and atmospheric acidification that would result from implementation of Alternative 3 to the Proposed Ordinance and existing conditions.

As compared to the Proposed Ordinance, the contribution to ground level ozone would decrease by approximately 2,200 kg per year under this alternative (a 45% decrease) and the contribution to atmospheric acidification would decrease by approximately 149,534 kg per year (a 52% decrease). Unlike the Proposed Ordinance, this alternative would reduce emissions of ozone (a 52% decrease) and atmospheric acidification (a 50% decrease) emissions compared to existing conditions.

To estimate mobile emissions resulting from Alternative 3, the number of truck trips per day was calculated using the assumptions outlined in the Initial Study (Appendix A). As shown in Table 6-8, Alternative 3 would result in an estimated 96 truck trips per year, or 0.26 truck trips per day, which is lower than the Proposed Ordinance rate of 1.17 truck trips per day.

**Table 6-7
 Estimated Emissions that Contribute to Ground Level Ozone and
 Atmospheric Acidification (AA) from Alternative 3**

Carryout Bag Type	# of Carryout Bags Used per Year	Ozone Emissions (kg) per 1,000 Carryout Bags	AA Emissions (kg) per 1,000 Carryout Bags	Ozone Emissions per Year (kg)	AA Emissions per Year (kg)
Single-use Plastic	12,476,962	0.023	1.084	287	13,525
Recycled paper	0	0.03	2.06	0	0
Reusable	4,558,890	0.032	3.252	146	14,826
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	1.084	2,296	108,200
Alternative 3 Total				2,729	136,551
Proposed Ordinance Total				4,928	286,084
Difference between Alternative 3 and Proposed Ordinance				(2,200)	(149,534)
Existing Total (without an Ordinance)				5,739	270,501
Net Change of Alternative 3 (Alternative 3 Total minus Existing Total)				(3,011)	(133,950)

Source: Refer to Table 4.1-4 in Section 4.1, Air Quality.
 Emissions per year = (Emissions per 1,000 bags/1,000) x number of bags used per year
 () denotes reduction

Figure 6-4
Comparison of Ozone and Atmospheric Acidification Emissions - Alternative 3

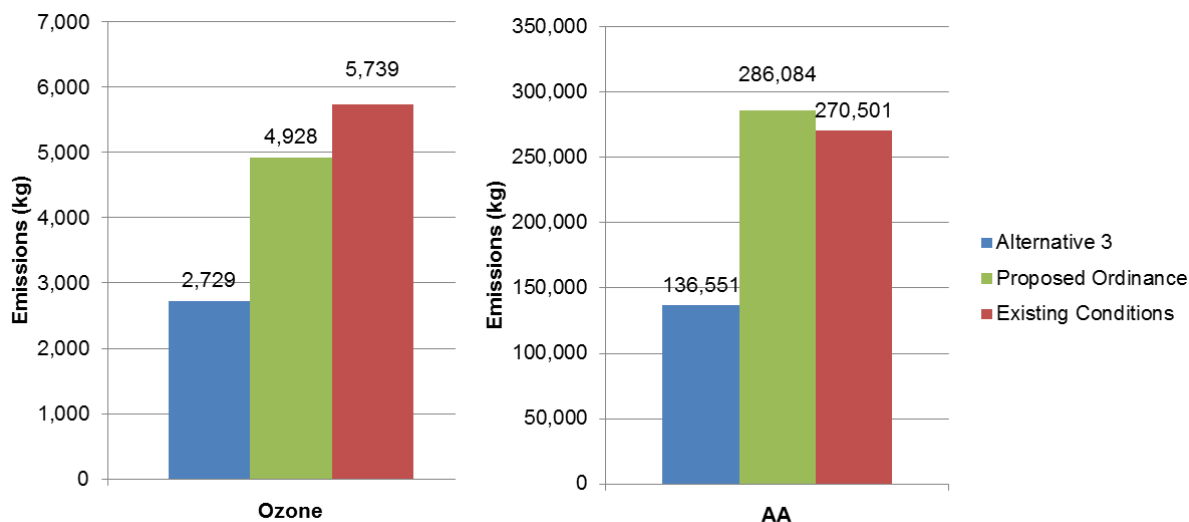
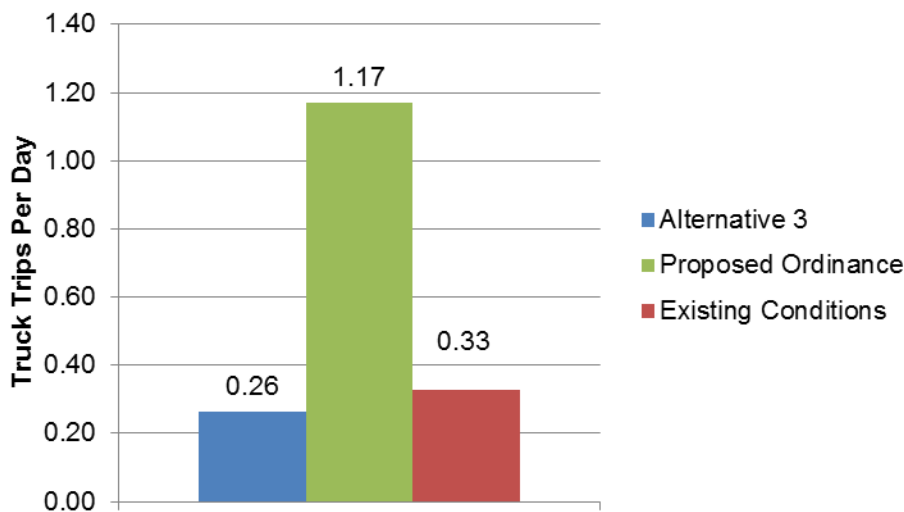


Table 6-8
Estimated Truck Trips per Day Following Implementation of Alternative 3

Carryout Bag Type	Number of Carryout Bags per Year	Number of Carryout Bags per Truck Load*	Truck Trips Per Year	Truck Trips per Day
Single Use Plastic	12,476,962	2,080,000	6	0.02
Recycled Paper	0	217,665	0	0.00
Reusable	4,558,890	108,862	42	0.11
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Alternative 3 Total			96	0.26
Proposed Ordinance Total			427	1.17
Difference between Alternative 3 and Proposed Ordinance			(331)	(0.91)
Existing Total for Single-use Plastic bags (without an Ordinance)			120	0.33
Net Change of Alternative 3 (Alternative 3 Total minus Existing Total)			(24)	(0.07)

* City of Santa Monica Single-use Carryout Bag Ordinance EIR (SCH #2010041004), January 2011; and City of Sunnyvale Carryout Bag Ordinance EIR (SCH#2011062032), December 2011.
() denotes reduction

**Figure 6-5
Comparison of Estimated Truck Trips per Day – Alternative 3**



As shown in Table 6-9, Alternative 3 would decrease emissions compared to the proposed Ordinance and compared to existing conditions.

**Table 6-9
Operational Emissions Associated with Alternative 3**

	Emissions (lbs/day)				
	ROG	NO _x	PM ₁₀	PM _{2.5}	CO
Mobile Emissions: Proposed Ordinance	0.01	0.08	0.01	<0.01	0.03
Mobile Emissions: Alternative 3	(<0.01)	(0.01)	(<0.01)	(<0.01)	(<0.01)
<i>Thresholds</i>	65	65	N/A	N/A	N/A
<i>Threshold Exceeded?</i>	No	No	N/A	N/A	N/A

Source: URBEMIS 2007 calculations for Vehicle. See Appendix F for calculations

Based on the above, air quality impacts resulting from bag manufacture and use (including ground level ozone and atmospheric acidification) and truck trips would be reduced compared to the Proposed Ordinance and would be *beneficial* compared to existing conditions.

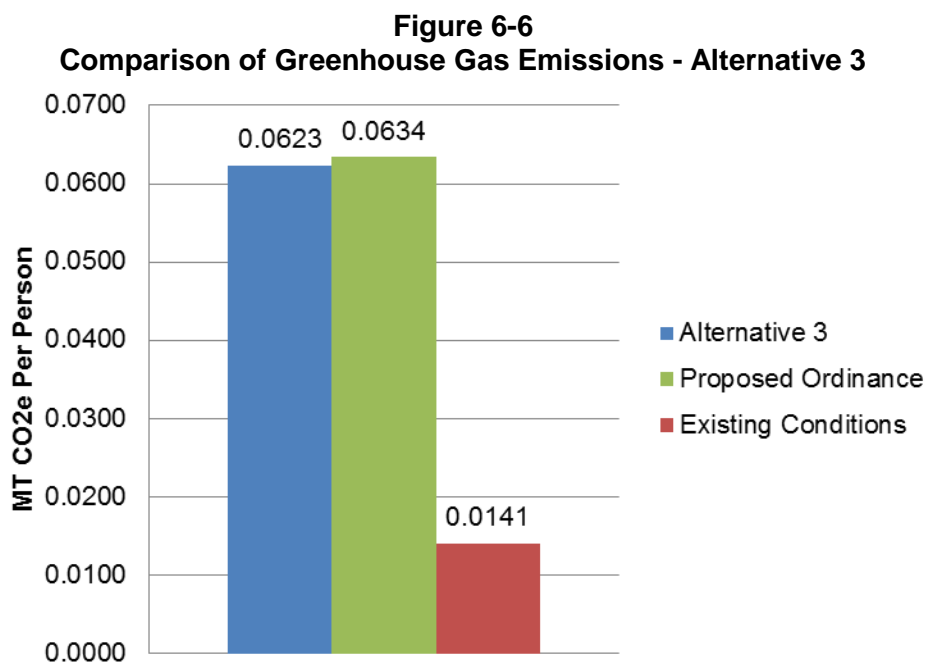
b. Greenhouse Gas Emissions. Compared to the Proposed Ordinance, this alternative would be expected to reduce the number of bags used within the Sacramento annually by approximately 73 million. The number of reusable bags is anticipated to increase by 1.4 million compared to the Proposed Ordinance. As noted in Section 4.3, *Greenhouse Gases*, the manufacture, transport, and disposal of each reusable bag results in 44 times the emissions of a recycled paper bag. Although this alternative would increase the number of reusable bags and reduce the number of recycled paper bags, the effect would be a net reduction of 530 metric tons

of GHG emissions compared to the Proposed Ordinance since each reusable bag would be used 52 times before disposal. Table 6-10 provides an estimate of GHG emissions associated with implementation of Alternative 3. Compared to the Proposed Ordinance, GHG emissions under Alternative 3 would decrease by approximately 0.0011 CO₂E per person per year, which represents a decrease of 2%. Although Alternative 3 would result in greater overall GHG emissions compared to existing conditions, emissions as a result of this alternative would not exceed the 4.6 metric tons CO₂E per person per year threshold. Therefore, impacts would remain *less than significant*.

**Table 6-10
 Estimated Greenhouse Gas Emissions under Alternative 3**

Manufacture, Use and Disposal					
Carryout Bag Type	Proposed # of Carryout Bags Used per Year ¹	GHG Impact Rate (metric tons CO ₂ E)	CO ₂ E per Year (metric tons)	CO ₂ E per Person (metric tons) ⁵	
Single Use Plastic	12,476,962	0.04 per 1,500 bags	333	0.0007	
Recycled Paper	0	0.1188 per 1,000 bags	0	0.0000	
Reusable	4,558,890	5.24 per 1,000 bags	23,889	0.0505	
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags	2,662	0.0056	
<i>Subtotal</i>			<i>26,883</i>	<i>0.0568</i>	
Washing					
Bag Type	# of Loads per Year ⁶	Electricity Use Per Load (kW) ⁷	Total Electricity Use Per Year (kW)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)
Reusable	2,879,299	3.825	11,013,319	2,597	0.0055
<i>Subtotal</i>			<i>2,597</i>	<i>0.0055</i>	
Total GHG Emissions from Alternative 3			29,480	0.0623	
Total GHG Emissions from Proposed Ordinance			30,010	0.0634	
Difference between Alternative 3 and Proposed Ordinance			(530)	(0.0011)	
Existing GHG Emissions			6,654	0.0141	
Net Change (Total for Alternative 3 minus Existing)			22,826	0.0482	

Source: Refer to Table 4.2-2 in Section 4.2, Greenhouse Gas Emissions. See Appendix F for emissions calculations.
 CO₂E per year = proposed # of carryout bags used per year x GHG impact rate



c. Hydrology and Water Quality. Similar to the Proposed Ordinance, this alternative would reduce the number of bags used within the City of Sacramento, thereby incrementally reducing the amount of litter and waste entering storm drains. This alternative would be expected to replace an estimated 75 million recycled paper bags with 1.4 million reusable bags. Compared to the Proposed Ordinance, this alternative would result in approximately 74 million fewer total carryout bags (including single-use plastic, paper, reusable, and replacement bags for secondary plastic bags uses). As a result, overall, this alternative would reduce litter compared to the Proposed Ordinance. As with the Proposed Ordinance, a reduction in the amount of litter that could enter storm drains and local waterways would improve water quality and reduce the potential for storm drain blockage. Therefore, like the Proposed Ordinance, this alternative would result in *beneficial* effects to water quality. Overall benefits would be somewhat greater under this alternative since fewer recycled paper and single-use plastic bags would be used in Sacramento.

This alternative would be expected to result in the use of fewer recycled paper bags in Sacramento as compared to the Proposed Ordinance. However, it would not completely eliminate the use of recycled paper bags. As with the Proposed Ordinance, recycled paper bag manufacturing facilities would be required to adhere to NPDES Permit requirements and the California Health and Safety Code reducing impacts to water quality. Impacts to water quality associated with alteration of bag processing activities would be the same as the Proposed Ordinance and would continue to be *less than significant*.

d. Utilities and Service Systems. Compared to the Proposed Ordinance, this alternative would be expected to reduce the number of bags used annually within the City of Sacramento by approximately 74.9 million bags and increase the number of reusable bags by 1.4 million. Because the number of reusable bags used under this alternative will increase compared to the Proposed Ordinance, water demand and wastewater generation related to washing reusable bags would also increase (112 AFY of water demand and approximately 100,000 gallons per day

of wastewater generation compared to the Proposed Ordinance). As discussed in Section 4.5, *Utilities and Service Systems*, there are sufficient water supplies available to meet water demand, as well as sufficient capacity within the existing wastewater systems to treat this amount of additional wastewater. Therefore, impacts related to water and wastewater would be similar to those of the Proposed Ordinance and would continue to be *less than significant*.

Using the more conservative solid waste generation rates from Boustead (as shown in Table 4.5-10 in Section 4.5, *Utilities and Service systems*), implementation of this alternative would increase solid waste generation by about one ton/day (calculations are contained in Appendix F). In comparison, implementation of the Proposed Ordinance would generate an increase of about 4 tons/day. Therefore, using conservative assumptions, Alternative 3 would generate a net decrease of about 3 tons/day of solid waste as compared to the Proposed Ordinance. However, like the Proposed Ordinance, an increase in solid waste compared to existing conditions would not exceed the available capacity at the Redwood Landfill. Therefore, solid waste impacts would be less than the Proposed Ordinance, and would remain *less than significant*.

6.4 ALTERNATIVE 4: BAN ON ALL SINGLE-USE PLASTIC BAGS AT ALL RETAILERS, MANDATORY CHARGE OF \$0.10 FOR RECYCLED PAPER BAGS

6.4.1 Description

This alternative would prohibit all Sacramento retail establishments, including restaurants, from providing single-use plastic bags to customers at the point of sale. As a result, it is anticipated that this alternative would decrease the number of single-use plastic bags used in Sacramento to zero.

Based on a cost requirement of \$0.10 per bag and assuming that all single-use plastic bags are banned, it is assumed that the total volume of plastic bags currently used in the Sacramento (approximately 250 million single-use plastic bags per year) would be replaced by an estimated 31.75% recycled paper bags and 68.25% reusable bags¹ under Alternative 4 (compared to 30% paper and 65% reusable assumed for the Proposed Ordinance). Table 6-22 summarizes the anticipated changes in carryout bag distribution under this alternative compared to the Proposed Ordinance.

¹ Assumes all restaurants will replace single-use plastic bags with recycled paper bags (1%). The remaining 4% of single-use plastic bag use was assumed to be replaced by 30% recycled paper bags and 65% by reusable bags.

**Table 6-11
 Estimated Bag Use: Proposed Ordinance versus Alternative 4**

Carryout Bag Type	Carryout Bags Used Annually	
	Proposed Ordinance ¹	Alternative 4 ²
Single-use Plastic	12,476,962	0
Recycled paper	74,861,773	79,228,710
Reusable	3,119,241	3,275,203
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	99,815,697
Total	190,273,673	182,319,610

¹ Refer to Table 2.2 in Section 2.0, Project Description.

² Based on an assumption of no plastic bag use in Sacramento to remain, 31.75% recycled paper bags, 68.25% reusable bags (based on 52 uses per year).

6.4.2 Impact Analysis

a. Air Quality. Table 6-12 estimates emissions that contribute to the development of ground level ozone and atmospheric acidification that would result from implementation of Alternative 4, as compared to the Proposed Ordinance. Because this alternative would reduce the total number of bags, the contribution to ground level ozone would decrease by approximately 151 kg per year (a 3% decrease) and the contribution to atmospheric acidification would decrease by approximately 4,022 kg per year (a 1% decrease) when compared to the Proposed Ordinance.

To estimate mobile emissions resulting from Alternative 4, the number of truck trips per day was calculated using the assumptions outlined in the Initial Study (Appendix A). As shown in Table 6-13, Alternative 4 would result in an estimated 442 truck trips per year, or 1.21 truck trips per day, which is slightly higher than the estimated truck trips with the Proposed Ordinance and also approximately 0.88 trips per day higher than existing conditions.

Based on the estimated truck trips for Alternative 4, mobile emissions were calculated using the URBEMIS model. As indicated in Table 6-14, this alternative would have similar emissions compared to the Proposed Ordinance. These emissions would not exceed SMAQMD or City of Sacramento thresholds.

**Table 6-12
Estimated Emissions that Contribute to Ground Level Ozone and
Atmospheric Acidification (AA) from Alternative 4**

Carryout Bag Type	# of Carryout Bags Used per Year	Ozone Emissions (kg) per 1,000 Carryout Bags	Ozone Emissions per Year (kg)	AA Emissions (kg) per 1,000 Carryout Bags	AA Emissions per Year (kg)
Single Use Plastic	0	0.023	1.084	0	0
Recycled Paper	79,228,710	0.03	2.06	2,377	163,211
Reusable	3,275,203	0.032	3.252	105	10,651
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	1.084	2,296	108,200
Alternative 4 Total			4,777	Alternative 4 Total	282,062
Proposed Ordinance Total			4,928	Proposed Ordinance Total	286,084
Difference between Alternative 4 and Proposed Ordinance			(151)	Difference between Alternative 4 and Proposed Ordinance	(4,022)
Existing Total (without an Ordinance)			5,739	Existing Total (without an Ordinance)	270,501
Net Change of Alternative 4 (Alternative 4 Total minus Existing Total)			(962)	Net Change of Alternative 4	11,562

Source: Refer to Table 4.1-4 in Section 4.1, Air Quality.
Emissions per year = (Emissions per 1,000 bags/1,000) x number of bags used per year
() denotes reduction

Figure 6-7
Comparison of Ozone and Atmospheric Acidification Emissions - Alternative 4

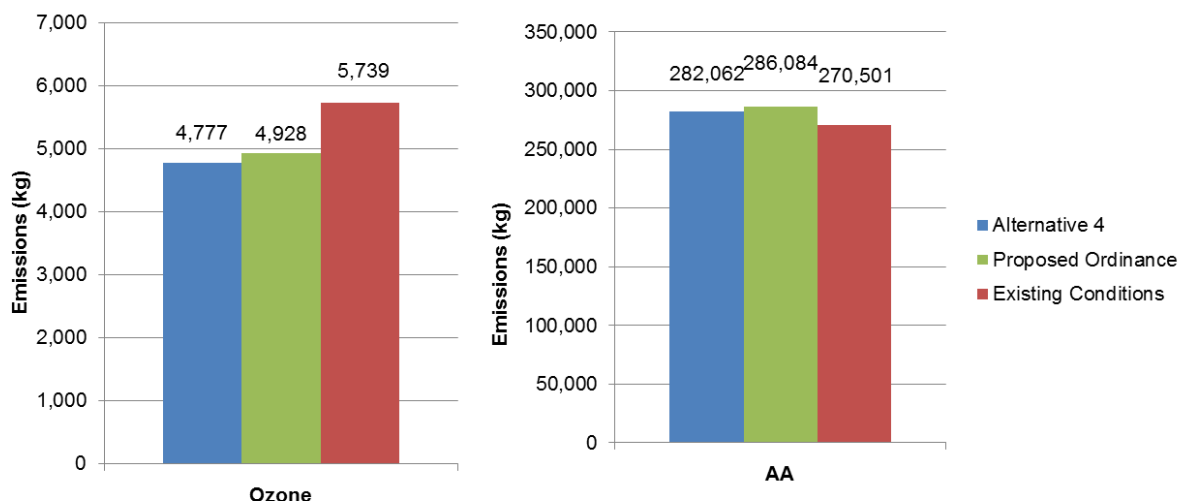
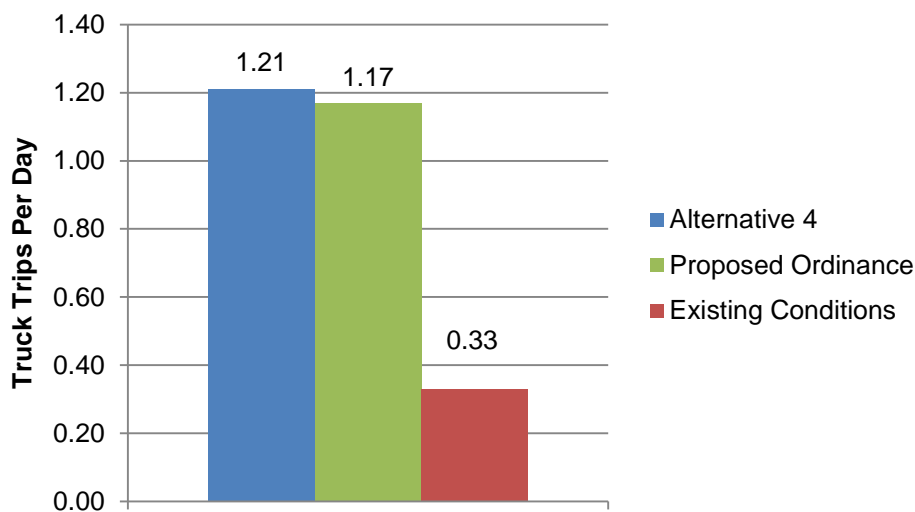


Table 6-13
Estimated Truck Trips per Day
Following Implementation of Alternative 4

Carryout Bag Type	Number of Carryout Bags per Year	Number of Carryout Bags per Truck Load*	Truck Trips Per Year	Truck Trips per Day
Single Use Plastic	0	2,080,000	0	0
Recycled Paper	79,228,710	217,665	364	1.00
Reusable	3,275,203	108,862	30	0.08
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Alternative 4 Total			442	1.21
Proposed Ordinance Total			427	1.17
Difference between Alternative 4 and Proposed Ordinance			15	0.04
Existing Total for Plastic Bags (without an Ordinance)			120	0.33
Net Change of Alternative 4 (Alternative 4 Total minus Existing Total)			322	0.88

* City of Santa Monica Single-use Carryout Bag Ordinance EIR (SCH #2010041004), January 2011. Refer to Appendix F

**Figure 6-8
 Comparison of Estimated Truck Trips per Day – Alternative 4**



**Table 6-14
 Operational Emissions Associated with Alternative 4**

	Emissions (lbs/day)				
	ROG	NO _x	PM ₁₀	PM _{2.5}	CO
Mobile Emissions: Proposed Ordinance	0.01	0.08	0.01	<0.01	0.03
Mobile Emissions: Alternative 4	0.01	0.08	0.01	<0.01	0.03
<i>Thresholds</i>	65	65	N/A	N/A	N/A
Threshold Exceeded?	No	No	N/A	N/A	N/A

Source: URBEMIS 2007 calculations for Vehicle. See Appendix F for calculations

Based on the above, impacts resulting from carryout bag manufacturing and use (ground level ozone and atmospheric acidification) would be reduced compared to the Proposed Ordinance and would remain *less than significant*. Impacts related to an increase in truck trips would be similar to the Proposed Ordinance and would remain *less than significant*.

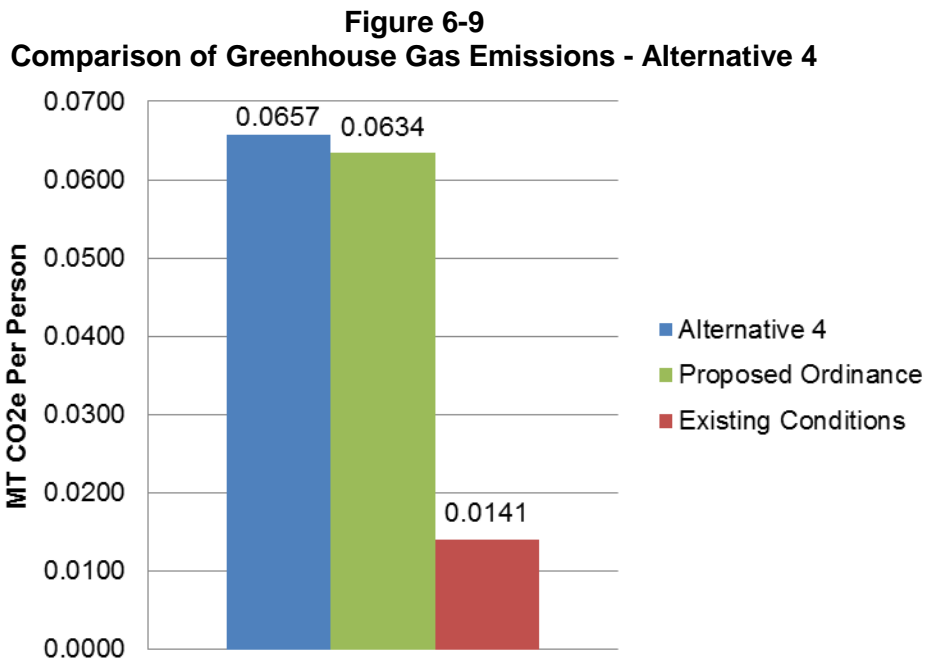
b. Greenhouse Gas Emissions. Compared to the Proposed Ordinance, this alternative would be expected to reduce the number of single-use plastic bags by 12.5 million bags, increase the number of recycled paper bags by approximately 4.4 million bags and increase the number of reusable bags by approximately 156,000 bags. As noted in Section 4.3, *Greenhouse Gases*, the manufacture, transport, and disposal of each recycled paper bag results in 2.97 times the emissions of a single-use plastic bag, while the manufacture, transport, and disposal of a cotton reusable bag results in approximately 131 times the emissions of a single-use plastic bag.

Table 6-14 provides an estimate of GHG emissions that would result from the reduction of carryout bags as a result of implementation of Alternative 4. Compared to the Proposed Ordinance, GHG emissions under Alternative 4 would increase by approximately 1,092 MT CO₂E per year or 0.0023 CO₂E per person per year. Compared to existing conditions without an Ordinance, this alternative would increase GHG emissions by approximately 24,448 metric tons per year or approximately 0.0516 CO₂E per person per year which is below the 4.6 MT CO₂E per person per year threshold. Therefore, GHG impacts from Alternative 4 would be slightly increased when compared to the Proposed Ordinance but would remain be *less than significant*.

**Table 6-15
 Estimated Greenhouse Gas Emissions from Alternative 4**

Manufacture, Use and Disposal					
Carryout Bag Type	Proposed # of Carryout Bags Used per Year ¹	GHG Impact Rate (metric tons CO ₂ E)	CO ₂ E per Year (metric tons)	CO ₂ E per Person (metric tons) ⁵	
Single Use Plastic	0	0.04 per 1,500 bags	0	0.0000	
Recycled Paper	79,228,710	0.1188 per 1,000 bags	9,412	0.0199	
Reusable	3,275,203	5.24 per 1,000 bags	17,162	0.0362	
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags	2,662	0.0056	
<i>Subtotal</i>			29,236	0.0617	
Washing					
Bag Type	# of Loads per Year ⁶	Electricity Use Per Load (kW) ⁷	Total Electricity Use Per Year (kW)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)
Reusable	2,068,549	3.825	7,912,200	1,866	0.0039
<i>Subtotal</i>				1,866	0.0039
Total GHG Emissions from Alternative 4				31,102	0.0657
Total GHG Emissions from Proposed Ordinance				30,010	0.0634
Difference				1,092	0.0023
Existing GHG Emissions				6,654	0.0141
Net Change (Total minus Existing)				24,448	0.0516

Source: Refer to Table 4.2-2 in Section 4.2, Greenhouse Gas Emissions. See Appendix F for emissions calculations.
 CO₂E per year = proposed # of carryout bags used per year x GHG impact rate



c. Hydrology and Water Quality. Compared to the Proposed Ordinance, this alternative would ban all single-use plastic bags, used in the Sacramento, thereby reducing the amount of plastic litter and waste entering storm drains. Compared to the Proposed Ordinance, this alternative would result in approximately 8 million fewer total carryout bags (including single-use plastic, recycled paper, and reusable). As a result, overall, this alternative would reduce litter compared to the Proposed Ordinance. As with the Proposed Ordinance, a reduction in the amount of litter that could enter storm drains and local waterways would improve water quality and reduce the potential for storm drain blockage. Therefore, like the Proposed Ordinance, this alternative would result in *beneficial* effects to water quality. Overall benefits would be somewhat greater under this alternative since fewer recycled paper and single-use plastic bags would be used in Sacramento.

This alternative would be expected to result in the use of fewer recycled paper bags in Sacramento as compared to the Proposed Ordinance. However, it does slightly increase the use of recycled paper bags. As with the Proposed Ordinance, recycled paper bag manufacturing facilities would be required to adhere to NPDES Permit requirements and the California Health and Safety Code reducing impacts to water quality. Impacts to water quality associated with alteration of bag processing activities would be the same as the Proposed Ordinance and would continue to be *less than significant*.

d. Utilities and Service Systems. Compared to the Proposed Ordinance, this alternative would be expected to reduce the number of total bags by approximately 8 million per. No single-use plastic bags would remain under this alternative. With the increase in reusable bags, the total water use and wastewater generation associated with washing reusable bags would increase. As compared the Proposed Ordinance, this alternative would increase water use in Sacramento by an estimated 98.6 AFY and increase wastewater generation in Sacramento by an estimated 88,019 gallons per day. As noted in Section 4.5, *Utilities and Service Systems*, there are

sufficient water supplies and wastewater facility capacity to meet this level of water demand and this level of wastewater generation. Therefore, impacts would be slightly greater than those of the Proposed Ordinance, but would remain *less than significant*.

Using the more conservative solid waste generation rates from Boustead (as shown in Table 4.5-10 in Section 4.5, *Utilities and Service systems*), implementation of this alternative would generate an estimated 1.86 tons/day of solid waste (calculations are contained in Appendix F). In comparison, implementation of the Proposed Ordinance would generate an increase of 4.03 tons/day. Therefore, based on conservative assumptions, Alternative 4 would reduce solid waste generation by 2.16 tons/day compared to the Proposed Ordinance (a 30% decrease). Therefore, solid waste impacts would be reduced when compared to the Proposed Ordinance and would be *less than significant*.

6.5 ALTERNATIVES CONSIDERED BUT REJECTED

As required by Section 15126.6 (c) of the *CEQA Guidelines*, this subsection identifies those alternatives that were considered but rejected by the lead agency because they either did not meet the objectives of the project or could not avoid or substantially lessen one or more of the significant effects. *CEQA Guidelines* § 15126.6 requires that an EIR consider a range of reasonable alternatives to a proposed project that would feasibly obtain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project. The objectives of the Proposed Ordinance are outlined in Section 2.0, *Project Description*. Four alternatives were considered and were rejected as infeasible for not meeting the basic project objectives.

No Charge for Paper Bags

The first alternative that was considered, but rejected is to ban single-use plastic bags, but not charge for recycled paper bags at retailers in Sacramento. This alternative was rejected because it would not deter customers from using recycled paper bags, which may have greater impacts related to air quality, GHG emissions, and water quality than single-use plastic bags on a per bag basis. In addition, this alternative would not achieve the Proposed Ordinance's objective of promoting a shift toward the use of reusable bags by retail customers to as great a degree as would occur with the Proposed Ordinance.

Exception for Biodegradable or Compostable Bags

The second alternative considered, but ultimately rejected, involved incorporating an exception into the Proposed Ordinance for single-use plastic bags made with biodegradable or compostable additives. This alternative was rejected from consideration because the environmental impacts associated with using biodegradable and compostable additives are uncertain at this time. Researchers at California State University Chico Research Foundation tested the degradation of biodegradable bags in composting conditions, and found that they did not degrade (CIWMB 2007; Green Cities California MEA, 2010). Furthermore, these bags reduce the quality of recycled plastics when introduced into the recycling stream and so must be kept separate to avoid contaminating the recycling stream (CIWMB 2007; Green Cities California MEA, 2010). Therefore, it is unclear what environmental impacts may be associated with switching to single-use plastic bags made with biodegradable additives or water soluble bags.

In addition, this alternative would not achieve the objectives of promoting a shift toward the use of reusable bags by retail customers, and avoiding litter and the associated adverse impacts to stormwater systems, aesthetics and the marine environment associated with single-use plastic bags.

Mandated Retailer Incentives

The third alternative considered, but ultimately rejected, would require retailers to offer incentives for customers to use reusable bags (such as paying customers) rather than banning single-use plastic bags. While this alternative may deter some customers from using single-use plastic and paper bags, it may not promote the shift to reusable bags by retail customers as effectively and would place a financial burden on Sacramento retailers.

Plastic Bag Deposit Program

The fourth alternative considered, but rejected would involve establishing a deposit program for single-use plastic bags instead of a ban. This deposit program would be similar to California's "Bottle Bill" that places a \$0.05 to \$0.10 charge on beverage containers that is returned to customers when they recycle their containers. This alternative was rejected because it would not achieve the Ordinance's objectives, including deterring the use of paper bags and promoting a shift toward the use of reusable bags. Though AB 2449 currently requires applicable retail stores to provide a plastic bag collection bin, only about 11% of single-use plastic bags are actually recycled. Further, although some recycling facilities handle single-use plastic bags, most recycling facilities reject single-use plastic bags because they get caught in the machinery and cause malfunctioning or are contaminated after use (Green Cities California MEA, 2010; Boustead, 2007).

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

This subsection identifies the environmentally superior alternative. Alternative 3, the Ban on Both Single-Use Plastic and Recycled Paper Bags, would be considered the environmentally superior among the alternatives as it would have greater overall benefits compared to the Proposed Ordinance. Impacts to air quality would be *beneficial* under Alternative 3. This alternative would also reduce solid waste in area landfills compared to the Proposed Ordinance, but would increase water use and wastewater generation compared to the Proposed Ordinance for washing reusable bags. However, water and wastewater impacts would remain *less than significant*. This alternative would also meet the project objectives, including:

- *Reducing the environmental impacts related to single-use plastic bags, including impacts to water and other natural environments*
- *Reducing the amount of single-use plastic bags in landfills*
- *Reducing the cost of shutting down recycling machinery due to recycling of plastic bags*
- *Reducing litter and the associated adverse impacts to stormwater systems, aesthetics and both aquatic and terrestrial environments related to single-use plastic bags.*

Alternative 2, the Mandatory Charge of \$0.25 for Recycled Paper Bags, would also be environmentally superior compared to the Proposed Ordinance as it would create a *beneficial* effect with respect to air pollution. However, Alternative 3 would have slightly greater benefits with respect to air pollution, greenhouse gas emissions, and solid waste generation.

Table 6-16 compares the impacts for each of the alternatives with the impacts associated with the Proposed Ordinance.

**Table 6-16
Impact Comparison of Alternatives with the Proposed Ordinance**

Issue	Alt 1: No Project	Alt 2: Ban on Single-Use Plastic Bags, \$0.25 fee on Recycled Paper Bags	Alt 3: Ban on Both Single-Use Plastic Bags and Recycled Paper Bags	Alt 4: Ban on Single-Use Plastic Bags, \$0.10 fee on Paper Bags at all Retail Establishments
Air Quality	+	+	+	= / +
Greenhouse Gas Emissions	= / +	= / +	= / +	= / -
Hydrology/ Water Quality	-	= / +	= / +	= / +
Utilities – Waste	+	= / +	= / +	= / +
Utilities - Water	+	= / -	= / -	= / -
Utilities - Wastewater	+	= / -	= / -	= / -

+ Superior to the proposed project (reduced level of impact)
- Inferior to the proposed project (increased level of impact)
= / + slightly superior to the proposed project in one or more aspects, but not significantly superior
= / - slightly inferior to the proposed project in one or more aspects, but not significantly inferior
= Similar level of impact to the proposed project

7.0 REFERENCES AND REPORT PREPARERS

7.1 REFERENCES

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7.2 REPORT PREPARERS

This EIR was prepared by Rincon Consultants, Inc., under contract to the City of Sacramento. Consultant staff involved in the preparation of the EIR are listed below.

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Appendix A

*Notice of Preparation, Initial Study, and
NOP Comment Letters*

DATE: December 11, 2013

TO: Interested Persons

FROM: Susanne Cook, Associate Planner
Community Development Department

RE: **NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND
SCOPING MEETING FOR THE REUSABLE BAG ORDINANCE**

COMMENT PERIOD

December 16, 2013 to January 17, 2014

SCOPING MEETING

Thursday, January 9, 2014, 300 Richards Blvd., 2nd Floor (see below)

INTRODUCTION

The City of Sacramento (City) is the Lead Agency for preparation of an Environmental Impact Report (EIR) for the proposed Reusable Bag Ordinance project (Project). The EIR to be prepared by the City will evaluate potential significant environmental effects of the Project. In accordance with Section 15082 of the State California Environmental Quality Act (CEQA) Guidelines, upon deciding to prepare an EIR, the City as lead agency must issue a Notice of Preparation (NOP) to inform the public, trustee, and responsible agencies of that decision. The purpose of the NOP is to provide information describing the project and its potential environmental effects to those who may wish to comment regarding the scope and content of the information to be included in the EIR. Agencies should comment on such information as it relates to their statutory responsibilities in connection with the project.

The EIR will provide an evaluation of potential environmental impacts associated with implementation of the Reusable Bag Ordinance. The Project description, location, and environmental issue areas that may be affected by development of the proposed project are set forth below. The EIR will evaluate the potentially significant environmental impacts of the proposed project, on both a direct and cumulative basis, identify mitigation measures, if any, that may be feasible to lessen or avoid such impacts, and identify alternatives to the proposed project.

SUBMITTING COMMENTS

Comments and suggestions as to the appropriate scope of analysis in the EIR are invited from all interested parties. Written comments or questions concerning the EIR for the proposed project should be directed to the environmental project manager at the following address by 5:00 p.m. on January 17, 2014. Please include the contact person's full name and address in order for staff to respond appropriately:

Susanne Cook, Associate Planner,
City of Sacramento Community Development Department,
300 Richards Blvd., Third Floor, Sacramento, CA 95811
Telephone: (916) 808-5375
E-mail: scook@cityofsacramento.org

SCOPING MEETING

A public scoping meeting will be held on Thursday, January 9, 2014, from 3:30 p.m. to 5:00 p.m. at the following location:

City of Sacramento
300 Richards Blvd., 2nd Floor, Room: 221
Sacramento, CA 95811

Responsible agencies and members of the public are invited to attend and provide input on the scope of the EIR. The scoping meeting will be conducted in an open house format. Written comments regarding relevant issues may be submitted at the meeting.

PROJECT LOCATION/SETTING

The Reusable Bag Ordinance would be effective within the City of Sacramento (See Figure 1 below) and would apply to the following retail stores (as defined by the Ordinance):

1. A supermarket, defined as a full-line, self-service retail store with gross annual sales of \$2,000,000, or more, and which sells a line of dry grocery, canned goods, or nonfood items and perishable items;
2. A store of at least 10,000 square feet of retail space that generates sales or use tax pursuant to the Bradley-Burns Uniform Local Sales and Use Tax Law (Part 1.5 (commencing with Section 7200) of Division 2 of the Revenue and Taxation Code) and that has a pharmacy licensed pursuant to Chapter 9 (commencing with Section 4000) of Division 2 of the Business and Professions Code; or
3. A convenience food store, foodmart, or other entity that is engaged in the retail sale of a limited line of goods, including milk, bread, soda, and snack foods, and that holds a Type 20 or 21 license issued by the Department of Alcoholic Beverage Control.

PROJECT DESCRIPTION

The proposed Reusable Bag Ordinance would prohibit certain stores in the City from distributing single-use plastic bags, and would require a minimum \$.10 fee on recycled paper bags and reusable bags distributed by the store. The intent of the proposed ordinance is to mitigate environmental impacts associated with single-use plastic bags and encourage consumers to use reusable shopping bags.

Additional information and materials relating to the proposed project are available on the City's website at:

<http://portal.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>

ENVIRONMENTAL EFFECTS AND SCOPE OF THE EIR

The EIR will analyze potentially significant impacts that result from implementation of the Reusable Bag Ordinance. Pursuant to section 15063 (a), of the CEQA Guidelines, an Initial Study has not been prepared for the proposed project. The environmental factors that the City has determined would potentially be affected by the project include:

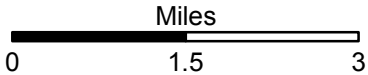
- Air Quality
- Greenhouse Gas Emissions
- Hydrology/Water Quality
- Utilities and Service Systems

The EIR will identify and evaluate alternatives to the proposed project.

Figure 1: Map of City of Sacramento



City of Sacramento



CITY OF SACRAMENTO REUSABLE BAG ORDINANCE

Initial Study

Prepared for:

City of Sacramento

Prepared with the assistance of:



Rincon Consultants, Inc.
2220 J Street, Suite 7
Sacramento, CA 95816

March 2014

This report is printed on 50% recycled paper with 30% post-consumer content.

SACRAMENTO REUSABLE BAG ORDINANCE

INITIAL STUDY FOR ANTICIPATED SUBSEQUENT PROJECTS UNDER THE 2030 GENERAL PLAN MASTER EIR

This Initial Study has been prepared by the City of Sacramento, Community Development Department, 300 Richards Boulevard, Third Floor, Sacramento, CA 95811, pursuant to the California Environmental Quality Act (Public Resources Code Sections 21000 *et seq.*), CEQA Guidelines (Title 14, Section 15000 *et seq.* of the California Code of Regulations) and the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento.

ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following sections:

SECTION I - BACKGROUND: Provides summary background information about the project name, location, sponsor, and the date this Initial Study was completed.

SECTION II - PROJECT DESCRIPTION: Includes a detailed description of the proposed project.

SECTION III - ENVIRONMENTAL CHECKLIST AND DISCUSSION: Reviews proposed project and states whether the project would have additional significant environmental effects (project-specific effects) that were not evaluated in the Master EIR for the 2030 General Plan.

SECTION IV - ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: Identifies which environmental factors were determined to have additional significant environmental effects.

SECTION V - DETERMINATION: States whether environmental effects associated with development of the proposed project are significant, and what, if any, added environmental documentation may be required.

REFERENCES CITED: Identifies source materials that have been consulted in the preparation of the Initial Study.

SECTION I - BACKGROUND

Project Name and File Number: Reusable Bag Ordinance

Project Location: City of Sacramento

Project Applicant: City of Sacramento
Department of General Services
2812 Meadowview Road
Sacramento, CA 95832

Project Planner: Steve Harriman, (916) 808-4949

Environmental Planner: Susanne Cook, (916) 808-5375

Date Initial Study Completed: March 10, 2014

This Initial Study was prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 1500 *et seq.*). The Lead Agency is the City of Sacramento.

The City of Sacramento, Community Development Department, has reviewed the proposed project and, on the basis of the whole record before it, has determined that the proposed project is an anticipated subsequent project identified and described in the 2030 General Plan Master EIR and is consistent with the land use designation and the permissible densities and intensities of use for the project site as set forth in the 2030 General Plan. See CEQA Guidelines Section 15176 (b) and (d).

The City has prepared the attached Initial Study to (a) review the discussions of cumulative impacts, growth inducing impacts, and irreversible significant effects in the 2030 General Plan Master EIR to determine their adequacy for the project (see CEQA Guidelines Section 15178(b),(c)) and (b) identify any potential new or additional project-specific significant environmental effects that were not analyzed in the Master EIR and any mitigation measures or alternatives that may avoid or mitigate the identified effects to a level of insignificance, if any.

As part of the Master EIR process, the City is required to incorporate all feasible mitigation measures or feasible alternatives appropriate to the project as set forth in the Master EIR (CEQA Guidelines Section 15177(d)). The Master EIR mitigation measures that are identified as appropriate are set forth in the applicable technical sections below.

This analysis incorporates by reference the general discussion portions of the 2030 General Plan Master EIR. (CEQA Guidelines Section 15150(a)). The Master EIR is available for public review at the City of Sacramento, Community Development Department, 300 Richards Boulevard, Third Floor, Sacramento, CA 95811, and on the City's web site at: www.cityofsacramento.org/dsd/planning/environmental-review/eirs/.

SECTION II - PROJECT DESCRIPTION

PROJECT DESCRIPTION

The proposed Reusable Bag Ordinance (the “Proposed Ordinance”) would apply to certain retail establishments that are located within or doing business within the jurisdictional limits of the City of Sacramento.

Any of the following types of retail establishments located and operating within the City of Sacramento would be subject to the Proposed Ordinance if adopted.

1. A supermarket, defined as 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;
2. A store of at least 10,000 square feet of retail space that generates sales or use tax pursuant to the Bradley-Burns Uniform Local Sales and Use Tax Law (Part 1.5 (commencing with Section 7200) of Division 2 of the Revenue and Taxation Code) and that has a pharmacy licensed pursuant to Chapter 9 (commencing with Section 4000) of Division 2 of the Business and Professions Code; or
3. A convenience food store, foodmart, or other entity engaged in the retail sale of a limited line of goods, including milk, bread, soda, and snack foods, and that holds a Type 20 or 21 liquor license issued by the Department of Alcoholic Beverage Control.

The Proposed Ordinance would regulate the use of single-use plastic bags within the jurisdictional limits of the City of Sacramento. The intent of the ordinance is to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags. It is anticipated that by prohibiting single-use plastic bags and requiring a mandatory charge for each recycled paper bag distributed by retailers, the Proposed Ordinance would provide a disincentive to customers to request recycled paper bags when shopping at regulated stores and promote a shift to the use of reusable bags by retail customers, while reducing the number of single-use plastic and recycled paper bags within Sacramento.

The ordinance would (1) prohibit the free distribution of single-use plastic bags and (2) require retail establishments to charge customers (at least \$0.10) for recycled paper bags and reusable carryout bags at the point of sale. Single-use plastic bags are defined in the Proposed Ordinance as any bag made predominately of plastic derived from either petroleum or biologically-based sources, such as corn or other plant sources, which is provided to a customer at the point of sale. Regulated bags would not include reusable bags or bags without handles provided to customers for uses defined in the ordinance. The Proposed Ordinance would not apply to restaurants and other food service providers, allowing them to provide single-use plastic bags to customers for prepared take-out food intended for consumption off of the food provider’s premises.

As noted above, the Proposed Ordinance would require regulated retailers to impose a mandatory charge (of at least \$0.10) for each recycled paper bag and/or reusable bag provided.

Retail establishments would be required to indicate on the customer receipt the number of recycled paper bags and/or reusable bags provided and the total amount charged for the bags..

As shown in Table 1, based on the current statewide data which estimates that almost 20 billion single-use plastic bags (or approximately 527 bags per person) are consumed annually in California (Green Cities California MEA, 2010; and CIWMB, 2007), retail customers within Sacramento are estimated to use about 250 million single-use plastic bags per year. The customer base of retailers located within Sacramento may include residents of communities located within or outside of Sacramento (i.e., visitors who live outside Sacramento but travel to shop within Sacramento). However, for this analysis, in order to estimate the current number of plastic bags used per year in Sacramento, the EIR applies to the rate discussed above (527 bags used per person/per year) to the number of residents in Sacramento. This estimate is considered reasonable and conservative for the purposes of this analysis.

Table 1
Estimated Single-Use Plastic Bag Use in Sacramento

	Population*	Number of single-use plastic bags Used per Person**	Total Bags Used Annually
Sacramento	473,509	527	249,539,243

** California Department of Finance, "City/County Population and Housing Estimates" (May 2013).*

***Based on annual statewide estimates of plastic bag use from the CIWMB (2007) - 531 bags per person = 20 billion bags used statewide per year (CIWMB, 2007) / 37,966,000 people statewide (California's current population according to the State Department of Finance, 2013).*

The analysis in this Initial Study assumes that as a result of the Proposed Ordinance which would require a \$0.10 fee on recycled paper bags and reusable bags, approximately 95% of the volume of single-use plastic bags currently used in Sacramento (249,539,243 single-use plastic bags per year) would be replaced by recycled paper bags (approximately 30%) and reusable bags (approximately 65%), as shown in Table 2. It is assumed that 5% of the existing single-use plastic bags used in Sacramento would remain in use, as the Proposed Ordinance does not apply to some retailers who distribute single-use plastic bags (e.g., restaurants and other non-grocery related retailers such as clothing or hardware stores).

It is also assumed that approximately 74,861,773 recycled paper bags would replace approximately 30% of the single-use plastic bags currently used in Sacramento. This 1:1 replacement ratio is considered conservative, because the volume of a recycled paper bags (20.48 liters) is generally equal to approximately 150% of the volume of a single-use plastic bag (14 liters), such that fewer recycled paper bags would ultimately be needed to carry the same number of items.

In order to estimate the number of reusable bags that would replace 162,200,508 plastic bags (65% of the existing number of plastic bags used annually in Sacramento), it is assumed that a reusable bag would be used by a customer once per week for one year (52 times). According to the March 2010 *Master Environmental Assessment [MEA] on Single-use and Reusable Bags* (Green Cities California, March 2010), a reusable bag may be used 100 times or more; therefore the estimate of 52 uses per year for reusable bags is conservative. Based on the estimate of 52 uses, 162,200,508 single-use plastic bags that would be removed as a result of the Proposed Ordinance would be replaced by 3,119,241 reusable bags. This amounts to an estimated 6.6 reusable bags per person per year based on a Sacramento population of

473,409. This analysis assumes that as a result of the Proposed Ordinance the approximately 250 million single-use plastic bags currently used in Sacramento annually would be reduced to approximately 190.3 million total bags as a result of the Proposed Ordinance.

Furthermore, it is estimated that 40% of existing single-use plastic bags are reused once for uses such as, but not limited to, picking up after pets or as garbage bags for small garbage bins like those found in bathrooms (“Life cycle assessment of supermarket carrier bags,” United Kingdom Environment Agency, 2011). Thus, this analysis assumes a 40% replacement rate for single-use plastic bags. Though some replacement bags may be smaller than single-use plastic carryout bags (i.e.: pet waste bags) and some replacement bags may be larger than single-use plastic carryout bags (i.e.: garbage bin liners), this analysis assumes a 1:1 replacement ratio. Therefore, the purchase of new bags to replace secondary plastic bag uses is estimated to result in an additional 99,815,697 single-use plastic bags being purchased. In total, it is assumed that 112,292,659^a plastic bags would continue to be used annually within Sacramento after implementation of the Proposed Ordinance, as shown in Table 2.

Table 2
Existing Plastic Bag Replacement Assumptions in Sacramento

Type of Bag	Replacement Assumption	Bags used Post-Ordinance	Explanation
Single-use Plastic	5% (remaining) ¹	12,476,962	Because the Proposed Ordinance does not apply to all retailers (e.g. restaurants and other non-grocery retailers), some single-use plastic bags would remain in circulation.
Recycled paper	30% ²	74,861,773	Although the volume of a recycled paper bag is generally 150% of the volume of a single-use plastic bag, such that fewer recycled paper bags would be needed to carry the same number of items, it is conservatively assumed that paper would replace plastic at a 1:1 ratio.
Reusable	65% ²	3,119,241	Although a reusable bag is designed to be used up to hundreds of times (Green Cities California MEA, 2010; Santa Monica Single-Use Bag Ordinance Final EIR, 2011), it is conservatively assumed that a reusable bag would be used by a customer once per week for one year, or 52 times.
Replacement Bags for Secondary Plastic Bag Uses	40% of initial plastic bag use ³	99,815,697	Because some single-use plastic bags do get reused another time for garbage bags or other uses, individuals may purchase new plastic bags for this purpose ³ .
Total		190,273,673	

¹ Rate utilized in the City of Huntington Beach Draft EIR, Draft EIR, SCH # 2011111053, February 2012

² Rates utilized in the City of Santa Monica Nexus Study, March 2010.

³ Rate determined by United Kingdom Environment Agency Study “Lifecycle assessment of supermarket carrier bags: a review of the bags available in 2006”.

^a Total includes approximately 12.4 million single-use plastic bags that would remain at retailers not subject to the proposed ordinance plus the approximately 99.8 million replacement bags for secondary plastic bag uses.

SECTION III – ENVIRONMENTAL CHECKLIST AND DISCUSSION

LAND USE, POPULATION AND HOUSING, AGRICULTURAL RESOURCES AND ENERGY

Introduction

The California Environmental Quality Act (CEQA) requires the Lead Agency to examine the effects of a project on the physical conditions that exist within the area that would be affected by the project. CEQA also requires a discussion of any inconsistency between the proposed project and applicable general plans and regional plans.

An inconsistency between the proposed project and an adopted plan for land use development in a community would not constitute a physical change in the environment. When a project diverges from an adopted plan, however, it may affect planning in the community regarding infrastructure and services, and the new demands generated by the project may result in later physical changes in response to the project.

In the same manner, the fact that a project brings new people or demand for housing to a community does not, by itself, change the physical conditions. An increase in population may, however, generate changes in retail demand or demand for governmental services, and the demand for housing may generate new activity in residential development. Physical environmental impacts that could result from implementing the proposed project are discussed in the appropriate technical sections.

This section of the initial study identifies the applicable land use designations, plans and policies, and permissible densities and intensities of use, and discusses any inconsistencies between these plans and the proposed project. This section also discusses agricultural resources and the effect of the project on these resources.

Discussion

Land Use

The Proposed Ordinance does not involve any new construction or change of land use.

Agricultural Resources

The Master EIR discussed the potential impact of development under the 2030 General Plan on agricultural resources. See Master EIR, Chapter 6.2. In addition to evaluating the effect of the general plan on sites within the City, the Master EIR noted that to the extent the 2030 General Plan accommodates future growth within the City limits, the conversion of farmland outside the City limits is minimized. (Master EIR, page 6.2-13) The Master EIR concluded that the impact of the 2030 General Plan on agricultural resources within the City was less than significant.

The Proposed Ordinance does not involve any construction or change of land use. Therefore, it would not affect Important Farmland (i.e., Prime Farmland, Unique Farmland or Farmland of Statewide Importance), Williamson Act contracts, or existing agricultural or timber-harvest uses. The Proposed Ordinance would result in no impacts on agricultural resources.

Energy

The 2030 general Plan includes policies (see Policies 6.1.10 through 6.1.13) to encourage the spread of energy-efficient technology by offering rebates and other incentives to commercial and residential developers, and recruiting businesses that research and promote energy conservation and efficiency.

Policies 6.1.6 through 6.1.8 focus on promoting the use of renewable resources, which would reduce the cumulative impacts associated with use of non-renewable energy sources. In addition, Policies 6.1.5 and 6.1.12 call for the City to work closely with utility providers and industries to promote new energy conservation technologies.

The Master EIR evaluated the potential impacts on energy and concluded that the effects would be less than significant. (See Impacts 6.11-9 and 6.11-10)

The Proposed Ordinance does not involve any new construction and would not result in any impacts not identified and evaluated in the Master EIR.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
1. <u>AESTHETICS, LIGHT AND GLARE</u>			
Would the proposal:			
A) Create a source of glare that would cause a public hazard or annoyance?			X
B) Create a new source of light that would be cast onto oncoming traffic or residential uses?			X

ENVIRONMENTAL SETTING

Existing sources of light at retail establishments within Sacramento include street lights, light structures in surface parking areas, and security lighting on buildings. Existing sources of glare include vehicles, some reflective building materials, and windows.

STANDARDS OF SIGNIFICANCE

For purposes of this Initial Study, aesthetics impacts may be considered significant if the proposed project would result in one or more of the following:

Glare. Glare is considered to be significant if it would be cast in such a way as to cause public hazard or annoyance for a sustained period of time.

Light. Light is considered significant if it would be cast onto oncoming traffic or residential uses.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR described the existing visual conditions in the general plan policy area, and the potential changes to those conditions that could result from development consistent with the 2030 general Plan. See Master EIR, Chapter 6.13, Urban design and Visual Resources.

The Master EIR identified potential impacts for glare (Impact 6.13-1). Mitigation Measure 6.13-1, set forth below, was identified to reduce the effect to a less-than-significant level.

Light cast onto oncoming traffic or residential uses was identified as a potential impact (Impact 6.13-2). The Master EIR identified Policy LU 6.1.14 (Compatibility with Adjoining Uses) and its requirement that lighting must be shielded and directed downward as reducing the potential effect to a less-than-significant level.

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO PROJECT

None

ANSWERS TO CHECKLIST QUESTIONS

A, B) The Proposed Ordinance would not add any physical development that would create additional sources of light and glare. Therefore, there would be ***no additional environmental effect*** related to the creation of a new source of light or glare and further analysis in an EIR is not warranted.

MITIGATION MEASURES

None

FINDINGS

The project would have no additional project-specific environmental effects relating to Aesthetics.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
2. AIR QUALITY			
<i>Would the proposal:</i>			
A) Result in construction emissions of NO _x above 85 pounds per day?	X		
B) Result in operational emissions of NO _x or ROG above 65 pounds per day?	X		
C) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X		
C) Result in PM ₁₀ concentrations equal to or greater than five percent of the State ambient air quality standard (i.e., 50 micrograms/cubic meter for 24 hours) in areas where there is evidence of existing or projected violations of this standard?	X		
E) Result in CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm)?	X		
F) Result in exposure of sensitive receptors to substantial pollutant concentrations?			X
G) Result in TAC exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources?			X
H) Impede the City or state efforts to meet AB32 standards for the reduction of greenhouse gas emissions?	X		

For purposes of this Initial Study, air quality impacts may be considered significant if construction and/or implementation of the Proposed Project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

- construction emissions of NO_x above 85 pounds per day;
- operational emissions of NO_x or ROG above 65 pounds per day;
- violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- PM₁₀ concentrations equal to or greater than five percent of the State ambient air quality standard (i.e., 50 micrograms/cubic meter for 24 hours) in areas where there is evidence of existing or projected violations of this standard. However, if project emissions of NO_x

and ROG are below the emission thresholds given above, then the project would not result in violations of the PM₁₀ ambient air quality standards;

- CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm); or
- exposure of sensitive receptors to substantial pollutant concentrations.

Ambient air quality standards have not been established for toxic air contaminants (TAC). TAC exposure is deemed to be significant if:

- TAC exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR addressed the potential effects of the 2030 General Plan on ambient air quality and the potential for exposure of people, especially sensitive receptors such as children or the elderly, to unhealthy pollutant concentrations. See Master EIR, Chapter 6.1.

Policies in the 2030 General Plan in Environmental Resources were identified as mitigating potential effects of development that could occur under the 2030 General Plan. For example, Policy ER 6.1.1 calls for the City to work with the California Air Resources Board and the Sacramento Metropolitan Air Quality Management District (SMAQMD) to meet state and federal air quality standards; Policy ER 6.1.12 requires the City to review proposed development projects to ensure that the projects incorporate feasible measures that reduce construction and operational emissions; Policy ER 6.1.11 calls for coordination of City efforts with SMAQMD; and Policy ER 6.1.15 requires the City to give preference to contractors using reduced-emission equipment.

The Master EIR identified exposure to sources of toxic air contaminants (TAC) as a potential effect. Policies in the 2030 general Plan would reduce the effect to a less-than-significant level. The policies include ER 6.1.5, requiring consideration of current guidance provided by the Air Resources Board and SMAQMD; requiring development adjacent to stationary or mobile TAC sources to be designed with consideration of such exposure in design, landscaping and filters; as well as Policies ER 6.11.1 and ER 6.11.15, referred to above.

The Master EIR found that greenhouse gas emissions that would be generated by development consistent with the 2030 General Plan would be a significant and unavoidable cumulative impact. The discussion of greenhouse gas emissions and climate change in the 2030 General Plan Master EIR are incorporated by reference in this Initial Study. (CEQA Guidelines Section 15150)

The Master EIR identified numerous policies included in the 2030 General Plan that addressed greenhouse gas emissions and climate change. See Draft MEIR, Chapter 8, and pages 8-49 et seq. The Master EIR is available for review at the offices of Development Services Department, 300 Richards Boulevard, 3rd Floor, Sacramento, CA during normal business hours, and is also available online at <http://www.cityofsacramento.org/dsd/planning/environmental-review/eirs/>.

Policies identified in the 2030 General Plan include directives relating to sustainable development patterns and practices, and increasing the viability of pedestrian, bicycle and public transit modes. A complete list of policies addressing climate change is included in the Master EIR in Table 8-5, pages 8-50 et seq; the Final MEIR included additional discussion of greenhouse gas emissions and climate change in response to written comments. See changes to Chapter 8 at Final MEIR pages 2-19 et seq. See also Letter 2 and response.

ANSWERS TO CHECKLIST QUESTIONS

a-e) The Proposed Ordinance does not include any new buildings or other physical development and therefore would not entail any construction activity. As such, the Proposed Ordinance would not generate construction emissions. However, although the Proposed Ordinance is intended to reduce the environmental impacts related to the use of single-use bags and to promote a shift toward the use of reusable bags in Sacramento, a potential change in the number of truck trips associated with delivering single-use plastic and recycled paper bags to retailers and the additional use of reusable bags could increase long-term operational emissions. As discussed in Section 11, *Transportation/Traffic*, the net increase in truck traffic resulting from the change in bag use would be less than one truck trip per day. In addition, although overall single-use bag use is anticipated to decline as a result of the Proposed Ordinance, the EIR will also analyze whether the shift toward reusable bags could potentially alter processing activities in Sacramento related to bag production which may increase air emissions.

f) Certain population groups are considered more sensitive to air pollution than others. Sensitive population groups include children, the elderly, the acutely ill and the chronically ill, especially those with cardio-respiratory diseases. Residential uses are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Sensitive receptors within Sacramento include children and the elderly.

As discussed above, implementation of the Proposed Ordinance could result in a change in the number of truck trips associated with deliveries of single-use bags to retailers in Sacramento. However, as discussed below in Section 11, *Transportation/Traffic*, the total increase of truck trips associated with single-use bag delivery compared to existing conditions would be less than one new trip per day as a result of the Proposed Ordinance. An increase of less than one new truck trip per day would not be anticipated to result in the exposure of sensitive receptors to substantial pollutants. Therefore, the Proposed Ordinance is not likely to expose sensitive receptors to substantial pollutant concentrations. The impact is **less than significant** and will not be further discussed in the EIR.

g) The Proposed Ordinance would not result in any new stationary sources of pollution. As discussed above, implementation of the Proposed Ordinance could result in a change in the number of truck trips associated with deliveries of single-use bags to retailers in Sacramento. However, as discussed below in Section 11, *Transportation/Traffic*, the total increase of truck

trips associated with single-use bag delivery compared to existing conditions would be less than one new trip per day as a result of the Proposed Ordinance. This would not result in a significant increase in toxic air contaminants (TACs). Further discussion in the EIR is not warranted.

h) The Proposed Ordinance would regulate the use of single-use plastic and paper bags at specified retail establishments in Sacramento, and would create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable bag distributed by these stores. The Proposed Ordinance would not involve any physical development, construction activities, or land use changes that would contribute greenhouse gas emissions. The Proposed Ordinance is intended to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags in Sacramento. Although overall bag use is anticipated to decline as a result of the Proposed Ordinance, a temporary increase in recycled paper bag use and a permanent increase in reusable bag use might lead to an increase in the frequency of truck trips needed to deliver a greater number of these bags to stores in Sacramento. As discussed in Section 11, Transportation/Traffic, the net increase in truck traffic resulting from the change in bag use would be less than one truck trip per day. Also, although overall carryout bag use is anticipated to decline as a result of the Proposed Ordinance, the EIR will also analyze whether the shift toward reusable bags could potentially alter processing activities in Sacramento related to bag production which may increase greenhouse gas emissions.

The EIR will analyze whether a shift toward reusable bags in Sacramento would generate greenhouse gas emissions that may have a significant impact on the environment and conflict with City efforts to meet AB32 standards for the reduction of greenhouse gas emissions. Impacts related to greenhouse gas emissions are potentially significant and will be further analyzed in an EIR.

MITIGATION MEASURES

None

Findings

The project may have a significant environmental effect on Air Quality.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<p>2. <u>BIOLOGICAL RESOURCES</u> Would the proposal:</p> <p>A) Create a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected</p>			X

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
B) Result in substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of plant or animal			X
C) Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands)?			X

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and would apply throughout the city limits. The setting is mainly urban with the Sacramento river corridor supporting riparian woodlands composed of cottonwood (*Populus Fremontii*), willow (*Salix* sp.), sycamore (*Platanus occidentalis*) and valley oak (*Quercus lobata*). Agricultural and grassland areas dominate the unincorporated areas of Sacramento County. Native habitats are located primarily outside the City boundaries but also occur along river and stream corridors and on a number of undeveloped parcels. Native habitats in the region include oak woodlands, riparian woodlands, wetlands, and annual grasslands. These native areas provide homes for a rich variety of wildlife including migratory birds such as ducks and raptors as well as larger native fauna such as deer (*Odocoileus hemionus*) and coyote (*Canis latrans*).

GENERAL PLAN POLICIES CONSIDERED MITIGATION

The following General Plan policies would avoid or lessen environmental impacts as identified in the Master EIR and are considered mitigation measures for the following project-level and cumulative impacts.

Impact 6.3-2: Implementation of the 2030 General Plan could adversely affect special-status plant species due to the substantial degradation of the quality of the environment or reduction of population or habitat below self-sustaining levels.

and

Impact 6.3-3: Implementation of the 2030 General Plan could result in substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of special-status invertebrates.

and

Impact 6.3-4: Implementation of the 2030 General Plan could result in substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels with special-status birds, through the loss of both nesting and foraging habitat.

and

Impact 6.3-5: Implementation of the 2030 General Plan could result in substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of special-status amphibians and reptiles.

and

Impact 6.3-6: Implementation of the 2030 General Plan could result in substantial degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of special-status mammals.

and

Impact 6.3-10: Implementation of the 2030 General Plan could result in the loss of California Department of Fish and Game (CDFG)-defined sensitive natural communities such as elderberry savanna, northern claypan vernal pools, and northern hardpan vernal pools.

and

Impact 6.3-13: Implementation of the City's 2030 General Plan and regional buildout assumed in the Sacramento Valley could result in a regional loss of special-status plant or wildlife species or their habitat.

Mitigation Measure 6.3-2 - General Plan Policy ER 2.1.10 - Habitat Assessments: The City shall consider the potential impact on sensitive plants and for each project requiring discretionary approval and shall require preconstruction surveys and/or habitat assessments for sensitive plant and wildlife species. If the preconstruction survey and/or habitat assessment determines that suitable habitat for sensitive plant and/or wildlife species is present, then either (1) protocol-level or industry recognized (if no protocol has been established) surveys shall be conducted; or (2) presence of the species shall be assumed to occur in suitable habitat on the project site. Survey Reports shall be prepared and submitted to the City and the CDFG or USFWS (depending on the species) for further consultation and development of avoidance and/or mitigation measures consistent with state and federal law.

Impact 6.3-8: Implementation of the 2030 General Plan could result in the loss or modification of riparian habitat, resulting in a substantial adverse effect.

Mitigation Measure 6.3-8 – General Plan Policy ER 2.1.5 - Riparian Habitat Integrity: The City shall preserve the ecological integrity of creek corridors, canals, and drainage ditches that support riparian resources by preserving native plants and, to the extent feasible, removing invasive, non-native plants. If not feasible, adverse impacts on riparian habitat shall be mitigated by the preservation and/or restoration of this habitat at a 1:1 ratio, in perpetuity.

Impact 6.3-9: Implementation of the 2030 General Plan could result in a substantial adverse effect on state or federally protected wetlands and/or waters of the United States through direct removal, filling, or hydrological interruption.

Mitigation Measure 6.3-9 – General Plan Policy ER 2.1.6 – Wetland Protection: The City shall preserve and protect wetland resources including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetland, to the extent feasible. If not feasible, the mitigation of all adverse impacts on wetland resources shall be required in compliance with State and Federal regulations protecting wetland resources, and if applicable, threatened or endangered species.

Additionally, the City may require either on- or off-site permanent preservation of an equivalent amount of wetland habitat to ensure no-net-loss of value and/or function.

Impact 6.3-14: Implementation of the 2030 General Plan and regional buildout assumed in the Sacramento Valley could contribute to the cumulative loss of sensitive natural communities including wetlands and riparian habitat in the region.

Implement Mitigation Measures 6.3-8 and 6.3-9.

STANDARDS OF SIGNIFICANCE

For purposes of this environmental document, an impact would be significant if any of the following conditions or potential thereof, would result with implementation of the proposed project:

- Creation of a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected;
- Substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of plant or animal; or
- Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands).

For the purposes of this document, “special-status” has been defined to include those species, which are:

- Listed as endangered or threatened under the federal Endangered Species Act (or formally proposed for, or candidates for, listing);
- Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- Designated as endangered or rare, pursuant to California Fish and Game Code (Section 1901);
- Designated as fully protected, pursuant to California Fish and Game Code (Section 3511, 4700, or 5050);
- Designated as species of concern by U.S. Fish and Wildlife Service (USFWS), or as species of special concern to California Department of Fish and Game (CDFG);
- Plants or animals that meet the definition of rare or endangered under the California Environmental Quality Act (CEQA).

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

Chapter 6.3 of the Master EIR evaluated the effects of the 2030 General Plan on biological resources within the general plan policy area. The Master EIR identified potential impacts in terms of degradation of the quality of the environment or reduction of habitat or population below self-sustaining levels of special-status birds, through the loss of both nesting and foraging habitat.

Policies in the 2030 General Plan were identified as mitigating the effects of development that could occur under the provisions of the 2030 General Plan. Policy 2.1.5 calls for the City to preserve the ecological integrity of creek corridors and other riparian resources; Policy ER

2.1.10 requires the City to consider the potential impact on sensitive plants for each project and to require pre-construction surveys when appropriate; and Policy 2.1.11 requires the City to coordinate its actions with those of the California Department Fish and Game, U.S. Fish and Wildlife Service, and other agencies in the protection of resources.

The Master EIR concluded that the cumulative effects of development that could occur under the 2030 General Plan would be significant and unavoidable as they related to effects on special-status plant species (Impact 6.3-2), reduction of habitat for special-status invertebrates (Impact 6.3-3), loss of habitat for special-status birds (Impact 6.3-4), loss of habitat for special-status amphibians and reptiles (Impact 6.3-5), loss of habitat for special-status mammals (Impact 6.5-6), special-status fish (Impact 6.3-7) and, in general, loss of riparian habitat, wetlands and sensitive natural communities such as elderberry savannah (Impacts 6.3-8 through 10).

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A) The Proposed Ordinance would not involve development or construction activities that would use hazardous materials. Although hazardous materials may be used in the process to manufacture single-use plastic and recycled paper bags as well as reusable bags, there are no plastic, paper, or large-scale reusable bag manufacturing facilities within Sacramento and any existing or potential manufacturing facilities that manufacture bags would be required to continue to adhere to the requirements of the California Health and Safety Code (Section 25531-25543.3), which establishes a program for the prevention of accidental releases of regulated substances.

The proposed Bag Ordinance would reduce plastic bag usage by 55% compared to existing conditions (approximately 137.2 million plastic bags annually), and would reduce total bag use by an estimated 24% (to approximately 190.3 million bags). This reduction in bags would be expected to generally reduce litter-related impacts to sensitive species. Therefore, sensitive species such as sea turtles, fish, and bird species would benefit from the proposed Bag Ordinance, which would reduce the amount of litter that could enter the marine environment. **No additional environmental effect** would occur and further analysis of these issues in an EIR is not warranted.

B-C) The Proposed Ordinance would not include any physical development or construction activity and, therefore, would not alter or remove any existing riparian habitat or federal wetlands in Sacramento. As such, the Proposed Ordinance would not adversely affect any riparian habitat or any federally protected wetlands.

Various trees, shrubs and bushes in Sacramento serve as roosting/nesting habitat for a variety of migratory and resident birds. However, the Proposed Ordinance would not include any physical development or construction activity and, therefore, would not alter or remove any existing vegetation in Sacramento. As such, the Proposed Ordinance would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. **No additional environmental effect** would occur and further analysis of this issue in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to Biological Resources.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
3. CULTURAL RESOURCES Would the project:			X
A) Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in § 15064.5?			X
B) Directly or indirectly destroy a unique paleontological resource?			X

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and would apply throughout the city limits. The city contains multiple historic, archaeological and paleontological resources in various locations.

STANDARDS OF SIGNIFICANCE

For purposes of this Initial Study, cultural resource impacts may be considered significant if the proposed project would result in one or more of the following:

1. Cause a substantial change in the significance of a historical or archaeological resource as defined in CEQA Guidelines Section 15064.5 or
2. Directly or indirectly destroy a unique paleontological resource. Answers to Checklist Questions

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR evaluated the potential effects of development under the 2030 General Plan on prehistoric and historic resources. See Chapter 6.4. The Master EIR identified significant and unavoidable effects on historic resources and archaeological resources.

General plan policies identified as reducing such effects call for identification of resources on project sites (Policy HCR 2.1.1), implementation of applicable laws and regulations (Policy HCR 2.1.2 and HCR 2.1.15), early consultation with owners and land developers to minimize effects (Policy HCR 2.1.10 and encouragement of adaptive reuse of historic resources (Policy HCR 2.1.13). Demolition of historic resources is deemed a last resort. (Policy HCR 1.1.14)

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A-B) The Proposed Ordinance would not involve construction activities or physical development that would cause a substantial adverse change in the significance of a historical or archaeological resource or directly or indirectly destroy a unique paleontological resource. Therefore, there would be **no additional environmental effect** and further analysis of these issues in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to Cultural Resources.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<p><u>4.GEOLOGY AND SOILS</u></p> <p>Would the project allow a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards?</p>			X

ENVIRONMENTAL SETTING

The City of Sacramento is located within the Great Valley geomorphic province of California. The Great Valley is a deep trough extending 400-miles long from the Klamath Mountains in the north to the Tehachapi Mountains in the south. The geologic formations of the great valley are typified by thick sequences of alluvial sediments derived primarily from the erosion of the Sierra Nevada to the east and, to a lesser extent, erosion of the Klamath Mountains and Cascade Range to the north. The sediments from these mountains were transported downstream and deposited onto the valley floor as river channel and flood plain deposits and alluvial fans. The subsurface materials beneath the project site have been mapped as recent (Holocene to Pleistocene-aged) alluvial deposits attributed to the Sacramento and American Rivers. The

younger alluvial soils are underlain by older (Pleistocene) alluvial fan sediments of the Riverbank Formation. The Riverbank Formation is composed of semi-consolidated gravels, sands, and silts.

STANDARDS OF SIGNIFICANCE

For the purposes of this Initial Study, an impact is considered significant if it allows a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

Chapter 6.5 of the Master EIR evaluated the potential effects related to seismic hazards, underlying soil characteristics, slope stability, erosion, existing mineral resources and paleontological resources in the general plan policy area. Implementation of identified policies in the 2030 General Plan reduced all effects to a less-than-significant level. Policies EC 1.1.1 through 1.1.3 require regular review of the City's seismic and geologic safety standards, geotechnical investigations for project sites and retrofit of critical facilities such as hospitals and schools.

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A) The Proposed Ordinance would regulate the use of recycled paper and single-use plastic bags at specified retail establishments in Sacramento, and would create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable bag distributed by these stores. The Proposed Ordinance would not involve development or construction activity and therefore would introduce geological or seismic hazards. Therefore, ***no additional environmental effect*** would occur and further analysis of these issues in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to Geology and Soils.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
5. HAZARDS			
Would the project:			
A) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities?			X
B) Expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials?			X
C) Expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities?			X

ENVIRONMENTAL AND REGULATORY SETTING

Federal regulations and regulations adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) apply to the identification and treatment of hazardous materials during demolition and construction activities. Failure to comply with these regulations respecting asbestos may result in a Notice of Violation being issued by the AQMD and civil penalties under state and/or federal law, in addition to possible action by U.S. EPA under federal law.

Federal law covers a number of different activities involving asbestos, including demolition and renovation of structures (40 CFR § 61.145).

SMAQMD Rule 902 and Commercial Structures

The work practices and administrative requirements of Rule 902 apply to all commercial renovations and demolitions where the amount of Regulated Asbestos-Containing Material (RACM) is greater than:

- 260 lineal feet of RACM on pipes, or
- 160 square feet of RACM on other facility components, or
- 35 cubic feet of RACM that could not be measured otherwise.

The administrative requirements of Rule 902 apply to any demolition of commercial structures, regardless of the amount of RACM.

Asbestos Surveys

To determine the amount of RACM in a structure, Rule 902 requires that a survey be conducted prior to demolition or renovation unless:

- the structure is otherwise exempt from the rule, or
- any material that has a propensity to contain asbestos (so-called "suspect material") is treated as if it is RACM.

Surveys must be done by a licensed asbestos consultant and require laboratory analysis. Asbestos consultants are listed in the phone book under "Asbestos Consultants." Large industrial facilities may use non-licensed employees if those employees are trained by the U.S. EPA. Questions regarding the use of non-licensed employees should be directed to the AQMD.

Removal Practices, Removal Plans/Notification and Disposal

If the survey shows that there are asbestos-containing materials present, the SMAQMD recommends leaving it in place.

If it is necessary to disturb the asbestos as part of a renovation, remodel, repair or demolition, Cal OSHA and the Contractors State License Board require a licensed asbestos abatement contractor be used to remove the asbestos-containing material.

There are specific disposal requirements in Rule 902 for friable asbestos-containing material, including disposal at a licensed landfill. If the material is non-friable asbestos, any landfill willing to accept asbestos-containing material may be used to dispose of the material.

STANDARDS OF SIGNIFICANCE

For the purposes of this Initial Study, an impact is considered significant if the proposed project would:

- expose people (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities;
- expose people (e.g., residents, pedestrians, construction workers) to asbestos-containing materials or other hazardous materials; or
- expose people (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during dewatering activities.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR evaluated effects of development on hazardous materials, emergency response and aircraft crash hazards. See Chapter 6.6. Implementation of the General Plan may result in the exposure of people to hazards and hazardous materials during construction activities, and exposure of people to hazards and hazardous materials during the life of the General Plan. Impacts identified related to construction activities and operations were found to be less than significant. Policies included in the 2030 general Plan, including PHS 3.1.1 (investigation of sites for contamination) and PHS 3.1.2 (preparation of hazardous materials actions plans when appropriate) were effective in reducing the identified impacts.

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A-C) The Proposed Ordinance would regulate the use of single-use plastic and paper bags at specified retail establishments in Sacramento, and would create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable bag distributed by these stores. The Proposed Ordinance would not involve development or construction activities. Therefore, it would not expose people to contaminated soil during construction, asbestos-containing materials, or contaminated groundwater. ***No additional environmental effect*** would occur and further analysis of these issues in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to Hazards.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
6. <u>HYDROLOGY AND WATER QUALITY</u> Would the project:			
A) Substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the project?	X		
B) Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood ?			X

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and the Proposed Ordinance would apply throughout the city limits. Sacramento is located toward the northeast corner of Sacramento County at the confluence of the Sacramento and American Rivers and large areas of the City are vulnerable to flooding. Sacramento has a deep-water port and is connected to San Francisco Bay and the Pacific Ocean through the Sacramento Delta. Residents in Sacramento are served by the Sacramento Department of Utilities. About 85% of the water used in the City comes from the Sacramento and American Rivers. The remaining water comes from groundwater sources.

GENERAL PLAN POLICIES CONSIDERED MITIGATION

The following General Plan policy would avoid or lessen environmental impacts as identified in the Master EIR and is considered a mitigation measure for the following project-level and cumulative impacts.

Impact 6.7-3: Implementation of the 2030 General Plan could increase exposure of people and/or property to risk of injury and damage from a localized 100-year flood.

and

Impact 6.7-6: Implementation of the 2030 General Plan, in addition to other projects in the watershed, could result in increased numbers of residents and structures exposed to a localized 100-year flood event.

Mitigation Measure 6.7-6 - General Plan Policy ER 1.1.5 - No Net Increase: The City shall require all new development to contribute no net increase in stormwater runoff peak flows over existing conditions associated with a 100- year storm event.

STANDARDS OF SIGNIFICANCE

For purposes of this Initial Study, impacts to hydrology and water quality may be considered

significant if construction and/or implementation of the Proposed Project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

- substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the Specific Plan or
- substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

Chapter 6.7 of the Master EIR evaluates the potential effects of the 2030 General Plan as they relate to surface water, groundwater, flooding, stormwater and water quality. Potential effects include water quality degradation due to construction activities (Impacts 6.7-1, 6.7-2), and exposure of people to flood risks (Impacts 6.7-3, 6.7-4). Policies included in the 2030 General Plan, including a directive for regional cooperation (Policies ER 1.1.2, EC 2.1.1, EC 2.1.1), comprehensive flood management (Policy EC 2.1.14), and construction of adequate drainage facilities with new development (Policy U 4.1.1) were identified that reduced all impacts to a less-than-significant level.

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A) The Proposed Ordinance would not involve any physical development or construction activities, but rather is intended to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags in Sacramento. It is anticipated that the reduction of single-use bags would incrementally reduce the amount of litter in Sacramento that enters storm drains, thereby improving water quality. However, the increased use of reusable bags could also potentially affect water quality if reusable bags are improperly disposed of and become litter that enters the storm drain system. In addition, although overall bag use is anticipated to decline as a result of the Proposed Ordinance, the EIR will also analyze whether the shift toward reusable bags and recycled paper bags could potentially affect water quality as a result of processing activities related to bag production. Consequently, impacts related to water quality standards and waste discharge requirements are considered ***potentially significant*** and will be further analyzed in an EIR.

B) The Proposed Ordinance would not involve construction of any new buildings or other physical development and, therefore, would not increase exposure of people or structures to significant flood hazards. ***No additional environmental effect*** would occur and further analysis of these issues in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project may have a significant environmental effect on Hydrology and Water Quality.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
7. <u>LIGHT AND GLARE</u> Would the proposal:			X
A) Create a source of glare that would cause a public hazard or annoyance?			X
B) Create a new source of light that would be cast onto oncoming traffic or residential uses?			X

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and would apply throughout the city limits. The setting is mainly urban. Existing sources of light within Sacramento include street lights, light structures in surface parking areas, and lighting on buildings. Existing sources of glare include vehicles, building materials, and windows.

STANDARDS OF SIGNIFICANCE

For purposes of this Initial Study, aesthetics impacts may be considered significant if the proposed project would result in one or more of the following:

Glare. Glare is considered to be significant if it would be cast in such a way as to cause public hazard or annoyance for a sustained period of time.

Light. Light is considered significant if it would be cast onto oncoming traffic or residential uses.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR described the existing visual conditions in the general plan policy area, and the potential changes to those conditions that could result from development consistent with the 2030 general Plan. See Master EIR, Chapter 6.13, Urban design and Visual Resources.

The Master EIR identified potential impacts for glare (Impact 6.13-1). Mitigation Measure 6.13-1, set forth below, was identified to reduce the effect to a less-than-significant level.

Light cast onto oncoming traffic or residential uses was identified as a potential impact (Impact 6.13-2). The Master EIR identified Policy LU 6.1.14 (Compatibility with Adjoining Uses) and its

requirement that lighting must be shielded and directed downward as reducing the potential effect to a less-than-significant level.

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A, B) The Proposed Ordinance does not involve any construction and would not introduce new reflective surfaces or new sources of night lighting. Therefore, there would be ***no additional environmental effect*** related to the creation of a new source of light or glare and further analysis in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to light and glare.

SACRAMENTO REUSABLE BAG ORDINANCE

INITIAL STUDY

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<p>8. NOISE</p> <p>Would the project:</p> <p>A) Result in exterior noise levels in the project area that are above the upper value of the normally acceptable category for various land uses due to the project's noise level increases?</p>			X
<p>B) Result in residential interior noise levels of 45 dBA L_{dn} or greater caused by noise level increases due to the project?</p>			X
<p>C) Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance?</p>			X
<p>D) Permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction?</p>			X
<p>E) Permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations?</p>			X
<p>F) Permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to project construction and highway traffic?</p>			X

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and would apply throughout the city limits. The setting is mainly urban. Existing sources of noise include traffic-related noise, construction noise, airport noise, noise from manufacturing in industrial areas, and other noise associated with day to day activities such as children playing and conversations.

GENERAL PLAN POLICIES CONSIDERED MITIGATION

The following General Plan policies would avoid or lessen environmental impacts as identified in the Master EIR and are considered mitigation measures for the following project-level and cumulative impacts.

Impact 6.8-4: Implementation of the 2030 General Plan could permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction.

and

Impact 6.8-9: Implementation of the 2030 General Plan could result in cumulative construction vibration levels that exceed the vibration-peak-particle velocities greater than 0.5 inches per second.

General Plan Policy EC 3.1.5 – Interior Vibration Standards: The City shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on the current City or Federal Transit Administration (FTA) criteria.

Impact 6.8-5: Implementation of the 2030 General Plan could permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations.

and

Impact 6.8-10: Implementation of the 2030 General Plan could result in cumulative impacts on adjacent residential and commercial areas being exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations.

General Plan Policy EC 3.1.6 – Vibration Screening Distances: The City shall require new residential and commercial projects located adjacent to major freeways, hard rail lines, or light rail lines to follow the Federal Transit Administration (FTA) screening distance criteria.

Impact 6.8-6: Implementation of the 2030 General Plan could permit historic buildings and archeological sites to be exposed to vibration-peak-particle velocities greater than 0.25 inches per second due to project construction, highway traffic, and rail operations.

General Plan Policy EC 3.1.7 – Vibration: The City shall require an assessment of the damage potential of vibration-induced construction activities, highways, and rail lines in close proximity to historic buildings and archeological sites and require all feasible mitigation measures be implemented to ensure no damage would occur.

STANDARDS OF SIGNIFICANCE

For purposes of this Initial Study, impacts due to noise may be considered significant if construction and/or implementation of the Proposed Project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

- result in exterior noise levels in the project area that are above the upper value of the normally acceptable category for various land uses due to the project's noise level increases;
- result in residential interior noise levels of 45 dBA L_{dn} or greater caused by noise level increases due to the project;
- result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance;

- permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to project construction;
- permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations; or
- permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to project construction and highway traffic.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR evaluated the potential for development under the 2030 General Plan to increase noise levels in the community. New noise sources include vehicular traffic, aircraft, railways, light rail and stationary sources. The general plan policies establish exterior (Policy EC 3.1.1) and interior (EC 3.1.3) noise standards. A variety of policies provide standards for the types of development envisioned in the general plan. See Policy EC 3.1.8, which requires new mixed-use, commercial and industrial development to mitigate the effects of noise from operations on adjoining sensitive land use, and Policy 3.1.9, which calls for the City to limit hours of operations for parks and active recreation areas to minimize disturbance to nearby residences. Notwithstanding application of the general plan policies, noise impacts for exterior noise levels (Impact 6.8-1) and interior noise levels (Impact 6.8-2), and vibration impacts (Impact 6.8-4) were found to be significant and unavoidable.

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A-F) The Proposed Ordinance would apply throughout Sacramento. However, the ordinance would not involve any physical development or construction activities. As such, the Proposed Ordinance would not create new noise sources that would expose persons to noise levels in excess of existing noise standards. The Proposed Ordinance would not expose persons to excessive groundborne vibration or groundborne noise levels, nor would the Proposed Ordinance create a substantial increase in permanent or temporary ambient noise levels. The ordinance could incrementally alter travel patterns associated with transport of single-use and reusable bags; however, this incremental change would not create any audible change in the noise environment in any neighborhoods in or around Sacramento. Therefore, impacts related to noise levels would be **less than significant** and further analysis of these issues in the EIR is not warranted.

MITIGATION MEASURES

None.

Findings

The project would have no additional project-specific environmental effects relating to Noise.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
<p><u>9. PUBLIC SERVICES</u></p> <p>Would the project result in the need for new or altered services related to fire protection, police protection, school facilities, roadway maintenance, or other governmental services beyond what was anticipated in the 2030 General Plan?</p>			X

Environmental Setting

The project site is located within the City of Sacramento and would apply throughout the city limits. Fire protection services are provided by the City of Sacramento Fire Department, police protection services are provided by the Sacramento Police Department, the Sacramento City Unified School District, Elk Grove Unified School District, Natomas Unified School District, and Twin Rivers Unified School District service school-aged children and roadway maintenance is provided by various entities depending on jurisdiction.

STANDARDS OF SIGNIFICANCE

For the purposes of this Initial Study, an impact would be considered significant if the project resulted in the need for new or altered services related to fire protection, police protection, school facilities, roadway maintenance, or other governmental services beyond what was anticipated in the 2030 General Plan.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR evaluated the potential effects of the 2030 General Plan on various public services. These include parks (Chapter 6.9) and police, fire protection, schools, libraries and emergency services (Chapter 6.10).

The general plan provides that adequate staffing levels for police and fire are important for the long-term health, safety and well-being of the community (Goal PHS 1.1, PHS 2.1). The Master EIR concluded that effects would be less than significant.

General plan policies that call for the City to consider impacts of new development on schools (see, for example, Policy ERC 1.1.2 setting forth locational criteria, and Policy ERC 1.1.5 that encourages joint-use development of facilities) reduced impacts on schools to a less-than-significant level. Impacts on library facilities were also considered less than significant (Impact 6.10-8).

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

The Proposed Ordinance would regulate the use of single-use plastic and paper bags at specified retail establishments in Sacramento, and would create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable bag distributed by these stores. The Proposed Ordinance is intended to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags in Sacramento. Police and fire protection services are provided by the City of Sacramento. The Proposed Ordinance would not involve any new development or land use changes, nor would the ordinance result in an increase in population or employment in Sacramento. Therefore, the ordinance would not place an additional burden on police and fire protection services in Sacramento. In addition, the Proposed Ordinance would not result in an increase in population or employment; therefore, the ordinance would not place an additional burden on existing schools or other government facilities in Sacramento. The Proposed Ordinance would not result in the need to construct new or altered fire protection police, school, or other government facilities. There would be **no additional environmental effect** and further analysis of these issues in an EIR is not warranted.

As discussed in the Transportation section of this IS, delivery of recycled paper and reusable bags associated with the Proposed Ordinance may increase truck trips by less than one truck trip per day. This would not create the need for additional roadway maintenance beyond what was anticipated in the General Plan. There would be **no additional environmental effect** and further analysis of these issues in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to Public Services.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
10. RECREATION			
Would the project:			
A) Cause or accelerate substantial physical deterioration of existing area parks or recreational facilities?			X
B) Create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2030 General Plan?			X

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and would apply throughout the city limits. Sacramento has approximately 3,178 acres of parkland within 222 parks (Sacramento Department of Parks and Recreation, 2013).

STANDARDS OF SIGNIFICANCE

For purposes of this Initial Study, impacts to recreational resources are considered significant if the proposed project would do either of the following:

- cause or accelerate substantial physical deterioration of existing area parks or recreational facilities; or
- create a need for construction or expansion of recreational facilities beyond what was anticipated in the 2030 General Plan.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

Chapter 6.9 of the Master EIR considered the effects of the 2030 General Plan on the City's existing parkland, urban forest, recreational facilities and recreational services. The general plan identified a goal of providing an integrated park and recreation system in the City (Goal ERC 2.1). New residential development will be required to dedicate land, pay in-lieu fees or otherwise contribute a fair share to the acquisition and development of parks and recreation facilities. (Policy ERC 2.2.4) Impacts were considered less than significant after application of the applicable policies. (Impacts 6.9-1 and 6.9-2)

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None required.

ANSWERS TO CHECKLIST QUESTIONS

A, B) The Proposed Ordinance would not involve the construction of residences. Therefore, the ordinance would not increase the demand for recreation facilities, nor would it alter existing recreation facilities or require the construction for any new facilities. There would be **no additional environmental effect** and further analysis of these issues in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to Recreation.

Issues:	Effect remains significant with all identified mitigation	Effect can be mitigated to less than significant	No additional significant environmental effect
<p>11. <u>TRANSPORTATION AND CIRCULATION</u> Would the project:</p> <p>A) Roadway segments: degrade peak period Level of Service (LOS) from A,B,C or D (without the project) to E or F (with project) or the LOS (without project) is E or F, and project generated traffic increases the Volume to Capacity Ratio (V/C ratio) by 0.02 or more.</p>			X
<p>B) Intersections: degrade peak period level of service from A, B, C or D (without project) to E or F (with project) or the LOS (without project) is E or F, and project generated traffic increases the peak period average vehicle delay by five seconds or more.?</p>			X
<p>C) Freeway facilities: off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway; project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service; project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or the expected ramp queue is greater than the storage capacity?</p>			X
<p>D) Transit: adversely affect public transit operations or fail to adequately provide for access to public?</p>			X
<p>E) Bicycle facilities: adversely affect bicycle travel, bicycle paths or fail to adequately provide for access by bicycle?</p>			X
<p>F) Pedestrian: adversely affect pedestrian travel, pedestrian paths or fail to adequately provide for access by pedestrians?</p>			X

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and would apply throughout the city limits. The setting is mainly urban. Trucks delivering carryout bags to retail stores throughout the city use a variety of routes including the main highways Interstate 5, Interstate 80, US 50, Business 80, State Route 99, as well local roads and arterials.

GENERAL PLAN POLICIES CONSIDERED MITIGATION

The following General Plan policy would avoid or lessen environmental impacts as identified in the Master EIR and is considered a mitigation measure for the following project-level and cumulative impacts.

Impact 6.12-1: Implementation of the 2030 General Plan could result in roadway segments located within the Policy Area that do not meet the City's current Level of Service (LOS) standard or the LOS D – E goal.

and

Impact 6.12-8: Implementation of the 2030 General Plan could result in a cumulative increase in traffic that would adversely impact the existing LOS for City roadways.

Mitigation Measure 6.12-1 - General Plan Policy M 1.2.2 - LOS Standard: The City shall allow for flexible Level of Service (LOS) standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.

a. Core Area Level of Service Exemption-LOS F conditions are acceptable during peak hours in the Core Area bounded by C Street, the Sacramento River, 30th Street, and X Street. If a Traffic Study is prepared and identifies a LOS impact that would otherwise be considered significant to a roadway or intersection that is in the Core Area as described above, the project would not be required in that particular instance to widen roadways in order for the City to find project conformance with the General Plan. Instead, General Plan conformance could still be found if the project provides improvements to other parts of the citywide transportation system in order to improve transportation-system-wide roadway capacity, to make intersection improvements, or to enhance non-auto travel modes in furtherance of the General Plan goals. The improvements would be required within the project site vicinity or within the area affected by the project's vehicular traffic impacts. With the provision of such other transportation infrastructure improvements, the project would not be required to provide any mitigation for vehicular traffic impacts to road segments in order to conform to the General Plan. This exemption does not affect the implementation of previously approved roadway and intersection improvements identified for the Railyards or River District planning areas.

b. Level of Service Standard for Multi-Modal Districts-The City shall seek to maintain the following standards in the Central Business District, in areas within 1/2 mile walking distance of light rail stations, and in areas designated for urban scale development (Urban Centers, Urban Corridors, and Urban Neighborhoods as designated in the Land Use and Urban Form Diagram). These areas are characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher-density development.

- Maintain operations on all roadways and intersections at LOS A-E at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS F conditions may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project.

c. Base Level of Service Standard-the City shall seek to maintain the following standards for all areas outside of multi-modal districts.

- Maintain operations on all roadways and intersections at LOS A-D at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS E or F conditions may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.

d. Roadways Exempt from Level of Service Standard-The above LOS standards shall apply to all roads, intersections or interchanges within the City except as specified below. If a Traffic Study is prepared and identifies a significant LOS impact to a roadway or intersection that is located within one of the roadway corridors described below, the project would not be required in that particular instance to widen roadways in order for the City to find project conformance with the General Plan. Instead, General Plan conformance could still be found if the project provides improvements to other parts of the city wide transportation system in order to improve transportation-system-wide roadway capacity to make intersection improvements, or to enhance non-auto travel modes in furtherance of the General Plan goals. The improvements would be required within the project site vicinity or within the area affected by the project's vehicular traffic impacts. With the provision of such other transportation infrastructure improvements, the project would not be required to provide any mitigation for vehicular traffic impacts to the listed road segment in order to conform to the General Plan.

- 12th/14th Avenue: State Route 99 to 36th Street
- 24th Street: Meadowview Road to Delta Shores Circle
- 65th Street: Folsom Boulevard to 14th Avenue
- Alhambra Boulevard: Folsom Boulevard to P Street
- Arcade Boulevard: Marysville Boulevard to Del Paso Boulevard
- Arden Way: Capital City Freeway to Ethan Way
- Blair Avenue/47th Avenue: S. Land Park Drive to Freeport Boulevard
- Broadway: 15th Street to Franklin Boulevard
- Broadway: 58th to 65th Streets
- El Camino Avenue: Stonecreek Drive to Marysville Boulevard
- El Camino Avenue: Capitol City Freeway to Howe Avenue
- Elder Creek Road: 65th Street to Power Inn Road
- Florin Perkins Road: 14th Avenue to Elder Creek Road
- Florin Road: Greenhaven Drive to 1-5; 24th Street to Franklin Boulevard
- Folsom Boulevard: 34th Street to Watt Avenue
- Freeport Boulevard: Broadway to Seamas Avenue
- Fruitridge Road: Franklin Boulevard to SR 99
- Garden Highway: Truxel Road to Northgate Boulevard

- Howe Avenue: American River Drive to Folsom Boulevard
- J Street: 43rd Street to 56th Street
- Mack Road: Meadowview Road to Stockton Boulevard
- Martin Luther King Boulevard: Broadway to 12th Avenue
- Marysville Boulevard., 1-80 to Arcade Boulevard
- Northgate Boulevard: Del Paso Road to SR 160
- Raley Boulevard: Bell Avenue to 1-80
- Roseville Road: Marconi Avenue to 1-80
- Royal Oaks Drive: SR 160 to Arden Way
- Truxel Road: 1-80 to Gateway Park

STANDARDS OF SIGNIFICANCE

For purposes of this Initial Study, impacts resulting from changes in transportation or circulation may be considered significant if construction and/or implementation of the Proposed Project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

Roadway Segments

- A) the traffic generated by a project degrades peak period Level of Service (LOS) from A,B,C or D (without the project) to E or F (with project) or
- B) the LOS (without project) is E or F, and project generated traffic increases the Volume to Capacity Ratio (V/C ratio) by 0.02 or more.

Intersections

- the traffic generated by a project degrades peak period level of service from A, B, C or D (without project) to E or F (with project) or
- the LOS (without project) is E or F, and project generated traffic increases the peak period average vehicle delay by five seconds or more.

Freeway Facilities

Caltrans considers the following to be significant impacts.

- off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway;
- project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service;
- project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or
- the expected ramp queue is greater than the storage capacity.

Transit

- adversely affect public transit operations or
- fail to adequately provide for access to public transit.

Bicycle Facilities

- adversely affect bicycle travel, bicycle paths or
- fail to adequately provide for access by bicycle.

Pedestrian Circulation

- adversely affect pedestrian travel, pedestrian paths or
- fail to adequately provide for access by pedestrians.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

Transportation and circulation were discussed in the Master EIR in Chapter 6.12. Various modes of travel were included in the analysis, including vehicular, transit, bicycle, pedestrian and aviation components. The analysis included consideration of roadway capacity and identification of levels of service, and effects of the 2030 General Plan on the public transportation system. Provisions of the 2030 General Plan that provide substantial guidance include Goal Mobility 1.1, calling for a transportation system that is effectively planned, managed, operated and maintained, promotion of multimodal choices (Policy M 1.2.1), identification of level of service standards (Policy M 1.2.2), development of a fair share funding system for Caltrans facilities (Policy M 1.5.6) and development of complete streets (Goal M 4.2).

While the general plan includes numerous policies that direct the development of the City's transportation system, the Master EIR concluded that the general plan development would result in significant and unavoidable effects. See Impacts 6.12-1, 6.12-8 (roadway segments in the City), Impacts 6.12-2, 6.12-9 (roadway segments in neighboring jurisdictions), and Impacts 6.12-3, 6.12-10 (freeway segments).

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None.

ANSWERS TO CHECKLIST QUESTIONS

A, B, C) The Proposed Ordinance would regulate the use of single-use plastic and paper bags at specified retail establishments in Sacramento, and would create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable bag distributed by these stores. The intent of the Proposed Ordinance is to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags in Sacramento. The Proposed Ordinance would not involve any physical development or construction activities. However, the shift toward reusable bags could alter truck travel patterns associated with delivering bags from manufacturers to retailers.

Stores making available recycled paper bags would be allowed to sell recycled paper bags made from 100% recycled material with a 40% post-consumer recycled content to customers for \$0.10 per bag. This cost requirement would create a disincentive to customers to request recycled paper bags when shopping at regulated stores and is intended to reduce the environmental impacts related to the use of single-use bags and to promote a major shift toward the use of reusable bags by consumers in Sacramento. The Proposed Ordinance may lead to a

short term increase in recycled paper bag use as consumers would be unable to get a free plastic bag while shopping and may not have a reusable bag, but may be willing to pay a fee to use recycled paper bags. Based on a cost requirement of at least \$0.10 per bag, it is assumed in this analysis that the total volume of plastic bags currently used in Sacramento (approximately 249,549,243 single-use plastic bags per year) would be replaced by approximately 30% recycled paper bags and 65% reusable bags as a result of the Proposed Ordinance. It is assumed that 5% of the existing total of single-use plastic bags used in Sacramento would remain in use since the Proposed Ordinance does not apply to some retailers who distribute plastic bags (i.e., restaurants). Thus, for this analysis it is assumed that approximately 12,476,962 single-use plastic bags would be used in Sacramento after the implementation of the Proposed Ordinance. Even though the volume of a single recycled paper bag (20.48 liters) is generally equal to approximately 150% of the volume of a single-use plastic bag (14 liters^b) and thus could hold a larger volume, for this analysis it is conservatively assumed that approximately 74,861,773 recycled paper bags would replace approximately 30% of the single-use plastic bags currently used in Sacramento.

In order to estimate the number of reusable bags that would replace 162,200,508 plastic bags (65% of the existing number of plastic bags used annually in Sacramento), it is assumed that a reusable bag would be used by a customer once per week for one year (52 times). According to the March 2010 *Master Environmental Assessment [MEA] on Single-use and Reusable Bags* (Green Cities California, March 2010), a reusable bag may be used 100 times or more; therefore the estimate of 52 uses per year for reusable bags is conservative. Based on the estimate of 52 uses, 162,200,508 single-use plastic bags that would be removed as a result of the Proposed Ordinance would be replaced by 3,119,241 reusable bags. This amounts to an estimated 6.6 reusable bags per person per year based on a Sacramento population of 473,409. This analysis assumes that as a result of the Proposed Ordinance the approximately 249.5 million single-use plastic bags currently used in Sacramento annually would be reduced to approximately 190.3 million total bags as a result of the Proposed Ordinance.

A temporary increase in recycled paper bag use and a permanent increase in reusable bag use might lead to an increase in the frequency of truck trips needed to deliver a greater number of these bags to stores in Sacramento. This is because recycled paper and reusable bags take up more cargo space per unit than plastic bags. However, any increase in truck trips related to recycled paper and reusable bag delivery would be partially offset by the reduction in truck trips related to single-use plastic bag delivery since under the Proposed Ordinance, plastic bags would no longer be distributed at the vast majority of retail outlets and therefore truck delivery would be substantially reduced. Nevertheless, a temporary increase in recycled paper bag use and a permanent increase in reusable bag use would result in a net increase in truck traffic. As shown in Table 3, the net increase in truck traffic resulting from the change in bag use would be less than one truck trip per day.

Truck trips would be expected to primarily utilize major regional transportation facilities (such as Interstate 5, Interstate 80, US Route 50, and Highway 99). Delivery trucks may periodically travel on residential streets, but an increase of less than one truck trip per day would not cause a significant traffic impact at any existing intersections, street segments, or freeway facilities in Sacramento. Therefore, impacts related to the existing traffic load and capacity of the local street system would be **less than significant** and further analysis in an EIR is not warranted.

^b *The Ordinances to Ban Plastic Bags in Los Angeles County Final Environmental Impact Report (SCH #2009111104)*. Adopted by the County of Los Angeles Board of Supervisors on November 16, 2010.

Table 3
Estimated Truck Trips per Day
Following Implementation of the Proposed Ordinance

Bag Type	Number of Bags per Year	Number of Bags per Truck Load**	Truck Trips Per Year	Truck Trips per Day
Single-use Plastic	12,476,962*	2,080,000	6	0.02
Recycled paper	74,861,773*	217,665	344	0.94
Reusable	3,119,241*	108,862	29	0.08
Replacement Bags for Secondary Plastic Bag Uses	99,815,697*	2,080,000	48	0.13
Total			427	1.17
Existing Truck Trips for Plastic Bags***			(120)	(0.33)
Net New Truck Trips (Total minus Existing)			307	0.84

**Based on worst case scenario estimate of 5% existing plastic bag use in Sacramento (approximately 4,761,318 plastic bags per year) to remain, 65% conversion of the volume of existing plastic bag use in Sacramento to paper bags and 30% conversion to reusable bags (based on 52 uses per year). 40% of the initial single-use plastic bags will be purchased for at home uses.*

***City of Santa Monica Single-Use Bag Ordinance EIR (SCH #2010041004), January 2011.*

****95,226,354 plastic bags used in Sacramento per year/2,080,000 bags per truck load=approximately 46 truck trips per year.*

D, E, F) The ordinance would not involve any construction activities or development and would not increase population; therefore, implementation of the Proposed Ordinance would not affect transit, pedestrian or bicycle operations, circulation, or facilities. There would be **no additional environmental effect** and further analysis in an EIR is not warranted.

MITIGATION MEASURES

None.

FINDINGS

The project would have no additional project-specific environmental effects relating to Transportation and Circulation.

Issues:	Effect will be studied in the EIR	Effect can be mitigated to less than significant	No additional significant environmental effect
12. UTILITIES AND SERVICE SYSTEMS			
Would the project:			
A) Result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments?	X		
B) Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts?	X		

ENVIRONMENTAL SETTING

The project site is located within the City of Sacramento and would apply throughout the city limits. The setting is mainly urban. Residents in Sacramento are served by the Sacramento Department of Utilities. About 85% of the water used in the City comes from the Sacramento and American Rivers. The remaining water comes from groundwater sources. Wastewater draining from indoor sources in Sacramento flows through sewer pipes that direct the wastewater to the Sacramento Regional County Sanitation District. Recycling and solid waste management is provided by the City of Sacramento Recycling and Solid Waste Division.

STANDARDS OF SIGNIFICANCE

For the purposes of this Initial Study, an impact would be considered significant if the project resulted in the need for new or altered services related to fire protection, police protection, or school facilities beyond what was anticipated in the 2030 General Plan:

- result in the determination that adequate capacity is not available to serve the project's demand in addition to existing commitments or
- require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental impacts.

SUMMARY OF ANALYSIS UNDER THE 2030 GENERAL PLAN MASTER EIR, INCLUDING CUMULATIVE IMPACTS, GROWTH INDUCING IMPACTS, AND IRREVERSIBLE SIGNIFICANT EFFECTS

The Master EIR evaluated the effects of development under the 2030 General Plan on water supply, sewer and storm drainage, solid waste, electricity, natural gas and telecommunications. See Chapter 6.11.

The Master EIR evaluated the impacts of increased demand for water that would occur with development under the 2030 General Plan. Policies in the general plan would reduce the impact generally to a less-than-significant level (see Impact 6.11-1) but the need for new water supply facilities results in a significant and unavoidable effect (Impact 6.11-2). The potential need for expansion of wastewater treatment facilities was identified as having a significant and unavoidable effect (Impacts 6.11-4, 6.11-5) Impacts on solid waste facilities were less than

significant (Impacts 6.11-7, 6.11-8). Implementation of energy efficient standards as set forth in Titles 20 and 24 of the California Code of Regulations for residential and non-residential buildings, would reduce effects for energy to a less-than-significant level.

MITIGATION MEASURES FROM 2030 GENERAL PLAN MASTER EIR THAT APPLY TO THE PROJECT

None available.

ANSWERS TO CHECKLIST QUESTIONS

A, B)

Police protection, fire protection, and school facilities are discussed in Section 9, *Public Services*.

Wastewater

Sacramento is served by multiple wastewater treatment plants. The Proposed Ordinance would prohibit specified retail establishments in Sacramento from providing single-use plastic bags to customers at the point of sale and create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable bag distributed by these stores. The Proposed Ordinance would not involve any new buildings or other physical development and therefore would not directly cause an increase in the amount of wastewater generated. However, increased washing of reusable bags (for sanitary purposes) by Sacramento residents may incrementally increase wastewater generation. This increase of wastewater may exceed the city's contractual entitlement for flows to the various wastewater treatment facilities. Therefore, the Proposed Ordinance could significantly affect Sacramento's wastewater conveyance systems. Impacts related to wastewater conveyance and treatment would be **potentially significant** and will be further analyzed in an EIR.

Water

Sources of water supply within Sacramento include local groundwater supplies and surface water sources. The Proposed Ordinance would be expected to lead to an increase in the number of reusable bags used in Sacramento. Washing reusable bags for sanitary purposes (either in a washing machine or by rinsing and wiping) may incrementally increase water use in Sacramento. The impact to water supply would be **potentially significant** and the potential for the increase in water use to exceed available supplies will be analyzed in the EIR.

Solid Waste

The Kiefer Landfill serves Sacramento. The Proposed Ordinance would regulate the use of single-use plastic and paper bags at specified retail establishments in Sacramento, and would create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable bag distributed by these stores. The Proposed Ordinance is intended to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags in Sacramento. The shift toward reusable bags would reduce the amount of single-use plastic bags sent to local landfills. However, the Proposed Ordinance may result in a temporary increase in the number of recycled paper bags and a permanent increase in the number of reusable bags that are currently used in Sacramento. As such, the Proposed Ordinance may incrementally increase the amount of solid waste generated related to these types of bags. Impacts to Sacramento's solid waste collection and disposal system would be **potentially significant** and this issue will be further analyzed in an EIR.

MITIGATION MEASURES

None.

FINDINGS

The project may have a significant environmental effect on Utilities and Service Systems.

Issues:	Effect remains significant with all identified mitigation	Effect can be mitigated to less than significant	No additional significant environmental effect
13. MANDATORY FINDINGS OF SIGNIFICANCE			
A.) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X
B.) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	X		
C.) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X		

Answers to Checklist Questions

A) The Proposed Ordinance would regulate the use of single-use plastic and paper bags at specified retail establishments in Sacramento, and would create a mandatory minimum ten cent (\$0.10) charge for each recycled paper and reusable distributed by these stores. The Proposed Ordinance is intended to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags in Sacramento. The Proposed Ordinance does not involve any physical development or construction activities. As such, the Proposed Ordinance does not have the potential to eliminate a plant or animal community,

reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. There would be **no additional environmental effect** with respect to these issues and further analysis in an EIR is not warranted.

B) All potential environmental impacts of the project have been determined in this Initial Study to have no impact or a less than significant impact, except for environmental impacts related to air quality, greenhouse gas emissions, hydrology and water quality, and utilities and service systems. Cumulative impacts related to air quality, greenhouse gas emissions, hydrology and water quality, and utilities and service systems could be **potentially significant** and will be analyzed in an EIR.

C) The Proposed Ordinance is intended to reduce the environmental impacts related to the use of single-use bags, and to promote a shift toward the use of reusable bags in Sacramento. The Proposed Ordinance does not involve any physical development or construction activities. As such, impacts related to aesthetics, agriculture and forest resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, land use and planning, mineral resources, noise, population and housing, public services, recreation, and transportation and traffic were determined to have **no additional environmental effect** related to the Proposed Ordinance or were determined to be less than significant and would therefore not cause substantial adverse effects on human beings, either directly or indirectly. As previously mentioned, impacts related to air quality, greenhouse gas emission, hydrology and water quality, and utilities and service systems could be potentially significant. Therefore, effects on human beings, either directly or indirectly could also be **potentially significant** and will be analyzed further in an EIR.

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SECTION IV - ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED


The environmental factors checked below would potentially be affected by this project.

	Aesthetics		Hazards
X	Air Quality		Noise
	Biological Resources		Public Services
	Cultural Resources		Recreation
	Energy and Mineral Resources		Transportation/Circulation
	Geology and Soils	X	Utilities and Service Systems
X	Hydrology and Water Quality		
	None Identified		

SECTION V - DETERMINATION

On the basis of the initial study:

I find that (a) the proposed project is an anticipated subsequent project identified and described in the 2030 General Plan Master EIR; (b) the proposed project is consistent with the 2030 General Plan land use designation and the permissible densities and intensities of use for the project site; (c) that the discussions of cumulative impacts, growth inducing impacts, and irreversible significant effects in the Master EIR are not adequate for the proposed project; and (d) the proposed project will have additional significant environmental effects not previously examined in the Master EIR. An EIR shall be prepared, which shall tier off of the Master EIR to the extent feasible. (CEQA Guidelines Section 15178(e))



Signature

3/12/14

Date

SUSANNA COOK

Printed Name

NOP Comment Letters



3435 Wilshire Blvd., #385
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January 17, 2014

Susanne Cook
Associate Planner, Community Development Department
City of Sacramento
300 Richards Boulevard
Sacramento, CA 95811

RE: Notice of Preparation of an Environmental Impact Report for the Reusable Bag Ordinance

Dear Ms. Cook:

On behalf of Environment California and our supporters, members, and activists throughout the state, I write in strong support of a citywide ban on single-use plastic bags in Sacramento. Single-use plastic shopping bags kill wildlife, drain city budgets, and needlessly pollute Sacramento's rivers, parks, streets, and the Pacific Ocean. Banning plastic bags is the right step to protect sea wildlife and keep Sacramento clean.

In preparing its Environmental Impact Statement, I urge the city to consider the following information in its analysis:

Plastic bags are one of the most common garbage items entering waterways from urban environments. Plastic grocery bags alone were found to be between 7 and 8 percent of floating garbage volume reaching the San Francisco Bay¹ in a 2012 study. Before local governments in Los Angeles County began banning plastic bags, they made up as much as 19 percent of trash floating in the Los Angeles River watershed.² Ocean Conservancy volunteers removed 65,736 plastic bags from California's waterways and beaches during just one day in 2010.³

Plastic bags damage the environment and kill wildlife. More than 660 species of animals are known to be injured or killed by marine debris,⁴ nearly 90 percent of which is plastic. Too often, animals mistake floating plastic for food, like the sea turtles that cannot distinguish between plastic bags and edible jellyfish. In one analysis, a third of all leatherback sea turtles studied had plastic in their stomach, most often a plastic bag.⁵ Ocean Conservancy reports that nearly 15 percent of entangled animals found

¹ EOA, Inc., Preliminary Baseline Trash Generation Rates for San Francisco Bay Area MS4s 10 (2012).

² Los Angeles County Board of Supervisors, Staff Report: An Overview of Carryout Bags in Los Angeles County 24 tbl.5 (2007).

³ Ocean Conservancy, Tracking Trash: 25 Years of Action for the Ocean 72 (2011).

⁴ Secretariat of the Convention on Biological Diversity, Impact of Marine Debris on Biodiversity 9 (2013).

⁵ Nicholas Mrosovsky et al., Leatherback Turtles: The Menace of Plastic, 58 Marine Pollution Bulletin 287, 288 (2009).

during their 2010 cleanup were trapped by plastic bags, mostly birds and fish.⁶ Even whales have washed up on the Pacific coast with plastic bags in their stomach.⁷

West Coast communities spend an average of \$13 per resident per year cleaning up the kinds of garbage that becomes marine debris, including plastic bags.⁸ Local governments in the Los Angeles River watershed have had to install special storm drain covers, at a cost of over \$300 per drain and another \$180 in annual maintenance, just to keep plastic bags and other garbage out of the river.⁹

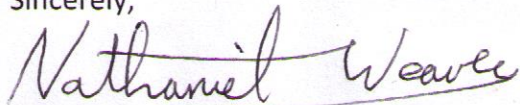
Some landfills spend \$25,000 per month on patrols to clean up escaped plastic bags.¹⁰ Less than 5 percent of plastic bags are ever recycled.¹¹ Light and aerodynamic, plastic bags blow out of waste receptacles and landfills easily: they are uniquely litter-prone even when properly disposed of.

Studies of local bag bans consistently show success. Post-ban, over 75 percent of shoppers in San Jose and Santa Monica brought their own bag or carried goods home by hand.¹² This cut San Jose's plastic bag storm drain litter by 89 percent, by 60 percent in the creeks and rivers, and by 59 percent on San Jose's streets.¹³ Unincorporated Los Angeles County's ordinance cut single-use bag use by 94 percent, including a 25 percent drop in paper bag use.¹⁴

To date, 90 California cities and counties have banned plastic bags.¹⁵ Nearly 1 in 3 Californians live somewhere with a plastic bag ban. I urge Sacramento to join the growing number of California communities that have stood up for the Pacific Ocean by banning single-use plastic bags.

Thank you for your work on this important environmental issue.

Sincerely,



Nathan Weaver

Oceans & Preservation Advocate
Environment California

⁶ Ocean Conservancy, Tracking Trash: 25 Years of Action for the Ocean 35 (2011).

⁷ MSNBC, Plastic, Pants Found in Dead Whale (Apr. 4, 2010), www.msnbc.msn.com/id/36664196/ns/us_news-environment/t/plastic-pants-found-dead-whale. For photos of this whale's stomach contents, see Cascadia Research, Foreign Material Found in the Stomach of Gray Whale (Apr. 10, 2010) www.cascadiaresearch.org/CRC%20-%201035%20stomach%20content.pdf.

⁸ B. H. Stickel et al., The Cost to West Coast Communities of Dealing with Trash, Reducing Marine Debris 1, 17 (2012).

⁹ Gary Hildebrand, Trash TMDL: Achieving Compliance 9-16 (2011).

¹⁰ Los Angeles County, An Overview of Carryout Bags in Los Angeles County 23 (2007).

¹¹ Los Angeles County, Chief Executive Office, Recycling and Plastic Bags 2 (2008).

¹² Kerrie Romanow, City of San Jose, Bring Your Own Bag Ordinance Implementation Results and Actions to Reduce EPS Foam Food Ware 6 (2012); Team Marine, Santa Monica High School, The Effects of the Plastic Bag Ban on Consumer Bag Choice at Santa Monica Grocery Stores 4 (2013).

¹³ Romanow, *supra* at 5.

¹⁴ Los Angeles County, Implementation of the County of Los Angeles Plastic and Paper Carryout Bag Ordinance 1 (2012).

¹⁵ Surfrider Foundation, Plastic Bag Bans and Fees (last visited May 24, 2013) www.surfrider.org/pages/plastic-bag-bans-fees.

Appendix B

Draft Ordinance

Draft

ORDINANCE NO. 2013-

Adopted by the Sacramento City Council

[Date Adopted]

AN ORDINANCE ADDING CHAPTER 5.154 TO THE SACRAMENTO CITY CODE, RELATING TO THE REDUCTION OF SINGLE-USE PLASTIC AND PAPER BAGS

BE IT ENACTED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

Chapter 5.154 is added to the Sacramento City Code to read as follows:

Chapter 5.154 REDUCTION OF SINGLE-USE PLASTIC AND PAPER BAGS

5.154.010 Legislative findings and intent.

A. It is the intent of the city in enacting this chapter to reduce the use of single-use plastic bags and paper bags, and encourage the use of reusable bags by consumers and retailers.

B. California retailers distribute approximately 19 billion single-use plastic bags every year, equating to roughly 522 bags per person. It is estimated that less than five percent of these bags are recycled. These bags end up in landfills, rivers, bays, the ocean, and other natural environments. These bags can break down into small pieces that contaminate soils and waterways and that can be ingested by marine life, causing suffocation and the leeching of toxic materials into the water.

C. Due to their light weight, single-use plastic bags can easily become caught in the wind, contributing to litter and visual blight. Cleaning up these bags is challenging as they snag on trees and fences and become stuck in other places where they are difficult to retrieve.

D. While the city accepts single-use plastic bags as part of its curbside recycling program, handling these bags at the city's recycling centers is cumbersome. The bags clog and slow sorting machines. On average, the city must shut down its sorting machinery six times per day to remove tangled bags, resulting in additional cost to the city and the city's ratepayers.

E. By enacting this chapter, the city is mitigating the negative environmental and public health impacts resulting from the use of single-use plastic bags, reducing litter and visual blight caused by these bags, and minimizing the cost and inconvenience of handling single-use plastic bags at the city's recycling centers.

5.154.020 Definitions.

As used in this chapter, the following definitions apply:

“City manager” means the city manager or his or her designee.

“Customer” means any person purchasing goods from a store.

“Postconsumer recycled material” means material that is recycled after completing its intended end use and product-life cycle. Postconsumer recycled material does not include materials and by-product generated from, and commonly reused within, an original manufacturing and fabrication process.

“Single-use plastic bag” means any bag made of plastic derived from either petroleum or a biologically-based source, such as corn or other plant sources, which is provided to a customer at the point of sale. The term includes compostable and biodegradable bags. The term does not include reusable bags or bags without handles provided to a customer to:

1. Transport produce, bulk food, or meat from a produce, bulk food, or meat department within a store to the point of sale;
2. Hold a prescription medication dispensed from a pharmacy; or
3. Segregate food or merchandise that could be damaged or that could damage or contaminate other food or merchandise when placed together in one bag.

“Recycled paper bag” means a paper carryout bag that:

1. Is 100% recyclable;
2. Contains a minimum of 40% postconsumer recycled material;
3. Is capable of composting, consistent with the timeline and specifications of the American Society of Testing and Materials (ASTM) Standard D6400, as amended from time to time;
4. Displays the name of the manufacturer, the country where the bag was manufactured, and the percentage of postconsumer content the bag contains; and
5. Indicates that it is recyclable in a highly visible manner on the outside of the bag.

“Recyclable” means material that can be sorted, cleansed, and reconstituted using available recycling collection programs for the purpose of using the altered form in the manufacture of a new product.

“Reusable bag” means a bag with handles that is specifically designed and manufactured for multiple reuse and meets all of the following requirements:

1. Is made of cloth, washable woven fabric, or other durable material that is at least 2.25 mils thick;
2. Is machine washable or capable of being cleaned and disinfected;
3. Is capable of carrying a minimum of 22 pounds over a distance of at least 175 feet, 125 times;
4. Has a minimum volume capacity of 15 liters;
5. Does not contain lead, cadmium, or any other heavy metal in toxic amounts, as defined by applicable state and federal regulations for packaging or reusable bags; and
6. Has printed on the bag, or on a tag that is permanently affixed to the bag, the name of the manufacturer; the country where the bag was manufactured; a statement that the bag does not contain lead, cadmium, or any other heavy metal in toxic amounts; and the percentage of postconsumer recycled materials used, if any.

“Store” means any of the following retail establishments located within the city:

1. A supermarket, defined as a full-line, self-service retail store with gross annual sales of \$2,000,000, or more, and which sells a line of dry grocery, canned goods, or nonfood items and perishable items;
2. A store of at least 10,000 square feet of retail space that generates sales or use tax pursuant to the Bradley-Burns Uniform Local Sales and Use Tax Law (Part 1.5 (commencing with Section 7200) of Division 2 of the Revenue and Taxation Code) and that has a pharmacy licensed pursuant to Chapter 9 (commencing with Section 4000) of Division 2 of the Business and Professions Code; or
3. A convenience food store, foodmart, or other entity that is engaged in the retail sale of a limited line of goods, including milk, bread, soda, and snack foods, and that holds a Type 20 or 21 license issued by the Department of Alcoholic Beverage Control.

5.154.030 Ban on single-use plastic bags.

Stores shall not provide a single-use plastic bag to any customer.

5.154.040 Permitted bags.

Stores shall make available to customers only recycled paper bags or reusable bags for the purpose of carrying away goods or other materials from the point of sale, subject to the terms of this chapter. Nothing in this chapter prohibits customers from using bags of any type that they bring to the store themselves or from carrying away goods that are not placed in a bag in lieu of using bags provided by the store.

5.154.050 Store charge for recycled paper bags and reusable bags.

- A. Stores shall charge a minimum of ten cents for each recycled paper bag or reusable bag provided to customers at the point of sale. Stores shall not reimburse or credit a customer any portion of the fee, except as otherwise provided in this section.
- B. Notwithstanding subsection A, a store may provide a reusable bag, free of charge, to any customer during a limited-time, in-store promotional event. Such events shall not exceed a total of 60 days within any consecutive 12-month period.
- C. Notwithstanding subsections A and B, stores shall provide, free of charge, either reusable bags or recycled paper bags or both, at the store’s option, to any customer participating in either the California Special Supplement Food Program for Women, Infants, and Children pursuant to Article 2 (commencing with section 123275) of Chapter 1 of Part 2 of Division 106 of the California Health and Safety Code, or the Supplemental Food Program pursuant to Chapter 10 (commencing with section 15500) of Part 3 of Division 9 of the California Welfare and Institutions Code.
- D. Stores shall indicate on the customer receipt the number of recycled paper bags and reusable bags provided and the total amount charged for the bags.

5.154.060 Recordkeeping and inspection.

Stores shall keep complete and accurate records, for a minimum of three years from the date of sale, of the total number of recycled paper bags and reusable bags provided and

the total amount of monies collected for providing recycled paper bags. Upon request by the city, each store shall make these records available for inspection by the city, at no cost, during regular business hours. Each store shall make the records available at the store's retail establishment unless the city agrees to an alternative location or method of review. A responsible agent or officer of the store shall confirm that the information provided is accurate and complete. Providing false or incomplete information to the city is a violation of this section.

5.154.070 Violations.

- A. In addition to any other remedy allowed by law, any person who violates a provision of this chapter is subject to criminal sanctions, civil actions, and administrative penalties pursuant to chapter 1.28.
- B. Violations of this chapter are hereby declared to be a public nuisance.
- C. Any person who violates a provision of this chapter is liable for civil penalties of not less than \$250.00 or more than \$25,000.00 for each day the violation continues.
- D. Any person who violates a provision of this chapter is guilty of an infraction.
- E. All remedies prescribed under this chapter are cumulative and the election of one or more remedies does not bar the city from the pursuit of any other remedy for the purpose of enforcing the provisions hereof.

5.154.080 Operative date.

This chapter becomes effective January 1, 2015.

Appendix C

Proposed Ordinance Bag Use

Existing and Proposed Bag Use

Area	Population	Number of Plastic Bags Used per Person	Existing Total Plastic Bags Used Annually	Proposed Plastic Bags (5% Remain)	Proposed Paper Bags (30% Switch to Paper)	Proposed Reusable Bags (65% Switch to Reusable)	Replacement Bags for Secondary Plastic Bag Uses (40% of initial plastic bag use)	Total Bag Use After Ordinance
Sacramento	473,509	527	249,539,243	12,476,962	74,861,773	3,119,241	99,815,697	190,273,673
Compared to Existing Conditions				(237,062,281)	N/A	N/A	N/A	(59,265,570)

Total Proposed Carryout bags (plastic, paper and reusable)	190,273,673
% Reduction in carryout	24%
Total reduction in carryout bags	59,265,570

Appendix D

*Air Quality URBEMIS Results, Air Quality and
Greenhouse Gas Estimates
for the Proposed Ordinance*

AIR QUALITY

Existing Air Pollution Emissions

Area	Existing Total Plastic Bags Used Annually	Existing Ozone Emissions per year (kg)	Existing AA Emissions per year (kg)
Sacramento	249,539,243	5,739	270,501

Proposed Air Pollution Emissions by Bag Type

Carryout Bag Type	Proposed # of Bags Used per Year	Ozone Emissions (kg) per 1,000 bags	AA Emissions (kg) per 1,000 bags	Proposed Ozone Emissions per year (kg)	Proposed AA Emissions per year (kg)
Single Use Plastic	12,476,962	0.023	1.084	287	13,525
Recyclable Paper	74,861,773	0.03	2.06	2,246	154,215
Reusable	3,119,241	0.032	3.252	100	10,144
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	1.084	2296	108,200
Total Proposed Emissions in Sacramento				4,928	286,084
Existing Emissions in Sacramento				5,739	270,501
Net Change (Total minus Existing)				(811)	15,584
% Change				-14%	6%

Existing Estimated Truck Trips per Day

Carryout Bag Type	Existing Total Plastic Bags Used Annually	Number of Bags per Truck Load	Existing Truck Trips Per Year	Existing Truck Trips per Day
Single Use Plastic	249,539,243	2,080,000	120	0.33

**Estimated Truck Trips per Day
Following Implementation of the Proposed Ordinance**

Carryout Bag Type	Proposed # of Bags Used per Year	Number of Bags per Truck Load	Proposed Truck Trips Per Year	Proposed Truck Trips per Day
Single Use Plastic	12,476,962	2,080,000	6	0.02
Recyclable Paper	74,861,773	217,665	344	0.94
Reusable	3,119,241	108,862	29	0.08
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Total Proposed Truck Trips for Carryout Bags			427	1.17
Existing Truck Trips for Plastic Bags			120	0.33
Net New Truck Trips			307	0.84

Mobile Emissions - Proposed Ordinance

	Emissions (lbs/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Mobile Emissions: Proposed Ordinance	0.01	0.08	0.01	<0.01
Thresholds (lbs/day)	65	65	N/A	N/A
Threshold Exceeded?	No	No	N/A	N/A

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Users\mmaddox\AppData\Roaming\Urbemis\Version9a\Projects\Sacramento Bag Ordinance.urb924

Project Name: Sacramento Reusable Bag Ordinance

Project Location: Santa Barbara County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
Bag Ordinance Truck Trips	0.01	0.08	0.03	0.00	0.01	0.00	19.22
TOTALS (lbs/day, unmitigated)	0.01	0.08	0.03	0.00	0.01	0.00	19.22

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Bag Ordinance Truck Trips		0.84	1000 sq ft	1.00	0.84	4.77
					0.84	4.77

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.4	99.4	0.2
Light Truck < 3750 lbs	0.0	0.6	97.0	2.4

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	100.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	47.4	52.6	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	91.7	8.3

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	100.0	0.0	0.0			
% of Trips - Commercial (by land use)						
Bag Ordinance Truck Trips				2.0	1.0	97.0

GREENHOUSE GAS EMISSIONS

Existing GHG Emissions

Area	Population	Existing Total Plastic Bags Used Annually	Existing CO2E emissions per year (metric tons)	Existing CO2E per person per year (metric tons)
Sacramento	473,509	249,539,243	6,654	0.0141

Proposed GHG Emissions by Bag Type

Manufacture, Use and Disposal					
Carryout Bag Type	Proposed # of Bags Used per Year	GHG Impact Rate (metric tons CO2E)		CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)
Single Use Plastic	12,476,962	0.04 per 1,500 bags		333	0.0007
Recyclable Paper	74,861,773	0.1188 per 1,000 bags		8,894	0.0188
Reusable	3,119,241	5.24 per 1,000 bags		16,345	0.0345
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags		2662	0.0056
<i>Subtotal (Manufacturing, Use, and Disposal)</i>				28,233	0.0596
Washing					
Carryout Bag Type	# of Loads per Year	Electricity Use Per Load (kWh)	Total Electricity Use Per Year (kWh)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)
Reusable	1,970,047	3.825	7,535,428	1,777	0.0038
<i>Subtotal (Washing)</i>				1,777	0.0038
Total GHG Emissions from Proposed Ordinance				30,010	0.0634
Existing GHG Emissions				6,654	0.0141
Net Change (Total minus Existing)				23,355	0.0493

Assuming Electricity = 0.524 lbs CO₂ per kWh (<http://www.pge.com/about/environment/calculator/assumptions.shtml>)

Assuming all Cotton Reusable Bags

Appendix E

Utilities Calculations for the Proposed Ordinance

**Reusable Bag Ordinance EIR
Utilities Calculations**

Conversions/Assumptions	
liters to gallons	0.26417205
Kg to short tons	0.00110231
Gallons to acre-feet	3.06888E-06
Plastic Bag Size (liters)	14
Recyclable Paper Bag Size (liters)	20.48
Reusable bag size (liters)	37

Existing Conditions	
Number of plastic bags used in Sacramento per year	249,539,243
Number of plastic bags used in Sacramento per day	683,669

2011 Recycle Rate	
plastic bags	11.10%
paper bags	49.50%

Source: EPA, Municipal Solid Waste in the US, 2011 Facts and Figures

Proposed Ordinance	Per Day	Per Year
Number of plastic bags still in use (5% of existing)	34,183	12,476,962
Number of paper bags per day with 30% conversion	205,101	74,861,773
Number of reusable bags per day with 65% conversion	8,546	3,119,241
40% replacement plastic bags	273,468	99,815,697

Water Use - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	52.6
Liters water per bag per day	0.08
Liters water in Sacramento per day	55,939.33
Gallons per day in Sac	14,777.61
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.39

Wastewater - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	50.00
Liters water per bag per day	0.08
Liters water in Sacramento per day	53,174.27
Gallons per day in Sac	14,047.16
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.13

Water Use - Boustead	Existing Plastic Bag
Gallons per 1000 paper bags (1500 plastic)	58.00
Gallons per bag	0.04
Gallons water per day in Sac	26,435.21
Millions gallons per day (MGD) in Sac	0.03
MGD per year in Sac	9.65

Solid Waste Generation - Ecobilan	Existing Plastic Bag Use	Proposed Plastic Bag Use	Proposed Paper Bag Use	Proposed Reusable Bag Use	Proposed Replacement Bag Use
kg waste per 9000 liters groceries (w/EPA recycling)	4.23	4.23	6.13	--	4.23
kg waste per bag per day	0.0066	0.0066	0.0140	0.2	0.0066
kg waste in Sacramento per day	4,500.29	225.01	2,861.31	1709.17	1800.11
Tons per day	4.96	0.25	3.15	1.88	1.98
Tons per year	1,810.66	90.53	1,151.23	687.67	724.26
Total Increase from Ordinance (ton/day)	7.27	2.31		Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year	
Total Increase from Ordinance (tons/year)	2,653.70				
Net increase from Ordinance (tons/day)	2.31				
Net Increase from Ordinance (tons/year)	843.04				

Solid Waste Generation - Boustead	Existing Plastic Bag Use	Proposed Plastic Bag Use	Proposed Paper Bag Use	Proposed Reusable Bag Use	Proposed Replacement Bag Use
kg waste per 1000 paper bags (1500 plastic bags)	6.26	6.26	17.12	--	6.26
kg waste per bag per day	0.0042	0.0042	0.0171	0.2	0.0042
kg waste in Sacramento per day	2,852.52	142.63	3,511.22	1709.17	1141.01
Tons per day	3.14	0.16	3.87	1.88	1.26
Tons per year	1,147.69	57.38	1,412.72	687.67	459.08
Total Increase from Ordinance (ton/day)	7.17	4.03		Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year	
Total Increase from Ordinance (tons/year)	2,616.85				
Net Increase from Ordinance (tons/day)	4.03				
Net Increase from Ordinance (tons/year)	1,469.16				

Water Use From Reusable Bag Cleaning

Washing Method	# of Additional Reusable Bags from Proposed	# of Loads per Year	Gallons of Water per Wash Load	Total Water Use (gallons per year)	Total Water Use (AFY)	Total Water Use (gallons per day)
Machine Washed*	3,119,241	1,970,047	40	78,801,866	241.8	215,896
TOTAL				78,801,866	241.8	215,896

*Assumes all bags machine washed, assumes bags washed monthly and 19 bags per wash load

Appendix F

*Air Quality URBEMIS Results, Air Quality and
Greenhouse Gas Estimates, and Utilities Calculations for the
Alternatives*

ALTERNATIVE 2: Ban on Single Use Plastic Bags, \$0.25 fee for Paper Bags

Alternative 2 Bag Use

Type of Bag	Replacement Assumption	Existing	Proposed Ordinance	Alternative 2	Difference btwn Proposed Ord and Alt 2	% Change
Single-use Plastic	5%	249,539,243	12,476,962	12,476,962	0	0%
Recycled paper	6%		74,861,773	14,972,355	(59,889,418)	-400%
Reusable	89%		3,119,241	4,270,960	1,151,720	27%
Replacement Bags for Secondary Plastic Bag Uses	40%		99,815,697	99,815,697	0	0%
Total			190,273,673	131,535,974	(58,737,699)	-45%

Alternative 2 Air Pollution Emissions by Bag Type

Carryout Bag Type	Alt 2 # of Bags Used per Year	Ozone Emissions (kg) per 1,000 bags	AA Emissions (kg) per 1,000 bags	Alt 2 Ozone Emissions per year (kg)	Alt 2 AA Emissions per year (kg)
Single Use Plastic	12,476,962	0.023	1.084	287	13,525
Recyclable Paper	14,972,355	0.03	2.06	449	30,843
Reusable	4,270,960	0.032	3.252	137	13,889
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	1.084	2296	108,200
Total Alt 2 Emissions				3,169	166,457
Proposed Ordinance				4,928	286,084
Difference				(1,760)	(119,627)
% Change				-36%	-42%
Existing				5,739	270,501
Net Change (Total minus Existing)				(2,571)	(104,043)
% Change				-45%	-38%

ALTERNATIVE 2: Ban on Single Use Plastic Bags, \$0.25 fee for Paper Bags

Proposed GHG Emissions by Bag Type

Manufacture, Use and Disposal					
Carryout Bag Type	Alt 2 # of Bags Used per Year	GHG Impact Rate (metric tons CO2E)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)	
Single Use Plastic	12,476,962	0.04 per 1,500 bags	333	0.0007	
Recyclable Paper	14,972,355	0.1188 per 1,000 bags	1,779	0.0038	
Reusable	4,270,960	5.24 per 1,000 bags	22,380	0.0473	
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags	2,662	0.0056	
<i>Subtotal (Manufacturing, Use, and Disposal)</i>			27,153	0.0573	
Washing					
Carryout Bag Type	# of Loads per Year	Electricity Use Per Load (kWh)	Total Electricity Use Per Year (kWh)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)
Reusable	2,697,448	3.825	10,317,741	2,433	0.0051
<i>Subtotal (Washing)</i>				2,433	0.0051
Total GHG Emissions from Alternative 2				29,586	0.0625
Proposed Ordinance Total				30,010	0.0634
Difference				(424)	(0.0009)
% Change				-1%	-1%
Existing GHG Emissions				6,654	0.0141
Net Change of Alternative 2 (Alt 2 Total minus Existing)				22,932	0.0484
% Change				345%	345%

Assuming Electricity = 0.524 lbs CO₂ per kWh (<http://www.pge.com/about/environment/calculator/assumptions.shtml>)

Assuming all Cotton Reusable Bags

ALTERNATIVE 2: Ban on Single Use Plastic Bags, \$0.25 fee for Paper Bags

Estimated Alternative 2 Truck Trips

Carryout Bag Type	Alt 2 # of Bags Used per Year	Number of Bags per Truck Load	Alt 2 Truck Trips Per Year	Alt 2 Truck Trips per Day
Single Use Plastic	12,476,962	2,080,000	6	0.02
Recyclable Paper	14,972,355	217,665	69	0.19
Reusable	4,270,960	108,862	39	0.11
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Alternative 2 Total			162	0.44
Proposed Ordinance Total			427	1.17
Difference			(265)	(0.72)
Existing Total for Plastic Bags (without an Ordinance)			120	0.33
Net Change of Alternative 2 (Alternative 2 Total minus Existing Total)			42	0.12

Estimated Alt 2 Mobile Emissions

	Emissions (lbs/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Mobile Emissions: Proposed Ordinance	0.01	0.08	0.01	<0.01
Mobile Emissions: Alternative 2	<0.00	0.01	<0.00	<0.00
<i>Thresholds</i>	65	65	N/A	N/A
Threshold Exceeded?	No	No	N/A	N/A

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Users\mmaddox\AppData\Roaming\Urbemis\Version9a\Projects\Sacramento Bag Ordinance_Alt 2.urb924

Project Name: Sacramento Reusable Bag Ordinance - Alt 2

Project Location: Santa Barbara County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
Bag Ordinance Truck Trips	0.00	0.01	0.00	0.00	0.00	0.00	2.75
TOTALS (lbs/day, unmitigated)	0.00	0.01	0.00	0.00	0.00	0.00	2.75

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Bag Ordinance Truck Trips		0.12	1000 sq ft	1.00	0.12	0.68
					0.12	0.68

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.4	99.4	0.2
Light Truck < 3750 lbs	0.0	0.6	97.0	2.4

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	100.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	47.4	52.6	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	91.7	8.3

Travel Conditions

	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	100.0	0.0	0.0			
% of Trips - Commercial (by land use)						
Bag Ordinance Truck Trips				2.0	1.0	97.0

ALTERNATIVE 2: Ban on Single Use Plastic Bags, \$0.25 fee for Paper Bags Utilities Calculations

Conversions/Assumptions	
liters to gallons	0.26417205
Kg to short tons	0.00110231
Gallons to acre-feet	3.06888E-06
Plastic Bag Size (liters)	14
Recyclable Paper Bag Size (liters)	20.48
Reusable bag size (liters)	37

2011 Recycle Rate	
plastic bags	11.10%
paper bags	49.50%

Source: EPA, Municipal Solid Waste in the US, 2011 Facts and Figures

Existing Conditions	
Number of plastic bags used in Sacramento per year	249,539,243
Number of plastic bags used in Sacramento per day	683,669

Alternative 2	Per Day	Per Year
Number of plastic bags still in use (5% of existing)	34,183	12,476,962
Number of paper bags per day with 6% conversion	41,020	14,972,355
Number of reusable bags per day with 89% conversion	11,701	4,270,960
40% replacement plastic bags	273,468	99,815,697

Water Use - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	52.6
Liters water per bag per day	0.08
Liters water in Sacramento per day	55,939.33
Gallons per day in Sac	14,777.61
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.39

Wastewater - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	50.00
Liters water per bag per day	0.08
Liters water in Sacramento per day	53,174.27
Gallons per day in Sac	14,047.16
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.13

Water Use - Boustead	Existing Plastic Bag Use
Gallons per 1000 paper bags (1500 plastic bags)	58.00
Gallons per bag	0.04
Gallons water per day in Sac	26,435.21
Millions gallons per day (MGD) in Sac	0.03
MGD per year in Sac	9.65

Solid Waste Generation - Ecobilan	Existing Plastic Bag Use	Alt 2 Plastic Bag Use	Alt 2 Paper Bag Use	Alt 2 Reusable Bag Use	Alt 2 Replacement Bag Use
kg waste per 9000 liters groceries (w/EPA recycling)	4.23	4.23	6.13	--	4.23
kg waste per bag per day	0.0066	0.0066	0.0140	0.2	0.0066
kg waste in Sacramento per day	4,500.29	225.01	572.26	2340.25	1800.11
Tons per day	4.96	0.25	0.63	2.58	1.98
Tons per year	1,810.66	90.53	230.25	941.58	724.26
Total Increase from Alt 2 (ton/day)	5.44	Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year			
Total Increase from Alt 2 (tons/year)	1,986.63				
Change from Proposed Ordinance	(1.83)				
% Change	-25%				
Change from Existing Conditions	0.48				

Solid Waste Generation - Boustead	Existing Plastic Bag Use	Alt 2 Plastic Bag Use	Alt 2 Paper Bag Use	Alt 2 Reusable Bag Use	Alt 2 Replacement Bag Use
kg waste per 1000 paper bags (1500 plastic bags)	6.26	6.26	17.12	--	6.26
kg waste per bag per day	0.0042	0.0042	0.0171	0.2	0.0042
kg waste in Sacramento per day	2,852.52	142.63	702.24	2340.25	1141.01
Tons per day	3.14	0.16	0.77	2.58	1.26
Tons per year	1,147.69	57.38	282.54	941.58	459.08
Total Increase from Alt 2 (ton/day)	4.77	Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year			
Total Increase from Alt 2(tons/year)	1,740.59				
Change from Proposed Ordinance	(2.40)				
% Change	-33%				
Change from Existing Conditions	1.62				

Water Use From Reusable Bag Cleaning	# of Additional Reusable Bags from Proposed Ordinance that Require Washing ¹	# of Loads per Year	Gallons of Water per Wash Load	Total Water Use (gallons per year)	Total Water Use (AFY)	Total Water Use (gallons per day)
Machine Washed*	4,270,960	2,697,448	40	107,897,940	331.1	295,611
TOTAL				107,897,940	331.1	295,611
Change from Proposed Ordinance				29,096,074	89.3	79,715

ALTERNATIVE 3: Ban on Both Single-Use Plastic and Paper Bags

Alternative 3 Bag Replacement Assumptions

Type of Bag	Replacement Assumption	Existing	Proposed Ordinance	Alternative 3	Difference btwn Proposed Ord and Alt 3	% Change
Single-use Plastic	5%	249,539,243	12,476,962	12,476,962	0	0%
Recycled paper	0%		74,861,773	0	(74,861,773)	-100%
Reusable	95%		3,119,241	4,558,890	1,439,649	32%
Replacement Bags for Secondary Plastic Bag Uses	40%		99,815,697	99,815,697	0	0%
Total			190,273,673	116,851,549	(73,422,123)	-63%

Alternative 3 Air Pollution Emissions by Bag Type

Carryout Bag Type	Alt 3 # of Bags Used per Year	Ozone Emissions (kg) per 1,000 bags	AA Emissions (kg) per 1,000 bags	Alt 3 Ozone Emissions per year (kg)	Alt 3 AA Emissions per year (kg)
Single Use Plastic	12,476,962	0.023	1.084	287	13,525
Recyclable Paper	0	0.03	2.06	0	0
Reusable	4,558,890	0.032	3.252	146	14,826
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	1.084	2,296	108,200
Total Alt 2 Emissions				2,729	136,551
Proposed Ordinance				4,928	286,084
Difference				(2,200)	(149,534)
% Change				-45%	-52%
Existing				5,739	270,501
Net Change (Total minus Existing)				(3,011)	(133,950)
% Change				-52%	-50%

ALTERNATIVE 3: Ban on Both Single-Use Plastic and Paper Bags

Alt 3 GHG Emissions by Bag Type

Manufacture, Use and Disposal					
Carryout Bag Type	Proposed # of Bags Used per	GHG Impact Rate (metric tons CO2E)	CO ₂ E per year (metric tons)	CO ₂ E per Person	
Single Use Plastic	12,476,962	0.04 per 1,500 bags	333	0.0007	
Recyclable Paper	0	0.1188 per 1,000 bags	0	0.0000	
Reusable	4,558,890	5.24 per 1,000 bags	23,889	0.0505	
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags	2,662	0.0056	
<i>Subtotal (Manufacturing, Use, and Disposal)</i>			26,883	0.0568	
Washing					
Carryout Bag Type	# of Loads per Year	Electricity Use Per Load	Total Electricity Use Per Year	CO ₂ E per year (metric tons)	CO ₂ E per Person
Reusable	2,879,299	3.825	11,013,319	2,597	0.0055
<i>Subtotal (Washing)</i>				2,597	0.0055
Total GHG Emissions from Alternative 3				29,480	0.0623
Proposed Ordinance Total				30,010	0.0634
Difference				(530)	(0.0011)
% Change				-2%	-2%
Existing GHG Emissions				6,654	0.0141
Net Change (Total minus Existing)				22,826	0.0482
% Change				343%	343%

Assuming Electricity = 0.524 lbs CO₂ per kWh (<http://www.pge.com/about/environment/calculator/assumptions.shtml>)

Assuming all Cotton Reusable Bags

ALTERNATIVE 3: Ban on Both Single-Use Plastic and Paper Bags

Estimated Alternative 3 Truck Trips

Carryout Bag Type	Alt 3 # of Bags Used per Year	Number of Bags per Truck Load	Alt 3 Truck Trips Per Year	Alt 3 Truck Trips per Day
Single Use Plastic	12,476,962	2,080,000	6	0.02
Recyclable Paper	0	217,665	0	0.00
Reusable	4,558,890	108,862	42	0.11
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Alternative 3 Total			96	0.26
Proposed Ordinance Total			427	1.17
Difference			(331)	(0.91)
Existing Total for Plastic Bags (without an Ordinance)			120	0.33
Net Change of Alternative 3 (Alternative 3 Total minus Existing Total)			(24)	(0.07)

Estimated Alt 3 Mobile Emissions

	Emissions (lbs/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Mobile Emissions: Proposed Ordinance	0.01	0.08	0.01	<0.01
Mobile Emissions: Alternative 3	(<0.01)	(<0.01)	(<0.00)	(<0.00)
<i>Thresholds</i>	65	65	N/A	N/A
Threshold Exceeded?	No	No	N/A	N/A

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Users\mmaddox\AppData\Roaming\Urbemis\Version9a\Projects\Sacramento Bag Ordinance_Alt 3.urb924

Project Name: Sacramento Reusable Bag Ordinance - Alt 3

Project Location: Santa Barbara County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
Bag Ordinance Truck Trips	0.00	0.01	0.00	0.00	0.00	0.00	1.60
TOTALS (lbs/day, unmitigated)	0.00	0.01	0.00	0.00	0.00	0.00	1.60

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Bag Ordinance Truck Trips		0.07	1000 sq ft	1.00	0.07	0.40
					0.07	0.40

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.4	99.4	0.2
Light Truck < 3750 lbs	0.0	0.6	97.0	2.4

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	100.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	47.4	52.6	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	91.7	8.3

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	100.0	0.0	0.0			
% of Trips - Commercial (by land use)						
Bag Ordinance Truck Trips				2.0	1.0	97.0

ALTERNATIVE 3: Ban on Both Single-Use Plastic and Paper Bags

Utilities Calculations

Conversions/Assumptions	
liters to gallons	0.26417205
Kg to short tons	0.00110231
Gallons to acre-feet	3.06888E-06
Plastic Bag Size (liters)	14
Recyclable Paper Bag Size (liters)	20.48
Reusable bag size (liters)	37

2011 Recycle Rate	
plastic bags	11.10%
paper bags	49.50%

Source: EPA, Municipal Solid Waste in the US, 2011 Facts and Figures

Existing Conditions	
Number of plastic bags used in Sacramento per year	249,539,243
Number of plastic bags used in Sacramento per day	683,669

Alternative 3	Per Day	Per Year
Number of plastic bags still in use (5% of existing)	34,183	12,476,962
Number of paper bags per day with 0 conversion	0	0
Number of reusable bags per day with 95% conversion	12,490	4,558,890
40% replacement plastic bags	273,468	99,815,697

Water Use - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	52.6
Liters water per bag per day	0.08
Liters water in Sacramento per day	55,939.33
Gallons per day in Sac	14,777.61
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.39

Wastewater - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	50.00
Liters water per bag per day	0.08
Liters water in Sacramento per day	53,174.27
Gallons per day in Sac	14,047.16
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.13

Water Use - Boustead	Existing Plastic Bag Use
Gallons per 1000 paper bags (1500 plastic bags)	58.00
Gallons per bag	0.04
Gallons water per day in Sac	26,435.21
Millions gallons per day (MGD) in Sac	0.03
MGD per year in Sac	9.65

Solid Waste Generation - Ecobilan	Existing Plastic Bag Use	Alt 3 Plastic Bag Use	Alt 3 Paper Bag Use	Alt 3 Reusable Bag Use	Alt 3 Replacement Bag Use
kg waste per 9000 liters groceries (w/EPA recycling)	4.23	4.23	6.13	--	4.23
kg waste per bag per day	0.0066	0.0066	0.0140	0.2	0.0066
kg waste in Sacramento per day	4,500.29	225.01	-	2498.02	1800.11
Tons per day	4.96	0.25	-	2.75	1.98
Tons per year	1,810.66	90.53	-	1,005.06	724.26
Total Increase from Ordinance (ton/day)	4.99	Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year			
Total Increase from Ordinance (tons/year)	1,819.86				
Change from Proposed Ordinance	(2.28)				
% Change	-31%				
Change from Existing Conditions	0.03				

Solid Waste Generation - Boustead	Existing Plastic Bag Use	Alt 3 Plastic Bag Use	Alt 3 Paper Bag Use	Alt 3 Reusable Bag Use	Alt 3 Replacement Bag Use
kg waste per 1000 paper bags (1500 plastic bags)	6.26	6.26	17.12	--	6.26
kg waste per bag per day	0.0042	0.0042	0.0171	0.2	0.0042
kg waste in Sacramento per day	2,852.52	142.63	-	2498.02	1141.01
Tons per day	3.14	0.16	-	2.75	1.26
Tons per year	1,147.69	57.38	-	1,005.06	459.08
Total Increase from Ordinance (ton/day)	4.17	Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year			
Total Increase from Ordinance (tons/year)	1,521.52				
Change from Proposed Ordinance	(3.00)				
% Change	-42%				
Change from Existing Conditions	1.02				

Water Use From Reusable Bag Cleaning	# of Additional Reusable Bags from Proposed Ordinance that Require Washing ¹	# of Loads per Year	Gallons of Water per Wash Load	Total Water Use (gallons per year)	Total Water Use (AFY)	Total Water Use (gallons per day)
Machine Washed*	4,558,890	2,879,299	40	115,171,958	353.4	315,540
TOTAL				115,171,958	353.4	315,540
Change from Proposed Ordinance				36,370,092	111.6	99,644

ALTERNATIVE 4: Ban on Single-use Plastic Bags, \$0.10 fee on Paper Bags at all retail establishments

Alternative 4 Bag Replacement Assumptions

Type of Bag	Replacement Assumption	Existing	Proposed Ordinance	Alternative 4	Difference btwn Proposed Ord and Alt 4	% Change
Single-use Plastic	0%	249,539,243	12,476,962	0	(12,476,962)	-100%
Recycled paper	31.75%		74,861,773	79,228,710	4,366,937	6%
Reusable	68.25%		3,119,241	3,275,203	155,962	5%
Replacement Bags for Secondary Plastic Bag Uses	40%		99,815,697	99,815,697	0	0%
Total			190,273,673	182,319,609	(7,954,063)	-4%

Alternative 4 Air Pollution Emissions by Bag Type

Carryout Bag Type	Alt 4 # of Bags Used per Year	Ozone Emissions (kg) per 1,000 bags	AA Emissions (kg) per 1,000 bags	Alt 4 Ozone Emissions per year (kg)	Alt 4AA Emissions per year (kg)
Single Use Plastic	0	0.023	1.084	0	0
Recyclable Paper	79,228,710	0.03	2.06	2,377	163,211
Reusable	3,275,203	0.032	3.252	105	10,651
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.023	1.084	2,296	108,200
Total Alt 4 Emissions				4,777	282,062
Proposed Ordinance				4,928	286,084
Difference				(151)	(4,022)
% Change				-3%	-1%
Existing				5,739	270,501
Net Change (Total minus Existing)				(962)	11,562
% Change				-60%	-60%

ALTERNATIVE 4: Ban on Single-use Plastic Bags, \$0.10 fee on Paper Bags at all retail establishments

Alt 4 GHG Emissions by Bag Type

Manufacture, Use and Disposal					
Carryout Bag Type	Proposed # of Bags Used per Year	GHG Impact Rate (metric tons CO2E)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)	
Single Use Plastic	0	0.04 per 1,500 bags	0	0.0000	
Recyclable Paper	79,228,710	0.1188 per 1,000 bags	9,412	0.0199	
Reusable	3,275,203	5.24 per 1,000 bags	17,162	0.0362	
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	0.04 per 1,500 bags	2,662	0.0056	
<i>Subtotal (Manufacturing, Use, and Disposal)</i>			29,236	0.0617	
Washing					
Carryout Bag Type	# of Loads per Year	Electricity Use Per Load (kWh)	Total Electricity Use Per Year (kWh)	CO ₂ E per year (metric tons)	CO ₂ E per Person (metric tons)
Reusable	2,068,549	3.825	7,912,200	1,866	0.0039
<i>Subtotal (Washing)</i>				1,866	0.0039
Total GHG Emissions from Alternative 4				31,102	0.0657
Proposed Ordinance Total				30,010	0.0634
Difference				1,092	0.0023
% Change				4%	4%
Existing GHG Emissions				6,654	0.0141
Net Change (Total minus Existing)				24,448	0.0516
% Change				367%	367%

Assuming Electricity = 0.524 lbs CO₂ per kWh (<http://www.pge.com/about/environment/calculator/assumptions.shtml>)

Assuming all Cotton Reusable Bags

ALTERNATIVE 4: Ban on Single-use Plastic Bags, \$0.10 fee on Paper Bags at all retail establishments

Estimated Alternative 4 Truck Trips

Carryout Bag Type	Alt 4 # of Bags Used per Year	Number of Bags per Truck Load	Alt 4 Truck Trips Per Year	Alt 4 Truck Trips per Day
Single Use Plastic	0	2,080,000	0	0.00
Recyclable Paper	79,228,710	217,665	364	1.00
Reusable	3,275,203	108,862	30	0.08
Replacement Bags for Secondary Plastic Bag Uses	99,815,697	2,080,000	48	0.13
Alternative 4 Total			442	1.21
Proposed Ordinance Total			427	1.17
Difference			15	0.04
Existing Total for Plastic Bags (without an Ordinance)			120	0.33
Net Change of Alternative 4 (Alternative 4 Total minus Existing Total)			322	0.88

Estimated Alt 4 Mobile Emissions

	Emissions (lbs/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Mobile Emissions: Proposed Ordinance	0.01	0.08	0.01	<0.01
Mobile Emissions: Alternative 4	0.01	0.08	0.01	<0.01
<i>Thresholds</i>	<i>65</i>	<i>65</i>	<i>N/A</i>	<i>N/A</i>
Threshold Exceeded?	No	No	N/A	N/A

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Users\mmaddox\AppData\Roaming\Urbemis\Version9a\Projects\Sacramento Bag Ordinance_Alt 4.urb924

Project Name: Sacramento Reusable Bag Ordinance - Alt 4

Project Location: Santa Barbara County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

<u>Source</u>	ROG	NOX	CO	SO2	PM10	PM25	CO2
Bag Ordinance Truck Trips	0.01	0.08	0.03	0.00	0.01	0.00	20.14
TOTALS (lbs/day, unmitigated)	0.01	0.08	0.03	0.00	0.01	0.00	20.14

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Bag Ordinance Truck Trips		0.88	1000 sq ft	1.00	0.88	5.00
					0.88	5.00

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.4	99.4	0.2
Light Truck < 3750 lbs	0.0	0.6	97.0	2.4

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	0.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	0.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	73.3	26.7
Lite-Heavy Truck 10,001-14,000 lbs	0.0	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.0	0.0	18.2	81.8
Heavy-Heavy Truck 33,001-60,000 lbs	100.0	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	47.4	52.6	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	91.7	8.3

Travel Conditions

	Residential			Commuter	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	9.9	5.6	6.1	5.7	4.1	5.7
Rural Trip Length (miles)	15.0	15.0	15.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	100.0	0.0	0.0			
% of Trips - Commercial (by land use)						
Bag Ordinance Truck Trips				2.0	1.0	97.0

ALTERNATIVE 4: Ban on Single-use Plastic Bags, \$0.10 fee on Paper Bags at all retail establishments
Utilities Calculations

Conversions/Assumptions	
liters to gallons	0.26417205
Kg to short tons	0.00110231
Gallons to acre-feet	3.06888E-06
Plastic Bag Size (liters)	14
Recyclable Paper Bag Size (liters)	20.48
Reusable bag size (liters)	37

Existing Conditions	
Number of plastic bags used in Sacramento per year	249,539,243
Number of plastic bags used in Sacramento per day	683,669

2011 Recycle Rate	
plastic bags	11.10%
paper bags	49.50%

Source: EPA, Municipal Solid Waste in the US, 2011 Facts and Figures

Alternative 4	Per Day	Per Year
Number of plastic bags still in use (0)	0	0
Number of paper bags per day with 31.75% conversion	58,112	21,210,836
Number of reusable bags per day with 68.25% conversion	12,030	4,390,931
40% replacement plastic bags	273,468	99,815,697

Water Use - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	52.6
Liters water per bag per day	0.08
Liters water in Sacramento per day	55,939.33
Gallons per day in Sac	14,777.61
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.39

Wastewater - Ecobilan	Existing Plastic Bag Use
Liters water per 9000 liters groceries	50.00
Liters water per bag per day	0.08
Liters water in Sacramento per day	53,174.27
Gallons per day in Sac	14,047.16
Millions gallons per day (MGD) in Sac	0.01
MGD per year in Sac	5.13

Water Use - Boustead	Existing Plastic Bag
Gallons per 1000 paper bags (1500 plastic)	58.00
Gallons per bag	0.04
Gallons water per day in Sac	26,435.21
Millions gallons per day (MGD) in Sac	0.03
MGD per year in Sac	9.65

Solid Waste Generation - Ecobilan	Existing Plastic Bag Use	Alt 4 Plastic Bag Use	Alt 4 Paper Bag Use	Alt 4 Reusable Bag Use	Alt 4 Replacement Bag Use
kg waste per 9000 liters groceries (w/EPA recycling)	4.23	4.23	6.13	--	4.23
kg waste per bag per day	0.0066	0.0066	0.0140	0.2	0.0066
kg waste in Sacramento per day	4,500.29	-	810.70	2405.99	1800.11
Tons per day	4.96	-	0.89	2.65	1.98
Tons per year	1,810.66	-	326.18	968.03	724.26
Total Increase from Ordinance (ton/day)	5.53	Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year			
Total Increase from Ordinance (tons/year)	2,018.48				
Change from Proposed Ordinance	(1.74)				
% Change	-24%				
Change from Existing Conditions	0.57				

Solid Waste Generation - Boustead	Existing Plastic Bag Use	Alt 4 Plastic Bag Use	Alt 4 Paper Bag Use	Alt 4 Reusable Bag Use	Alt 4 Replacement Bag Use
kg waste per 1000 paper bags (1500 plastic bags)	6.26	6.26	17.12	--	6.26
kg waste per bag per day	0.0042	0.0042	0.0171	0.2	0.0042
kg waste in Sacramento per day	2,852.52	-	994.85	2405.99	1141.01
Tons per day	3.14	-	1.10	2.65	1.26
Tons per year	1,147.69	-	400.27	968.03	459.08
Total Increase from Ordinance (ton/day)	5.01	Note: reusable bag numbers conservatively assumed all cotton bags and all bags thrown out each year			
Total Increase from Ordinance (tons/year)	1,827.38				
Change from Proposed Ordinance	(2.16)				
% Change	-30%				
Change from Existing Conditions	1.86				

Water Use From Reusable Bag Cleaning	# of Additional Reusable Bags from Proposed	# of Loads per Year	Gallons of Water per Wash Load	Total Water Use (gallons per year)	Total Water Use (AFY)	Total Water Use (gallons per day)
Machine Washed*	4,390,931	2,773,220	40	110,928,781	340.4	303,914
TOTAL				110,928,781	340.4	303,914
Change from Proposed Ordinance				32,126,915	98.6	88,019