Addendum to the Environmental Impact Report For the Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (SCH No. 2009111104)

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SECTION 1.0
INTRODUCTION

This Addendum to the Environmental Impact Report (EIR) has been prepared by the City of Pasadena (City) to assess the environmental consequences of the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance).This document is prepared as an addendum to the previously certified EIR that was adopted by the County of Los Angeles (County) Board of Supervisors on November 16, 2010 (SCH #2009111104).[1] As one of the 88 incorporated cities within the County, the City proposes an ordinance to ban plastic carryout bags consistent with the ordinance analyzed in the County's Final EIR and adopted by the County Board of Supervisors. The addendum is required to address the possible environmental effects associated with adoption of such an ordinance within the City. The proposed ordinance would ban the issuance of plastic carryout bags at all supermarkets and other grocery stores, pharmacies, drug stores, convenience food stores, food marts, liquor stores, City -sponsored events, events held at City facilities, events on City property, and farmers markets, and would place a 10-cent charge on the issuance of paper carryout bags. The ordinance would also require the affected stores to provide or make available to a customer only recyclable paper carryout bags or reusable bags.

This document is prepared in accordance with the State California Environmental Quality Act (CEQA) Guidelines Section 15164, which requires that an Addendum to an EIR be prepared when changes to an approved project require minor modifications to the previous EIR rather than major changes due to the potential for new or substantially more adverse environmental effects. CEQA requires that an EIR be prepared for projects that may have a significant effect on the environment.[2] If changes to a project are necessary after an EIR has been certified and are not considered significant,[3] CEQA states that an Addendum to an EIR can be prepared to document minor technical changes or additions to a previously approved project.[4]

The project analyzed in the certified EIR included an ordinance to ban the issuance of plastic carryout bags at certain stores within the unincorporated areas of the County. The proposed ordinance for which this Addendum to the EIR is prepared proposes a similar ordinance to ban the issuance of plastic carryout bags and place a 10-cent charge on the issuance of paper carryout bags in the City. The City is one of the 88 incorporated cities that were included in the EIR analysis for the County's ordinance. The City would adopt an ordinance similar to the County's plastic carryout bag ordinance with a few minor changes specific to Pasadena. These minor revisions would cause no new significant environmental effects beyond those identified in the County's certified EIR. Since the proposed ordinance does not require substantial changes to the County's ordinance, major revisions of the EIR analysis are not warranted. As such, a subsequent EIR pursuant to Section 15162 of the State CEQA Guidelines would not be warranted and an addendum is the appropriate environmental document under CEQA. The City is the lead agency for the refined project pursuant to CEQA.

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] *California Public Resources Code*, Division 13, Section 21002.1.

[3] *California Code of Regulations*, Title 14, Chapter 3, Article 11, Section 15162.

[4] *California Code of Regulations*, Title 14, Chapter 3, Article 11, Section 151624(a).

1.1 PURPOSE AND SCOPE OF THE ADDENDUM TO THE EIR

The City has prepared this Addendum to the EIR to demonstrate that the refined project satisfies the requirements contained in Section 15164 of the State CEQA Guidelines for the use of an Addendum to an EIR and does not require the preparation of a Subsequent or Supplement to an EIR pursuant to Sections 15162 and 15163, respectively, of the State CEQA Guidelines due to the absence of new or substantially more adverse significant impacts than those analyzed in the certified EIR.

This Addendum to the EIR neither controls nor determines the ultimate decision for approval of the refinement of the approved project. The information presented in this Addendum to the EIR will be considered by the City to make findings concerning the modifications to the certified EIR.[5]

[5] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

SECTION 2.0
PROJECT DESCRIPTION

Consistent with the requirements of Section 15124 of the State California Environmental Quality Act (CEQA) Guidelines,[1] this section of the Addendum to the Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County[2] describes the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance), including the location and boundaries of the proposed ordinance; a brief characterization of the existing conditions of bag usage within the City of Pasadena (City); a statement of objectives for the proposed ordinance; and a general delineation of the technical, economic, and environmental characteristics of the proposed ordinance. The "project," as defined by CEQA, being considered by the City consists of adoption of an ordinance to ban the issuance of plastic carryout bags and place a charge on the issuance of paper carryout bags within the City.

2.1 PROPOSED PROJECT LOCATION

The proposed ordinance would affect an area of approximately 23.1 square miles encompassing the incorporated City of Pasadena within the County of Los Angeles (County), California. The affected area is bordered by the communities of Arcadia, Altadena, Eagle Rock, Highland Park, La Cañada Flintridge, San Gabriel, San Marino, Sierra Madre, South Pasadena, and Temple City (Figure 2.1-1, *Project Location Map).*

2.2 BACKGROUND

2.2.1 Contribution of Plastic Carryout Bags to Litter Stream

The California Integrated Waste Management Board (CIWMB) estimates that plastic grocery and other merchandise bags make up 0.4 percent of California's overall disposed waste stream by weight,[3] but have been shown to make a more significant contribution to litter, particularly within catch basins. The City of San Francisco Litter Audit in 2008 showed that plastic materials were the second most prevalent form of litter, with 4.7 percent of all litter collected being unidentified miscellaneous plastic litter and branded plastic retail bags constituting 0.6 percent of the total number of large litter items collected.[4] As an example of the prevalence of plastic bag litter found in catch basins, plastic bags constituted 25 percent by weight and 19 percent by volume of the trash collected from 30 catch basins in the Los Angeles River during the Great Los Angeles River Clean Up.[5] Results of a California Department of Transportation (Caltrans) study of catch basins alongside freeways in Los Angeles indicated that plastic film composed 7 percent by mass and 12

[1] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[2] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[3] California Environmental Protection Agency, Integrated Waste Management Board. December 2004. "Table ES-3: Composition of California's Overall Disposed Waste Stream by Material Type, 2003." *Contractor's Report to the Board: Statewide Waste Characterization* Study, p. 6. Produced by: Cascadia Consulting Group, Inc. Berkeley, CA. Available at: http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1097

[4] City of San Francisco, San Francisco Environment Department. 2008. *The City of San Francisco Streets Litter Re-audit*. Prepared by: HDR; Brown, Vence & Associates, Inc.; and MGM Management Environmental and Management Service. San Francisco, CA. Available at: http://www.sfenvironment.org/downloads/library/2008_litter_audit.pdf

[5] City of Los Angeles. 18 June 2004. *Characterization of Urban Litter*, pp. 1–5. Prepared by: Ad Hoc Committee on Los Angeles River and Watershed Protection Division. Los Angeles, CA.

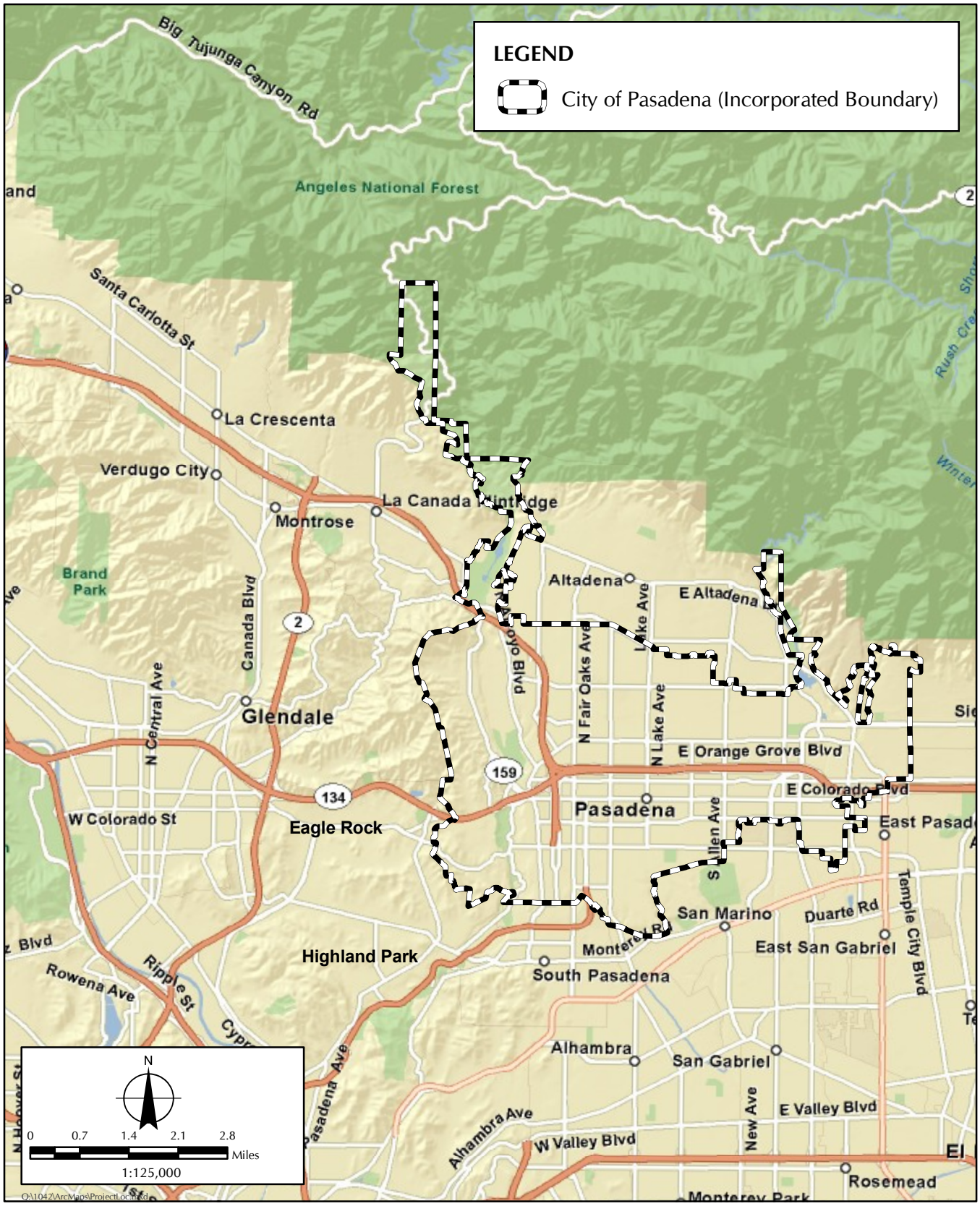

FIGURE 2.1-1

Project Location Map

percent by volume of the total trash collected.[6] According to research conducted by the Los Angeles County Department of Public Works (LACDPW), approximately 6 billion plastic carryout bags are consumed in the County each year, which is equivalent to approximately 1,600 bags per household per year.[7,8,9] It is estimated that the City of Pasadena uses 75 million plastic bags per year.[10] Public agencies in California spend more than $375 million each year for litter prevention, cleanup, and disposal.[11] The County of Los Angeles Flood Control District alone spends more than $18 million annually for prevention, cleanup, and enforcement efforts to reduce litter.[12,13,14,15] For 2008–2009, the most recent year available, the County of Los Angeles Flood Control District spent over $24 million on these activities ($1.9 million on maintenance of structural and treatment control best management practices (BMPs), $9.3 million on municipal street cleaning, $1.9 million on catch basin cleaning, $9.6 million on trash collection and recycling, and $1.3 million on capital costs).[16] Survey data obtained by the County from employees of solid waste facilities within the County conclusively indicated that plastic carryout bags pose serious operational problems for landfills.[17] All six survey respondents stated that plastic bags cause serious litter issues due to their lightweight nature and propensity to become airborne.[18] Each survey respondent indicated that it

[6] Combs, Suzanne, John Johnston, Gary Lippner, David Marx, and Kimberly Walter. 2001. *Results of the Caltrans Litter Management Pilot Study*. Sacramento, CA: California Department of Transportation. Available at: http://www.owp.csus.edu/research/papers/papers/PP020.pdf

[7] California Integrated Waste Management Board. 12 June 2007. Board Meeting Agenda, Resolution: Agenda Item 14. Sacramento, CA.

[8] U.S. Census Bureau. 2000. "State & County Quick Facts: Los Angeles County, California." Available at: http://quickfacts.census.gov/qfd/states/06/06037.html

[9] Average of slightly fewer than three persons per household

[10] City of Pasadena. 19 July 2011. Letter to the Environmental Advisory Commission from Stephanie Dewolfe, Deputy Director of Planning Re: "Recommendation to Establish an Ordinance Prohibiting the Distribution of Single-use Plastic Carryout Bags for Consumer Use and Establishing a Charge on Single-use Paper Carryout Bags."

[11] California Department of Transportation. Accessed on: 18 August 2011. "Facts at a Glance." *Don't Trash California*. Available at: http://www.donttrashcalifornia.info/pdf/Statistics.pdf

[12] Los Angeles County Municipal Storm Water Permit (Order 01-182) Individual Annual Report Form. October 2009. Available at: http://dpw.lacounty.gov/wmd/NPDESRSA/AnnualReport/2009/Appendix%20D%20-%20Principal%20Permittee%20Annual%20Report/Principal%20Permittee%20Annual%20Report.pdf

[13] Los Angeles County Municipal Storm Water Permit (Order 01-182) Individual Annual Report Form. October 2008. Available at: http://dpw.lacounty.gov/wmd/NPDESRSA/AnnualReport/2008/Appendix%20D%20-%20Principal%20Permittee%20Annual%20Report/Principal%20Permittee%20&%20County%20Annual%20Report%20FY07-08.pdf

[14] Los Angeles County Municipal Storm Water Permit (Order 01-182) Individual Annual Report Form. October 2007. Available at: http://dpw.lacounty.gov/wmd/NPDESRSA/AnnualReport/2007/Appendix%20D%20-%20Principal%20Permittee%20Annual%20Report/Annual%20Rpt%2006-07.pdf

[15] Los Angeles County Municipal Storm Water Permit (Order 01-182) Individual Annual Report Form. October 2006. Available at: http://dpw.lacounty.gov/wmd/NPDESRSA/AnnualReport/2006/Appendix%20D%20-%20Principal%20Permittee%20Annual%20Report/PrincipalPermittee_AnnualReportFY05-06.pdf

[16] Los Angeles County Municipal Storm Water Permit (Order 01-182) Individual Annual Report Form. October 2009. Available at: http://dpw.lacounty.gov/wmd/NPDESRSA/AnnualReport/2009/Appendix%20D%20-%20Principal%20Permittee%20Annual%20Report/Principal%20Permittee%20Annual%20Report.pdf

[17] County of Los Angeles Department of Public Works. 2007. Survey – All Solid Waste Facilities: Plastic Bag Analysis for the County of Los Angeles. Los Angeles, CA.

[18] County of Los Angeles Department of Public Works. 2007. Survey – All Solid Waste Facilities: Plastic Bag Analysis for the County of Los Angeles. Los Angeles, CA.

was costly and time consuming to provide clean-up crews to address the plastic bag litter problem in neighborhoods in the County unincorporated and incorporated areas adjacent to landfill.[19]

2.2.2 Definitions

For the purposes of this Addendum to the EIR, the following terms are defined as follows:

- *Reusable bag(s):* a bag with handles that is specifically designed and manufactured for multiple reuse and meets all of the following requirements: (1) has a minimum lifetime of 125 uses, which means the capability of carrying a minimum of 22 pounds 125 times over a distance of at least 175 feet; (2) has a minimum volume of 15 liters; (3) is machine washable or is made from a material that can be cleaned or disinfected; (4) does not contain lead, cadmium, or any other heavy metal in toxic amounts; (5) has printed on the bag, or on a tag that is permanently affixed to the bag, the name of the manufacturer, the location (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 material used, if any; and (6) if made of plastic, is a minimum of at least 2.25 mils thick.
- *Paper carryout bag(s)*: a carryout bag made of paper that is provided by a store to a customer at the point of sale and can contain some percentage of post-consumer recycled content. Can be interchangeably referred to as a recyclable paper carryout bag.
- *Plastic carryout bag(s)*: any bag made predominantly 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. ″Plastic carryout bag″ includes compostable and biodegradable bags but does not include reusable bags, produce bags, or product bags.
- *Recyclable paper carryout bag(s)*: a paper bag that meets all of the following requirements: (1) contains no old growth fiber, (2) is one hundred percent (100%) recyclable overall and contains a minimum of forty percent (40%) post-consumer recycled material; (3) is capable of composting, consistent with the timeline and specifications of the American Society of Testing and Materials (ASTM) Standard D6400; (4) is accepted for recycling in curbside programs in the City; (5) has printed on the bag the name of the manufacturer, the location (country) where the bag was manufactured, and the percentage of postconsumer recycled material used; and (6) displays the word ″Recyclable″ in a highly visible manner on the outside of the bag.

2.2.3 Carryout Bag Bans and Fees

There are currently numerous city and county governments in California that have imposed bans on the issuance of plastic carryout bags, including the City and County of San Francisco, City of Malibu, City of Palo Alto, City of Manhattan Beach, City of Calabasas, City of Santa Monica, County of Los Angeles, and Town of Fairfax. In addition, there is a plastic carryout bag fee ordinance in effect in the District of Columbia, and ordinances to ban the issuance of plastic

[19] County of Los Angeles Department of Public Works. 2007. Survey – All Solid Waste Facilities: Plastic Bag Analysis for the County of Los Angeles. Los Angeles, CA.

carryout bags in effect in Marshall County, Iowa; Telluride, Colorado; and the Outer Banks of North Carolina.

Jurisdictions outside of the United States that have banned or placed fees on the issuance of plastic carryout bags include Ireland, Switzerland, South Africa, Taiwan, Bangladesh, Belgium, China, and American Samoa.

2.2.4 Litigation History

Numerous city and county governments in California, including the City of Oakland, City of Manhattan Beach, City of Palo Alto, Santa Clara County, City of San Diego, City of Morgan Hill, City of Mountain View, City of San Jose, Marin County, City of Encinitas, and City of Long Beach have attempted to impose bans on plastic carryout bags but have been challenged by some members of the plastic bag industry.

On August 12, 2008, the Save the Plastic Bag Coalition filed a lawsuit against the City of Manhattan Beach for adopting an ordinance to ban the issuance of plastic carryout bags without first preparing an EIR.[20] On February 20, 2009, the Los Angeles Superior Court ruled that the City of Manhattan Beach should have prepared an EIR for the ordinance.[21] The trial court found that substantial evidence supported a fair argument that the ordinance may cause increased use of paper bags, which may have a significant negative impact on the environment, thus requiring an EIR for further evaluation of the potential environmental impacts.[22] On January 27, 2010, the Court of Appeal affirmed the trial court decision and vacated the ordinance and disallowed reenactment, pending preparation of an EIR.[23] On July 14, 2011, the California Supreme Court overturned the decision and ruled in the case of Manhattan Beach that "a negative declaration was sufficient to comply with the requirements of the California Environmental Quality Act." The ordinance was classified by the City of Manhattan Beach as "[a]n activity directly undertaken by [a] public agency," and was therefore classified as a project under section 21065, subdivision (a) of CEQA. The Supreme Court stated that the legal "analysis would be different for a ban on plastic bags by a larger governmental body, which might precipitate a significant increase in paper bag consumption."

[20] Law Offices of Stephen L. Joseph, Esq., Tiburon, California. 12 December 2008. Action filed: 12 August 2008. Petitioner's Notice of Motion and Motion for Preliminary Injunction Staying Plastic Bag Ordinance; Declarations of Stephen L. Joseph, Peter M. Grande and Catherine Brown. Save the Plastic Bag Coalition v. City of Manhattan Beach, City Council of Manhattan Beach. Case No. BS116362. On behalf of Save the Plastic Bag Coalition, San Francisco, CA. Available at: http://www.savetheplasticbag.com/UploadedFiles/STPB%20mot%20for%20preliminary%20inj%20against%20Manhattan%20Beach.pdf

[21] Superior Court of California, County of Los Angeles. Hearing on Petition for Writ of Mandate. Save the Plastic Bag Coalition v. City of Manhattan Beach et al. Case No. BS116362. Ruling: 20 February 2009. Available at: http://www.savetheplasticbag.com/UploadedFiles/Manhattan%20Beach%20ruling.pdf

[22] Court of Appeal of the State of California, Second Appellate District, Division Five. Decision: 27 January 2009. Appeal from a judgment of the Superior Court of Los Angeles County, David P. Yaffe, Judge. Save the Plastic Bag Coalition v. City of Manhattan Beach. Available at: http://www.savetheplasticbag.com/UploadedFiles/Manhattan%20Beach%20appeal%20decision.pdf

[23] Court of Appeal of the State of California, Second Appellate District, Division Five. Decision: 27 January 2009. Appeal from a judgment of the Superior Court of Los Angeles County, David P. Yaffe, Judge. Save the Plastic Bag Coalition v. City of Manhattan Beach. Available at: http://www.savetheplasticbag.com/UploadedFiles/Manhattan%20Beach%20appeal%20decision.pdf

2.3 EXISTING CONDITIONS

2.3.1 Plastic Carryout Bags

In 1977, supermarkets began offering to customers plastic carryout bags designed for single use.[24,25] By 1996, four out of every five grocery stores were using plastic carryout bags.[26,27] Plastic carryout bags have been found to contribute substantially to the litter stream and to have adverse effects on marine wildlife.[28,29,30,31,32,33] The prevalence of litter from plastic bags in the urban environment also compromises the efficiency of systems designed to channel storm water runoff. Furthermore, plastic bag litter leads to increased clean-up costs for the City, the County, Caltrans, and other public agencies, and are ultimately paid by tax payers.[34,35,36] The presence of litter also contributes to degradation of the environment and of the quality of life for residents and visitors.[37] In particular, the prevalence of plastic bag litter in the storm water system and coastal waterways hampers the ability of, and exacerbates the cost to, local agencies to comply with the National Pollution Discharge Elimination System (NPDES) and total maximum daily loads (TMDL) limits for trash, pursuant to the federal Clean Water Act (CWA).[38,39]

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[24] SPI: The Plastics Industry Trade Association. 2007. Web site. Available at: http://www.plasticsindustry.org/

[25] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[26] SPI: The Plastics Industry Trade Association. 2007. Web site. Available at: http://www.plasticsindustry.org/

[27] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[28] United Nations Environment Programme. April 2009. *Marine Litter: A Global Challenge*. Nairobi, Kenya. Available at : http://www.unep.org/regionalseas/marinelitter/publications/docs/Marine_Litter_A_Global_Challenge.pdf

[29] California Integrated Waste Management Board. 12 June 2007. Board Meeting Agenda, Resolution: Agenda Item 14. Sacramento, CA.

[30] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[31] Bjorndal, K. *et. al*. 1994. "Ingestion of marine debris by juvenile sea turtles in coastal Florida habitats." *Marine Pollution Bulletin, 28* (3). Available at: http://accstr.ufl.edu/publications/BjorndalEtAl_1994_IngestionOfMarineDebrisByJuvenileSeaTurtlesInCostalFlorida.pdf

[32] Okeanos Ocean Research Foundation. 1989. *Marine Mammal and Sea Turtle Encounters with Marine Debris in the New York Bight and the Northeast Atlantic*. Available at: http://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-154_P562.PDF

[33] Gomerčić, H. et. al. 2006. "Biological aspects of Cuvier's beaked whale (*Ziphius cavirostris*) recorded in the Croatian part of the Adriatic Sea." In *European Journal of Wildlife Research*. DOI 10.1007/s10344-006-0032-8.

[34] California Integrated Waste Management Board. 12 June 2007. Board Meeting Agenda, Resolution: Agenda Item 14. Sacramento, CA.

[35] County of Los AngelesDepartment of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[36] Combs, Suzanne, John Johnston, Gary Lippner, David Marx, and Kimberly Walter. 1998–2000. *Caltrans Litter Management Pilot Study*. Sacramento, CA: California Department of Transportation.

[37] Keep America Beautiful, Inc. Accessed on: 18 August 2011. "Litter Prevention." Available at: http://www.kab.org/site/PageServer?pagename=focus_litter_prevention

[38] *United States Code*, Title 33, Section 1313, "Water Quality Standards and Implementation Plans." Clean Water Act, Section 303(d).

The CIWMB estimates that approximately 3.9 percent of plastic waste can be attributed to plastic carryout bags related to grocery and other merchandise, which represents approximately 0.4 percent of the total waste stream in California.[40,41] Several organizations have studied the effects of plastic litter: Caltrans conducted a study on freeway storm water litter;[42] the Friends of Los Angeles River conducted a waste characterization study on the Los Angeles River;[43] the City of Los Angeles conducted a waste characterization study on 30 storm drain basins;[44] and LACDPW conducted a trash reduction and a waste characterization study of street sweeping and trash capture systems near and within the Hamilton Bowl in Long Beach, California.[45] These studies concluded that plastic film (including plastic bag litter) composed between 7 to 30 percent by mass and between 12 to 34 percent by volume of the total litter collected. Despite implementation of BMPs; installation of litter control devices, such as cover fences for trucks, catch basins, and facilities to prevent airborne bags from escaping; and the use of roving patrols to pick up littered bags, plastic bag litter remains prevalent throughout the County.[46]

Assembly Bill (AB) 2449 requires all supermarkets (grocery stores with more than $2 million in annual sales) and retail businesses of at least 10,000 square feet with a licensed pharmacy to establish a plastic carryout bag recycling program at each store. As of July 1, 2007, each store must provide a clearly marked bin that is easily available for customers to deposit plastic carryout bags for recycling. The stores' plastic bags must display the words "please return to a participating store for recycling."[47] In addition, the affected stores must make reusable bags available to their patrons. These bags can be made of cloth, fabric, or plastic with a thickness of 2.25 mils or greater.[48] The stores are allowed to charge their patrons for reusable bags.[49] Store operators must maintain program records for a minimum of three years and make the records available to the local jurisdiction.[50] Despite the implementation of AB 2449, the California Department of Resources

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[39] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[40] California Environmental Protection Agency, Integrated Waste Management Board. December 2004. "Table ES-3: Composition of California's Overall Disposed Waste Stream by Material Type, 2003." *Contractor's Report to the Board: Statewide Waste Characterization* Study, p. 6. Produced by: Cascadia Consulting Group, Inc. Berkeley, CA. Available at: http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1097

[41] Note: Plastics make up approximately 9.5 percent of California's waste stream by weight, including 0.4 percent for plastic carryout bags related to grocery and other merchandise, 0.7 percent for non-bag commercial and industrial packaging film, and 1 percent for plastic trash bags.

[42] Combs, Suzanne, John Johnston, Gary Lippner, David Marx, and Kimberly Walter. 1998–2000. *Caltrans Litter Management Pilot Study*. Sacramento, CA: California Department of Transportation.

[43] Friends of the Los Angeles River and American Rivers. 2004. *Great Los Angeles River*. Los Angeles and Nevada City, CA.

[44] City of Los Angeles, Sanitation Department of Public Works. June 2006. *Technical Report: Assessment of Catch Basin Opening Screen Covers*. Los Angeles, CA.

[45] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[46] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[47] *Public Resources Code*, Section 42250–42257. 2006. Assembly Bill 2449.

[48] *Public Resources Code*, Section 42250–42257. 2006. Assembly Bill 2449.

[49] *Public Resources Code*, Section 42250–42257. 2006. Assembly Bill 2449.

[50] California Integrated Waste Management Board. 12 June 2007. Board Meeting Agenda, Resolution: Agenda Item 14. Sacramento, CA.

Recycling and Recovery (CalRecycle) reported that the most recent statewide recycling rate for regulated plastic carryout bags was only approximately 3 percent.[51]

2.3.2 Paper Bags

The production, distribution, and disposal of paper carryout bags also have known adverse effects on the environment.[52,53] There is a considerable amount of energy that is used, trees that are felled, and pollution that is generated in the production process of paper carryout bags.[54,55] The CIWMB determined in the 2004 Statewide Waste Characterization Study that approximately 117,000 tons of paper carryout bags are disposed of each year by consumers throughout the County. This amount accounts for approximately 1 percent of the total 12 million tons of solid waste generated each year.[56] However, paper bags have the potential to biodegrade if they are sufficiently exposed to oxygen, sunlight, moisture, soil, and microorganisms (such as bacteria); they are denser and less susceptible to becoming airborne; and they generally have a higher recycling rate than do plastic bags. The U.S. Environmental Protection Agency (USEPA) reported that the recycling rate for high-density polyethylene plastic bags and sacks was 11.9 percent in 2007, compared to a recycling rate of 36.8 percent of paper bags and sacks.[57] The City currently has an educational outreach program for curbside recycling for items including paper carryout bags.[58] There is nearly universal access to curbside recycling throughout the City and homeowners can conveniently recycle paper bags. The paper used to make standard paper carryout bags is originally derived from wood pulp, which is a naturally biodegradable and compostable material. Therefore, based upon the available evidence, paper carryout bags are less likely to become litter than are plastic carryout bags. The brown paper bags commonly found at supermarkets are made from Kraft paper.[59]

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[51] CalRecycle. Last updated: 6 April 2011. *2009 Statewide Recycling Rate for Plastic Carryout Bags*. Available at: http://www.calrecycle.ca.gov/Plastics/AtStore/AnnualRate/2009Rate.htm

[52] County of Los Angeles Department of Public Works, Environmental Programs Division. October 2008. *County of Los Angeles Single Use Bag Reduction and Recycling Program – Program Resource Packet*. Alhambra, CA.

[53] Green Cities California. March 2010. *Master Environmental Assessment on Single-Use and Reusable Bags*. Prepared by: ICF International. San Francisco, CA.

[54] County of Los Angeles Board of Supervisors. 22 January 2008. *Single Use Bag Reduction and Recycling Program (Resolution and Alternative 5)*. Los Angeles, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/Resources.cfm

[55] County of Los Angeles Department of Public Works, Environmental Programs Division. October 2008. *County of Los Angeles Single Use Bag Reduction and Recycling Program – Program Resource Packet*. Alhambra, CA.

[56] California Environmental Protection Agency, Integrated Waste Management Board. December 2004. *Contractor's Report to the Board: 2004 Statewide Waste Characterization Study*. Produced by: Cascadia Consulting Group, Inc. Berkeley, CA. Available at: http://www.ciwmb.ca.gov/publications/localasst/34004005.pdf

[57] U.S. Environmental Protection Agency. November 2008. "Table 21: Recovery of Products in Municipal Solid Waste, 1960 to 2007." *Municipal Solid Waste in the United States: 2007 Facts and Figures*. Washington, DC. Available at: http://www.epa.gov/waste/nonhaz/municipal/pubs/msw07-rpt.pdf. The referenced table included the recovery of post-consumer wastes for the purposes of recycling or composting, it did not include conversion/fabrication scrap. The report includes the recovery of plastic bags, sacks, and wraps (excluding packaging) for a total of 9.1 percent of plastic recovered in this category. The County of Los Angeles conservatively estimates that the percentage of plastic bags in this category for the County of Los Angeles is less than 5 percent.

[58] City of Pasadena. Revised August 2008. *Guide to Pasadena Curbside Recycling*. Available at: http://www.ci.pasadena.ca.us/PublicWorks/Trash_and_Recycling/

[59] American Forest and Paper Association. Accessed on: 18 August 2011. Web site. "Facts About Paper." Available at: http://www.afandpa.org/FunFacts.aspx

2.3.3 Reusable Bags

Reusable bags offer an alternative to plastic carryout bags, compostable plastic carryout bags, and paper carryout bags. The utility of a reusable bag has been noted in various reports, such as the 2008 report by Green Seal, which estimates the life of a reusable bag as being between two and five years.[60] In 1994, the Green Seal report encouraged an industry standard for reusable bags of a least 300 uses. Today, Green Seal recommends a more ambitious standard of a minimum of 500 uses under wet conditions (bag testing under wet conditions is more stringent testing).[61] Furthermore, life cycle studies for plastic products have documented the adverse impacts related to various types of plastic and paper bags; however, life cycle studies have also indicated that reusable bags are the preferable option to both paper bags and plastic bags. [62,63,64,65]

Reusable bags are intended to provide a viable alternative to the use of paper or plastic carryout bags.[66] Currently, some stores within the City, such as certain Whole Foods divisions, do not offer plastic carryout bags at checkout and instead offer reusable bags for sale and provide rebates if their patrons bring their own reusable bags. Other stores, such as certain Ralph's divisions, offer reusable bags for purchase at registers and offer various incentives such as store rewards or store credit to customers who use reusable bags.[67]

2.4 STATEMENT OF OBJECTIVES

2.4.1 Program Goals

The proposed ordinance supports the City's adopted Green City Action Plan goals of conserving energy and natural resources, reducing the volume of landfill waste, reducing litter, protecting the watershed, and helping promote a clean and sustainable environment.

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[60] Green Seal, Inc. is an independent non-profit organization that uses science-based standards and the power of the marketplace to provide recommendations regarding sustainable products, standards, and practices.

[61] Green Seal, Inc. 13 October 2008. *Green Seal Proposed Revised Environmental Standard For Reusable Bags (GS-16)*. Washington, DC. Available at: http://www.greenseal.org/certification/gs-16_reusable_bag_proposed_revised_standard_background%20document.pdf

[62] Reusable bag manufacturers in the United States are expected to enforce industry standards and recommendations to reduce adverse environmental impacts.

[63] Green Seal, Inc. 13 October 2008. *Green Seal Proposed Revised Environmental Standard For Reusable Bags (GS-16)*. Washington, DC. Available at: http://www.greenseal.org/certification/gs-16_reusable_bag_proposed_revised_standard_background%20document.pdf

[64] Boustead Consulting & Associates, Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Available at: http://www.americanchemistry.com/s_plastics/doc.asp?CID=1106&DID=7212

[65] Green Cities California. March 2010. *Master Environmental Assessment on Single-Use and Reusable Bags*. Prepared by: ICF International. San Francisco, CA.

[66] Green Seal, Inc. 13 October 2008. *Green Seal Proposed Revised Environmental Standard For Reusable Bags (GS-16)*. Washington, DC. Available at: http://www.greenseal.org/certification/gs-16_reusable_bag_proposed_revised_standard_background%20document.pdf

[67] Ralphs Grocery Company. 2009. "Doing Your Part: Try Reusable Shopping Bags." Web site. Available at: http://www.ralphs.com/healthy_living/green_living/Pages/reusable_bags.aspx

2.4.2 Objectives

The City's objectives for the proposed ordinance would be similar to the County's objectives for the Countywide ordinance. The County's objectives are as follow:[68]

- Conduct outreach to all 88 incorporated cities of the County to encourage adoption of comparable ordinances
- Reduce the Countywide consumption of plastic carryout bags from the estimated 1,600 plastic carryout bags per household in 2007, to fewer than 800 plastic bags per household in 2013
- Reduce the Countywide contribution of plastic carryout bags to litter that blights public spaces Countywide by 50 percent by 2013
- Reduce the County's, Cities', and Flood Control District's costs for prevention, cleanup, and enforcement efforts to reduce litter in the County by $4 million
- Substantially increase awareness of the negative impacts of plastic carryout bags and the benefits of reusable bags, and reach at least 50,000 residents (5 percent of the population) with an environmental awareness message

The City's proposed ordinance has five objectives that are consistent with those outlined in the certified EIR:

- Reduce the Citywide use of plastic carryout bags
- Reduce litter
- Assist the County in reducing costs for prevention, clean-up, and enforcement efforts to reduce litter
- Substantially increase awareness of the negative impacts of plastic carryout bags and the benefits of reusable bags
- Reduce Citywide disposal of plastic carryout bags

2.5 PROPOSED PROJECT

The proposed ordinance would ban the issuance of plastic carryout bags and place a charge of 10 cents on the issuance of paper carryout bags at certain retail establishments in the City. Six months following adoption of the proposed ordinance by the Pasadena City Council, the proposed ordinance would apply to large stores within the City, including those that (1) meet the definition of a "supermarket" as found in the California Public Resources Code, Section 14526.5; (2) are buildings that have over 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 and have a pharmacy licensed pursuant to Chapter 9 of Division 2 of the Business and Professions Code. Twelve months following the adoption of the proposed ordinance by the Pasadena City Council, the proposed ordinance would apply to all other stores, including drug stores, supermarkets, pharmacies, grocery stores, convenience food stores, foodmarts, farmers markets, and other entities engaged in the retail sale of a limited line of goods that includes milk, bread, soda, and snack foods, including those stores with a Type 20 or 21 license issued by the Department of Alcoholic Beverage Control. Vendors at City-sponsored events, facilities, or City property will also be required to comply with the proposed ordinance within 12 months following adoption of the proposed ordinance.

[68] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

The ordinance provides an exemption for stores that are required to provide plastic carryout bags as a condition of use or as required to abate a nuisance. In addition, restaurants and fast food establishments are not within the scope of this proposed ordinance. The ordinance also allows recyclable paper carryout bags to be distributed free of charge at farmers markets and explicitly provides an exemption to protect low-income consumers.

The proposed ordinance is substantially similar to the ordinance adopted by the County Board of Supervisors, analyzed as Alternative 5, "Ban Plastic Carryout Bags and Impose a Fee on Paper Carryout Bags for All Supermarkets and Other Grocery Stores, Convenience Stores, Pharmacies, and Drug Stores in Los Angeles County," in the certified EIR.[69] The key differences between the City's proposed ordinance and the ordinance adopted by the County include the following:

- The County's ordinance does not specify farmers markets, but the City's proposed ordinance would also apply to farmers markets.
- The proposed ordinance would apply to vendors at City-sponsored events and City-owned facilities and events held on City property.
- The County ordinance requires affected stores to provide quarterly reports to the director of public works summarizing the money collected for recyclable paper carryout bags and the efforts undertaken to promote the use of reusable bags. The City's proposed ordinance would require affected stores to report to the director of finance or a department designated by the city manager on a yearly basis.
- The City's proposed ordinance would take effect 6 months after City Council adoption for supermarkets with gross annual sales of $2 million or more and stores of at least 10,000 square feet with a licensed pharmacy, rather than on July 1, 2011, the operative date for the County's ordinance. For stores smaller than 10,000 square feet, the City's ordinance would take effect 12 months after the ordinance is adopted by City Council, rather than the operative date for the County's ordinance.

The differences between the City and County ordinances as listed above are minor changes that would not result in any new or significantly more adverse environmental impacts than those analyzed in the certified EIR (adopted November 16, 2010). As such, the City's proposed ordinance is consistent with the County's ordinance but would be specific to the City of Pasadena.

[69] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

SECTION 3.0
ENVIRONMENTAL ANALYSIS

The environmental analysis provided in this section describes the information that was considered in evaluating the questions contained in the Environmental Checklist of the State California Environmental Quality Act Guidelines.[1] The information used in this evaluation is derived from the literature review (see Section 4.0, *References*, for a list of reference material consulted), field reconnaissance, and consultation with the City of Pasadena. The evaluation of direct, indirect, and cumulative impacts considered the existing conditions within the City of Pasadena and the surrounding County of Los Angeles. A summary of the potential environmental impacts from implementation of the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) is presented in Table 3-1, *Summary of Impacts from Proposed Ordinance*.

TABLE 3-1
SUMMARY OF IMPACTS FROM PROPOSED ORDINANCE

Impact	Level of Significance	Compared to the County's Certified EIR
Aesthetics		
None	No impact	Same; no new impacts
Agricultural and Forest Resources		
None	No impact	Same; no new impacts
Air Quality		
Indirect increase in demand for paper carryout bags and potential subsequent increase in criteria pollutant emissions from manufacture, distribution, and disposal of paper carryout bags; to be partially offset by reduction in plastic carryout bags and increase in reusable bags	Less than significant	Same; no new impacts
Biological Resources		
Beneficial	No adverse impact, but beneficial impact	Same; no new impacts
Cultural Resources		
None	No impact	Same; no new impacts
Geology and Soils		
None	No impact	Same; no new impacts
Greenhouse Gas Emissions		
Indirect increase in demand for paper carryout bags and potential subsequent increase in greenhouse emissions from manufacture, distribution, and disposal; to be partially offset by reduction in plastic carryout bags and increase in reusable bags	Direct: less than significant Cumulative: potentially significant; the City will adopt a Statement of Overriding Considerations*	Same; no new impacts
Hazards and Hazardous Materials		
None	No impact	Same; no new impacts

[1] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

TABLE 3-1
SUMMARY OF IMPACTS FROM PROPOSED ORDINANCE, *Continued*

Impact	Level of Significance	Compared to the County's Certified EIR
Hydrology and Water Quality		
Indirect increase in demand for paper carryout bags with potential subsequent increase in eutrophication impacts from manufacture; to be partially offset by reduction in use of plastic carryout bags (i.e. plastic bag litter in waterways)	Less than significant	Same; no new impacts
Land Use and Planning		
None	No impact	Same; no new impacts
Mineral Resources		
None	No impact	Same; no new impacts
Noise		
None	No impact	Same; no new impacts
Population and Housing		
None	No impact	Same; no new impacts
Public Services		
None	No impact	Same; no new impacts
Recreation		
None	No impact	Same; no new impacts
Transportation and Traffic		
None	No impact	Same; no new impacts
Utilities and Service Systems		
Indirect increase in demand for paper carryout bags and subsequent increase in consumption of water and energy and generation of wastewater and solid waste due to manufacture, distribution, and disposal; to be partially offset by reduction in use of plastic carryout bags	Less than significant	Same; no new impacts

NOTE:
* The "potentially significant" determination is project-specific and is based on the following: (1) worst-case scenario; (2) lack of local, regional, State, or federal cumulative significance threshold; (3) claim by certain representatives of the plastic bag industry that paper bags are significantly worse for the environment from a greenhouse gas emissions perspective. This conclusion is the same as the presented in the County's certified EIR.

3.1 AESTHETICS

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts to aesthetics from those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Aesthetics within the City of Pasadena (City) were evaluated with regard to the California Department of Transportation Scenic Highway Program designations,[2] and previously published information regarding the visual character of the City, including scenic resources and vistas as discussed in the City of Pasadena General Plan.[3]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to aesthetics compared to the approved ordinances was evaluated in relation to four questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena environmental checklist.[4, 5]

Would the proposed ordinance:

(a) Have a substantial adverse effect on a scenic vista?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to aesthetics; therefore, this environmental issue area was not carried forward for analysis in the certified EIR.[6] As with the approved ordinances, the proposed ordinance would not have any adverse effect on a scenic vista. The City has several scenic hillside and mountain vistas and open spaces, such as the Arroyo Seco, Eaton Canyon, Eaton Wash, Hahamongna Watershed Park, San Gabriel Mountains, and Angeles National Forest.[7] The City of Pasadena General Plan mandates that Pasadena's natural environment and scenic corridors be thoughtfully preserved as an ongoing investment of the health and safety of present and future generations.[8] The proposed ordinance, which aims to significantly reduce the amount of litter that can be attributed to plastic carryout bags, would potentially lead to an improvement in the visual character of scenic vistas in the City. As indicated in the County of Los Angeles staff report on plastic bags, due to their light weight, plastic bags are easily carried by wind to become entangled in brush, tossed along freeways, and caught on fences throughout the

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] California Department of Transportation. Updated 19 May 2008. "Eligible (E) and Officially Designated (OD) Routes." *California Scenic Highway Program*. Available at: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm

[3] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

[4] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[5] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[6] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[7] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

[8] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

County, thereby becoming visual eyesores.[9,10] Furthermore, the distinct white or bright colors of plastic bags and the difficulty of collecting them result in a greater potential for visual impacts than other types of litter. The proposed ordinance would be expected to reduce the visual prominence of plastic bag litter, and thus would potentially reduce the negative impacts of plastic bags on scenic vistas within the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to aesthetics related to substantial adverse effects to scenic vistas.

(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to aesthetics; therefore, this environmental issue was not carried forward for the analysis in the certified EIR.[11] The only designated state scenic highway in the City is the Angeles Crest Highway (State Highway 2), which is located north of Arroyo Seco Canyon in the extreme northwest portion of the City.[12] State Route 210, an eligible state scenic highway, is also located within the jurisdictional boundary of the proposed ordinance.[13] The proposed ordinance, which aims to significantly reduce the amount of litter that can be attributed to the use of plastic carryout bags, would potentially lead to an improvement in the quality of scenic resources and scenic highway areas within the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to aesthetics related to substantial damage to scenic resources within a state scenic highway.

(c) Substantially degrade the existing visual character or quality of the site and its surroundings?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to aesthetics; therefore, this environmental issue was not carried forward for the analysis in the certified EIR.[14] The proposed ordinance would not be expected to result in impacts to aesthetics in relation to the substantial degradation of the existing visual character of the City. The existing visual character of the City ranges from developed urban areas to scenic hillside and mountain vistas and open spaces. The proposed ordinances would potentially lead to the improvement of the existing visual character of the City by reducing the occurrence of plastic bag litter. Therefore, the proposed

[9] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[10] Combs, Suzanne, John Johnston, Gary Lippner, David Marx, and Kimberly Walter. 1998–2000. *Caltrans Litter Management Pilot Study*. Sacramento, CA: California Department of Transportation.

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[12] California Department of Transportation. Updated 19 May 2008. "Eligible (E) and Officially Designated (OD) Routes." *California Scenic Highway Program*. Available at: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm

[13] California Department of Transportation. Updated 19 May 2008. "Eligible (E) and Officially Designated (OD) Routes." *California Scenic Highway Program*. Available at: http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

ordinance would not be expected to result in new or substantially more adverse significant impacts to aesthetics related to degradation of the existing visual character of the City.

(d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to aesthetics; therefore, this environmental issue was not carried forward for the analysis in the certified EIR.[15] The proposed ordinance would not be expected to result in impacts to aesthetics related to the creation of a new source of substantial light or glare that would adversely affect daytime or nighttime views within the City. The proposed ordinance would ban plastic carryout bags issued by certain stores and would not be expected to create additional sources of light or glare. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to aesthetics related to the creation of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

3.2 AGRICULTURAL AND FOREST RESOURCES

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts to agricultural and forest resources than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Bags in Los Angeles County (approved ordinances).[1] Agricultural and forest resources in the City of Pasadena (City) were evaluated with regard to the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP),[2] the County of Los Angeles General Plan,[3] City of Pasadena General Plan,[4] and City of Pasadena Zoning Code.[5]

The State California Environmental Quality Act (CEQA) Guidelines (§21060.1(a) Public Resources Code 21000-21177) define agricultural land as "prime farmland, farmland of statewide importance, or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for California," and is herein collectively referred to as Farmland. Public Resources Code section 12220(g) defines forest land as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to agricultural and forest resources was evaluated in relation to five questions recommended for consideration by the State CEQA Guidelines and the City of Pasadena Environmental Checklist.[6, 7]

Would the proposed ordinance:

(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to agricultural and forest resources; therefore, this environmental issue area was not carried forward for analysis in the

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2004. *Important Farmland in California, 2002*. Sacramento, CA.

[3] County of Los Angeles Department of Regional Planning. November 1980. *County of Los Angeles General Plan*. Contact: 320 West Temple Street, Room 1348, Los Angeles, CA 90012.

[4] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element*. Pasadena, CA.

[5] City of Pasadena Department of Planning. Accessed on: 2 September 2011. City of Pasadena Zoning Code. Available at: http://ww2.cityofpasadena.net/zoning/index.html. Pasadena, CA.

[6] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[7] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

EIR.[8] The City is a developed urban area surrounded by hillsides to the north and northwest. The City contains no prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps pursuant to the FMMP of the California Resources Agency.[9] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not include components that would alter the existing land uses within the City. The proposed ordinance would not require the conversion of any existing area designated for agricultural land use or Farmland, as it would not require any construction, demolition, or road-paving activities. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to agricultural and forest resources related to the conversion of Farmland.

(b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to agricultural and forest resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[10] Williamson Act contracts are contracts between local government and private landowners to restrict specific parcels of land to agricultural or related open-space uses. The City has no land zoned specifically for agricultural use, although commercial growing areas are allowed by right in the General Commercial (CG), Limited Commercial (CL), and General Industrial (IG) zones and conditionally in the Open Space (OS), and Residential (RS and RM) Zoning Districts.[11] Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to agricultural and forest resources related to a conflict with existing zoning for agricultural use or a Williamson Act contract.

(c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to agricultural and forest resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[12] Based on a review of City of Pasadena General Plan and Zoning Code, there is no timberland

[8] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[9] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2004. *Important Farmland in California, 2002*. Sacramento, CA.

[10] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[11] City of Pasadena Department of Planning. Accessed on: 2 September 2011. City of Pasadena Zoning Code. Available at: http://ww2.cityofpasadena.net/zoning/index.html. Pasadena, CA.

[12] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

designated or zoned within the City's jurisdiction.[13,14] The Public Resources Code section 12220(g) defines forest land as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

Public Resources Code section 4526 states,

> "Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others.[15]

Government Code section 51104 (g) states,

> "Timberland production zone" or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone."[16]

Sections 51112 and 51113 relate to timberland production within timberland production zones.[17] Finally, subdivision (h) states that a "'compatible use' is any use which does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber" and provides six specific instances where such uses would be "'contrary' or inconsistent with the land being considered a 'compatible use.'"[18]

According to the Department of Forestry and Fire Protection, the State of California consists of approximately 5,418,979 acres of land that has been classified as TPZ.[19] TPZ is designated in 32 counties within the state. The County of Los Angeles does not contain land that is designated as TPZ.[20,21] The proposed ordinance would ban the issuance of plastic carryout bags at certain stores

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[13] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element*. Pasadena, CA. Contact: 320 West Temple Street, Room 1348, Los Angeles, CA 90012.

[14] City of Pasadena Department of Planning. Accessed on: 2 September 2011. City of Pasadena Zoning Code. Available at: http://ww2.cityofpasadena.net/zoning/index.html. Pasadena, CA.

[15] *California Public Resources Code*, Section 4526.

[16] *California Government Code*, Article 1, General Provisions, Sections 51100–51104; Section 51104 (g).

[17] *California Government Code*, Article 2, Timberland Production Zones, Sections 51110–51119.5; Sections 51112–51113.

[18] *California Government Code*, Article 1, General Provisions, Sections 51100-51104; Section 51104 (h).

[19] California Department of Forestry and Fire Protection. 3 January 2002. *Timberland Site Class on Private Lands Zoned for Timber Production*. Technical working paper. Sacramento, CA. Available at: http://frap.cdf.ca.gov/publications/Timberland_Site_Class_on_Private_Lands_Zoned_for_Timber_Production.pdf

[20] California Department of Forestry and Fire Protection. 3 January 2002. *Timberland Site Class on Private Lands Zoned for Timber Production*. Technical working paper. Sacramento, CA. Available at: http://frap.cdf.ca.gov/publications/Timberland_Site_Class_on_Private_Lands_Zoned_for_Timber_Production.pdf

and would not conflict with land that is zoned for forest land, timberland, or timberland production. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to agricultural and forest resources in relation to a conflict with existing zoning for, or cause rezoning of, forest land [as defined in Public Resources Code section 12220(g)], timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production [as defined by Government Code section 51104(g)].

(d) Result in the loss of forest land or conversion of forest land to non-forest use?

As a result of the analysis undertaken in the Initial Study for the certified EIR it was determined that the approved ordinances would not be expected to result in significant impacts to agricultural and forest resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[22] Based on a review of City of Pasadena General Plan and Zoning Code, there is no forest land designated or zoned within the City's jurisdiction.[23,24] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail components that would result in the loss of forest land or conversion of forest land to non-forest use. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to agricultural and forest resources in relation to the loss of forest land or conversion of forest land to non-forest use.

(e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to agricultural and forest resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[25] Based on a review of City of Pasadena General Plan and Zoning Code, there is no agricultural or forest land designated or zoned within the City's jurisdiction.[26,27] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not require any construction, conversion, demolition, or road-paving activities. Therefore, compared with the

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[21] County of Los Angeles Department of Regional Planning. November 1980. *County of Los Angeles General Plan*. Los Angeles, CA.

[22] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[23] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element*. Pasadena, CA.

[24] City of Pasadena Department of Planning. Accessed on: 2 September 2011. City of Pasadena Zoning Code. Available at: http://ww2.cityofpasadena.net/zoning/index.html. Pasadena, CA.

[25] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[26] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element*. Pasadena, CA.

[27] City of Pasadena Department of Planning. Accessed on: 2 September 2011. City of Pasadena Zoning Code. Available at: http://ww2.cityofpasadena.net/zoning/index.html. Pasadena, CA.

approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to agricultural and forest resources related to changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

3.3 AIR QUALITY

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts to air quality than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Air quality in the City of Pasadena (City) was evaluated with regard to the South Coast Air Quality Management District *CEQA Air Quality Handbook*,[2] the National Ambient Air Quality Standards,[3] the California Ambient Air Quality Standards,[4] the Clean Air Act (CAA),[5] and a review of life cycle assessments (LCAs) that evaluate plastic and paper carryout bags.[6,7]

Data on existing air quality conditions in the South Coast Air Basin (SCAB), in which the City is located, are monitored by a network of air monitoring stations operated by the California Environmental Protection Agency, the California Air Resources Board (CARB), and the SCAQMD. The air quality assessment considers all phases of project planning, construction, and operation. The conclusions reflect guidelines outlined in the SCAQMD *CEQA Air Quality Handbook*.[8]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to air quality was evaluated in relation to five questions recommended for consideration by the State California Environmental Quality Act (CEQA) Guidelines and the City of Pasadena Environmental Checklist.[9,10]

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. Diamond Bar, CA.

[3] U.S. Environmental Protection Agency. Updated 18 April 2011. "National Ambient Air Quality Standards (NAAQS)." *Air and Radiation*. Available at: http://www.epa.gov/air/criteria.html

[4] California Air Resources Board. Reviewed 24 November 2009. *California Ambient Air Quality Standards (CAAQS)*. Available at: http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm

[5] U.S. Environmental Protection Agency. Updated 1 March 2011. "Title I - Air Pollution Prevention and Control." *Federal Clean Air Act*. Available at: http://www.epa.gov/air/caa//

[6] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[7] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.

[8] South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. Diamond Bar, CA.

[9] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[10] City of Pasadena. Initial Study Template. Provided on September 7, 2011. On File at Sapphos Environmental, Inc.

Would the proposed ordinance:

(a) Conflict with or obstruct implementation of the applicable air quality plan?

As a result of the analysis undertaken in the certified EIR, it was determined that impacts to air quality as a result of the approved ordinances would be below the level of significance.[11] The proposed ordinance would not be expected to create a new or substantially more adverse significant impact to air quality related to conflicts with or obstruction of implementation of the applicable air quality plan. The proposed ordinance would affect certain stores in the City, which is located within the SCAQMD portion of the SCAB. Ozone (O_3) is the pollutant of greatest concern throughout the SCAB. Many sources of O_3 precursors are spread throughout the SCAB. The County is currently designated as a federal nonattainment area for fine particulate matter ($PM_{2.5}$), an extreme nonattainment area for ozone (O_3) and a serious nonattainment area for suspended particulate matter (PM_{10}).[12] However, the SCAB has achieved the federal 1-hour and 8-hour carbon monoxide (CO) air quality standards since 1990 and 2002, respectively, and the County has met the federal air quality standards for nitrogen dioxide (NO_2) since 1992.[13]

The most recent update to the SCAQMD Air Quality Management Plan (AQMP) was prepared in order for air quality improvements to meet both state and federal CAA planning requirements for all areas under AQMP jurisdiction. This update was adopted by CARB on September 27, 2007, for inclusion in the State Implementation Plan. The AQMP sets forth strategies for attaining the federal PM_{10} and $PM_{2.5}$ air quality standards and the federal 8-hour O_3 air quality standard, and for meeting state standards at the earliest practicable date. With the incorporation of new scientific data, emission inventories, ambient measurements, control strategies, and air quality modeling, the 2007 AQMP focuses on O_3 and $PM_{2.5}$ attainments.

Existing air quality within the City vicinity is characterized by a mix of local emission sources that include stationary activities, such as space and water heating, landscape maintenance, and consumer products, as well as mobile sources. Motor vehicles are the primary source of pollutants within the proposed ordinance vicinity and have the potential to generate localized concentrations of CO called CO "hotspots."

SCAQMD evaluates projects in terms of air pollution thresholds.[14] The proposed ordinance would be considered significant if implementation of the proposed ordinance results in daily construction- or operation-related emissions that cause or exceed the SCAQMD thresholds of significance. The proposed ordinance would not include demolition, construction, or operation of any physical structures that would create direct impacts related to air quality. The proposed ordinance would not be expected to result in a change to the population growth assumptions used by SCAQMD for attainment planning.

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.1-31 and 12-40 to 12-46. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[12] U.S. Environmental Protection Agency. 21 April 2011. *The Green Book Nonattainment Areas for Criteria Pollutants*. Available at: http://www.epa.gov/oar/oaqps/greenbk/

[13] South Coast Air Quality Management District. June 2007. *Final 2007 Air Quality Management Plan*. Diamond Bar, CA.

[14] South Coast Air Quality Management District. 1993. "Developing Baseline Air Quality Information." *CEQA Air Quality Handbook*. Diamond Bar, CA.

Several studies show that production of paper carryout bags generally produces more air pollutant emissions than the production of plastic carryout bags.[15,16] Although certain representatives of the plastic bag industry have argued that similar ordinances have the potential to increase the demand for paper carryout bags,[17] the proposed ordinance would place a 10-cent charge on the issuance of paper carryout bags to encourage the use of reusable bags. Nevertheless, the potential for criteria pollutant emissions during the manufacture of paper carryout bags and reusable bags was evaluated consistent with the analysis in the certified EIR.[18]

One way to analyze impacts of the production, manufacture, distribution, and disposal of various types of bags is to review available LCAs. An LCA evaluates environmental impacts by analyzing the entire life cycle of a product, process, or activity, including extraction and processing of raw materials, manufacturing, transportation and distribution, use/reuse/maintenance, recycling, and final disposal.[19] Ecobilan, a department of PricewaterhouseCoopers that provides analysis of the environmental performance of products and services,[20] prepared a comprehensive LCA in 2004 that quantifies the environmental impacts of paper carryout bags, reusable low-density polyethylene plastic bags, and plastic carryout bags made of high-density polyethylene.[21] The certified EIR used the Ecobilan study because it is relatively recent; contains relatively sophisticated modeling and data processing techniques; considers a wide range of environmental indicators; considers paper, plastic, and reusable bags; was critically reviewed by the French Environment and Energy Management Agency; and contains detailed emission data for individual pollutants. The conservative scenario used to evaluate impacts assumes that 50 percent of consumers in Pasadena would switch to using paper carryout bags or reusable bags instead of plastic carryout bags. Based on 50-percent conversion from plastic to paper carryout bags and life cycle data from the Ecobilan study, the proposed ordinance would be expected to result in an overall decrease in emissions of CO, PM, SO_x, and volatile organic compounds (VOCs), but would be expected to result in an increase in NO_x (Table 3.3-1, *Estimated Daily Emission Changes Due to 50-percent Conversion from Plastic to Paper Carryout Bags Based on Ecobilan Data*; Appendix A, *Calculations and Modeling Results*). This result is largely inconclusive because the conversion from plastic carryout bags to paper carryout bags would be expected to result in both beneficial and adverse impacts to air quality, depending on which criteria pollutants are analyzed. In addition, these results cannot reasonably be evaluated in relation to the operational thresholds of significance set by SCAQMD because the operational thresholds are intended for specific projects located in the SCAB for the SCAB, whereas LCA data cover all stages of production, distribution, and end-of-life procedures related to a particular product. The production of plastic carryout bags and paper carryout bags is

[15] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[16] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for the Progressive Bag Affiliates.

[17] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[18] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.1-31 and 12-40 to 12-46. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[19] Green Cities California. March 2010. *Master Environmental Assessment on Single-Use and Reusable Bags*. Prepared by: ICF International. San Francisco, CA.

[20] Ecobilan. Accessed on: 8 March 2010. Company Web site. Available at: https://www.ecobilan.com/uk_who.php

[21] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

not limited to the SCAB; there are manufacturing facilities located in other air basins in the United States and in other countries that may have different emission thresholds and regulations.

TABLE 3.3-1
ESTIMATED DAILY EMISSION CHANGES DUE TO 50-PERCENT CONVERSION FROM PLASTIC TO PAPER CARRYOUT BAGS BASED ON ECOBILAN DATA

Emission Source	Air Pollutant (Pounds/Day)[2]				
	VOCs[1]	NO_x	CO	SO_x	PM
City Ordinance – 108 stores within Pasadena[3]	-61	24	-112	-27	-43
County Ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	-2,729	1,058	-5,004	-1,190	-1,936

KEY:
CO = carbon monoxide
NO_x = nitrogen oxide
PM = particulate matter
SO_x = sulfur oxide
VOC = volatile organic compound

SOURCES:
1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-41. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTES:
1. Total VOCs include all compounds defined as contributors to the formation of photochemical oxidants in the Ecobilan Study, apart from methane, ethane, and acetone, which are not included in the SCAQMD definition of VOCs under Rule 102.
2. Negative numbers indicate the extent of the reduction in air pollutants generated by paper carryout bags in comparison to the air pollutants generated by plastic carryout bags by subtracting the data for plastic carryout bags from the data for paper carryout bags.
3. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).

Other LCAs state that overall air pollutant emissions due to the life cycle of paper carryout bags would be higher than those emitted during the life cycle of plastic carryout bags.[22,23] However, as with the Ecobilan data, the majority of these criteria pollutant emissions are likely to originate from processes that occur early in the life cycle of paper and plastic carryout bags, such as raw materials extraction and product manufacturing. Since the majority of paper carryout bags supplied to the greater Los Angeles metropolitan area are produced in and transported from outside of California[24] or from foreign countries, such as Canada,[25] it is not necessary to extrapolate LCA data to determine emission levels for the SCAQMD portion of the SCAB.

[22] Franklin Associates, Ltd. 1990. *Resource and Environmental Profile Analysis of Polyethylene and Unbleached Paper Grocery Sacks*. Prairie Village, KS.

[23] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.

[24] Watt, Stephanie, Sapphos Environmental, Inc., Santa Monica, CA. 15 July 2009. Telephone communication with Ms. Carol Trout, Customer Service Department, Duro Bag Manufacturing Company, Florence, KY.

[25] National Council for Air and Stream Improvement. 5 February 2010. *Life Cycle Assessment of Unbleached Paper Grocery Bags*. Prepared for: American Forest and Paper Association and Forest Product Association of Canada.

Although the paper bag manufacturing facilities that supply to the affected stores in the City are not located within the SCAB, landfills that accept plastic and paper carryout bag waste are located within this air basin. Therefore, emissions from the transport of carryout bags to landfills and the decomposition of carryout bags in landfills would have the potential to impact air quality in the SCAB. Using the Ecobilan data, a 50-percent conversion from the use of plastic to paper carryout bags throughout the entire County would yield an increase in NO_x emissions of approximately 91 pounds per day from the transport of paper carryout bags to landfills (Table 3.3-2, *Estimated Increase in NO_x Emissions Due to End of Life Based on Ecobilan Data*). For the proposed ordinance, a 50-percent conversion from plastic to paper carryout bags would yield an increase in NO_x emissions of approximately 2 pounds per day. These emissions cannot be applied to the SCAQMD operational thresholds, which are only applicable to individual development projects; they do not apply to cumulative development (note that the proposed ordinance does not include any development). In addition, any increases in air pollutant emissions as an indirect impact of the proposed ordinance would be controlled by SCAQMD Rule 1193 and the CARB Solid Waste Collection Vehicle Rule; therefore, the impacts to air quality due to vehicle trips transporting paper carryout bag waste to landfills would be expected to be below the level of significance.

TABLE 3.3-2
ESTIMATED INCREASE IN NO_x EMISSIONS DUE TO END OF LIFE BASED ON ECOBILAN DATA

Emission Source	50-percent Conversion from Plastic to Paper Carryout Bags[1] NO_x (Pounds/Day)[3]
City Ordinance – 108 stores within Pasadena[2]	+2
County Ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	+110

SOURCES:
1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. U.S. Environmental Protection Agency. November 2008. *Municipal Solid Waste in the United States: 2007 Facts and Figures*. Washington, DC. Available at: http://www.epa.gov/waste/nonhaz/municipal/pubs/msw07-rpt.pdf
3. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-44. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTES:
1. Assuming 36.8 percent of paper carryout bags are diverted from landfills and 11.9 percent of plastic carryout bags are diverted from landfills, based on the 2007 USEPA recycling rates for bags and sacks.
2. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
3. "+" indicates the extent of the increase in NOx emissions that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.

As with the approved ordinances, the proposed ordinance would be expected to cause a potential increase in delivery truck trips required to transport paper carryout bags and reusable bags to affected stores. Assuming that the proposed ordinance would affect 42 stores each using 10,000 plastic carryout bags per day, and 66 stores each using 5,000 plastic carryout bags per day, a 50-percent conversion to paper carryout bags would be expected to generate approximately 2

additional truck trips per day.[26] The criteria pollutant emissions that would be anticipated to result from 2 additional truck trips per day to and from the 108 stores in the City and up to 96 additional truck trips per day to and from the 6,175 stores in the entire County were calculated using URBEMIS 2007 (Table 3.3-3, *Estimated Daily Operational Emissions from Increased Truck Trips*, and Appendix A). The unmitigated emissions from delivery truck trips would be expected to be well below the SCAQMD thresholds of significance (Table 3.3-3).

TABLE 3.3-3
ESTIMATED DAILY OPERATIONAL EMISSIONS FROM INCREASED TRUCK TRIPS

Emission Source	Air Pollutant (Pounds/Day)					
	VOCs	NOx	CO	SOx	$PM_{2.5}$	PM_{10}
2 delivery truck trips in the City of Pasadena	0.02	0.04	0.25	0	0.01	0.05
96 delivery truck trips in the entire County	0.80	1.90	12.02	0.01	0.46	2.24
SCAQMD Threshold	55	55	550	150	55	150
Exceedance of Significance?	No	No	No	No	No	No

SOURCES:
1. URBEMIS 2007 v9.2.4 (see Appendix A)
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-45. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

The proposed ordinance would also be expected to result in increased use of reusable bags. However, as discussed in the certified EIR, air quality impacts due to the life cycle of a reusable bag would be expected to be significantly lower than the air quality impacts of a plastic or paper carryout bag when considered on a per-use basis, and any conversion from the use of plastic carryout bags to reusable bags would be reasonably expected to result in an environmental benefit.[27] By the definition established in the proposed ordinance, reusable bags must be designed to have a minimum lifespan of 125 uses. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality related to conflicts with or obstruction of implementation of the applicable air quality plan.

(b) Violate any air quality standard or contribute substantially to existing or projected air violation?

As a result of the analysis undertaken in the certified EIR, it was determined that impacts to air quality as a result of the approved ordinances would be below the level of significance.[28] The proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality in relation to violating an air quality standard or contributing substantially to existing or projected air violation than those disclosed in the certified EIR. The proposed ordinance would not include demolition, construction, or operation of any physical structures that would create

[26] (66 stores x 5,000 plastic carryout bags per day / 2,304,000 plastic carryout bags per truck) + (42 stores x 10,000 plastic carryout bags per day / 2,304,000 plastic carryout bags per truck) x 13 ÷ 2 ≈ 2 daily truck trips

[27] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.*, p. 12-44. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[28] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.1-31 and 12-40 to 12-46. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

direct impacts related to air quality. As discussed in the response to (a) above, emissions due to a 50-percent conversion from the use of plastic carryout bags to the use of paper carryout bags would result in both beneficial and adverse impacts to air quality, depending on which criteria pollutants are analyzed. The production of plastic carryout bags and paper carryout bags is not limited to the SCAB; there are manufacturing facilities located in other air basins in the United States and in other countries that may have different emission thresholds and regulations. As discussed in the response to (a) above, emissions due to the transport of carryout bags in the City would be well below the SCAQMD thresholds of significance. In addition, as discussed in the certified EIR, air quality impacts due to the life cycle of a reusable bag would be expected to be significantly lower than the air quality impacts of a plastic or paper carryout bag when considered on a per-use basis, and any conversion from the use of plastic carryout bags to reusable bags would be reasonably expected to result in an environmental benefit.[29] Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality related to a violation of any air quality standard or substantial contribution to existing or projected air violation.

(c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

As a result of the analysis undertaken in the certified EIR, it was determined that impacts to air quality as a result of the approved ordinances would be below the level of significance.[30] The proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality in relation to a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment. The certified EIR evaluated cumulative impacts by assuming that all 88 incorporated cities in the County, including the City of Pasadena, would adopt similar ordinances. The analysis concluded that the proposed ordinances would be expected to result in a less than significant cumulative impact to air quality.[31] The City of Pasadena is located within the SCAB, which is designated as a nonattainment area according to the state and federal O_3, PM_{10}, and $PM_{2.5}$ standards. The proposed ordinance would not include demolition, construction, or operation of any physical structures that would create direct impacts related to air quality. O_3 precursors are emitted during the manufacture and transport of paper carryout bags and reusable bags. However, the production of paper carryout bags and reusable bags is not limited to locations within the SCAB, as there are manufacturing facilities located in other air basins in the United States and in other countries that may have different emission thresholds and regulations. As discussed in the response to (a) above, emissions due to the transport of carryout bags in the City would be well below the SCAQMD thresholds of significance. Therefore, the proposed ordinance would be expected to result in a less than significant incremental impact to cumulative criteria pollutant emissions. In addition, as discussed in the certified EIR, air quality impacts due to the life cycle of a reusable bag would be expected to be significantly lower than the air quality

[29] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-44. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[30] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.1-31 and 12-40 to 12-46. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[31] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.1-30 to 3.1-31. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

impacts of a plastic or paper carryout bag when considered on a per-use basis, and any conversion from the use of plastic carryout bags to reusable bags would be reasonably expected to result in an environmental benefit.[32] Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality related to a cumulatively considerable net increase of any criteria pollutant.

(d) Expose sensitive receptors to substantial pollutant concentrations?

As a result of the analysis undertaken in the certified EIR, it was determined that impacts to air quality as a result of the approved ordinances would be below the level of significance.[33] The proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality in relation to exposure of sensitive receptors to substantial pollutant concentrations from those disclosed in the certified EIR. Sensitive receptors in the City include residences, schools, playgrounds, child care centers, athletic facilities, long-term health-care facilities, rehabilitation centers, convalescent centers, and retirement homes. The proposed ordinance would not include demolition, construction, or operation of any physical structures that would create air quality impacts to sensitive receptors in the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality or sensitive receptors related to criteria pollutants.

(e) Create objectionable odors affecting a substantial number of people?

As a result of the analysis undertaken in the certified EIR, it was determined that impacts to air quality as a result of the approved ordinances would be below the level of significance.[34] The proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to air quality in relation to creating objectionable odors than those disclosed in the certified EIR. According to the *CEQA Air Quality Handbook*, odor nuisances are associated with land uses and industrial operations, including agricultural uses, waste water treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding facilities.[35] Since the proposed ordinance does not fall into any of these categories, operational odor impacts from the proposed ordinance would be below the level of significance. Any indirect increase in odor emissions from paper carryout bag manufacturing facilities that would be affected by the proposed ordinance—though none are located in the City or the SCAB—would be controlled by the owners of the manufacturing facilities in compliance with applicable local, regional, and national air quality standards. Any indirect increase in odor emissions from the decomposition of paper carryout bags in landfills—though none are located within the City––would also be controlled by landfill managers in compliance with SCAQMD Rule 1150.1, Control of Gaseous Emissions from Active Landfills. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more significant impacts to air quality related to objectionable odors.

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[32] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-44. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[33] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.1-31 and 12-40 to 12-46. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[34] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.1-31 and 12-40 to 12-46. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[35] South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. Diamond Bar, CA.

3.4 BIOLOGICAL RESOURCES

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to biological resources than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances). As a result of the Initial Study prepared in 2009, the County of Los Angeles (County) determined that the approved ordinances would not result in significant adverse impacts to biological resources.[1] However, one of the County's goals in considering the approved ordinances was to provide improved aquatic habitats for plant and wildlife resources through the reduction of total litter through a ban on plastic carryout bags issued by certain stores. Therefore, the biological resources issue area was carried forward for detailed analysis in the EIR to characterize the anticipated beneficial effects of the approved ordinances on biological resources.[2]

Biological resources within the City of Pasadena (City) were evaluated with regard to the Conservation element of the City of Pasadena General Plan;[3] the Green City Action Plan;[4] information provided by the National Oceanic and Atmospheric Administration,[5] the U.S. Fish and Wildlife Service (USFWS),[6] and California Department of Fish and Game (CDFG);[7] and a review of published and unpublished literature germane to the proposed ordinance.[8] The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to biological resources was evaluated in relation to six questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[9,10]

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[3] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element.* Pasadena, CA.

[4] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[5] National Oceanic and Atmospheric Administration Fisheries Office of Protected Resources. Updated 8 September 2011. Recovery Plans for Endangered and Threatened Species. Available at: http://www.nmfs.noaa.gov/pr/recovery/plans.htm#turtles

[6] U.S. Fish and Wildlife Service. Accessed on: 15 August 2011. *Natural Community Conservation Planning (NCCP): NCCP Plan Summary – Palos Verdes Peninsula.* Available at: http://www.dfg.ca.gov/habcon/nccp/status/PalosVerdes/

[7] California Department of Fish and Game. April 2011. *Summary of Natural Community Conservation Plans (NCCPs) April, 2011*. Available at: http://www.dfg.ca.gov/habcon/nccp/

[8] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report.* Pasadena, CA.

[9] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[10] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

Would the proposed ordinance:

(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

As a result of the analysis undertaken in the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to biological resources.[11] Action 12 in the Green City Action Plan identifies the goal of protecting critical habitat corridors and other key habitat characteristics in the City from unsustainable development, particularly within the Arroyo Seco and Eaton Canyon park lands.[12] The proposed ordinance would not modify any land uses or have any direct effect upon physical landforms, and does not include any elements that would adversely affect existing habitats for candidate, sensitive, or special-status species. Floatable trash has been noted to inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms.[13] The proposed ordinance intends to reduce the amount of litter attributed to plastic bag waste, which would be expected to result in only potentially beneficial indirect impacts upon State-designated sensitive habitats by reducing the amount of litter in these areas.

Twenty-two marine species that occur in Southern California off the coast of Los Angeles County are listed as either endangered or threatened under the Endangered Species Act.[14] Six marine species that occur in Southern California off the coast of the County are listed as species of concern by the National Marine Fisheries Service, and 11 avian marine species that occur in Southern California off the coast of the County are listed as species of special concern by the CDFG.[15] According to the Regional Water Quality Control Board (RWQCB) for the Los Angeles Region, trash has potentially harmful impacts to species, and plastic bags are one of the most common items of trash observed by RWQCB staff.[16] Seabirds, sea turtles, and marine mammals that feed on or near the ocean surface are especially prone to ingesting floating plastic debris.[17,18,19] The impacts include fatalities as a result of ingestion, starvation, suffocation, infection, drowning, and

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-24. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[12] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[13] Regional Water Quality Control Board, Los Angeles Region. Revised 27 July 2007. "Trash Total Maximum Daily Loads for the Los Angeles River Watershed." Los Angeles, CA.

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-12, 3.1-14, and 3.2-19. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-13, 3.1-15, and 3.2-20. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[16] Regional Water Quality Control Board, Los Angeles Region. Revised 27 July 2007. "Trash Total Maximum Daily Loads for the Los Angeles River Watershed." Los Angeles, CA.

[17] California Ocean Protection Council. 20 November 2008. *An Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter*. Available at: http://www.opc.ca.gov/webmaster/ftp/pdf/opc_ocean_litter_final_strategy.pdf

[18] National Research Council. 2008. "Tackling Marine Debris in the 21st Century." Committee on the Effectiveness of National and International Measures to Prevent and Reduce Marine Debris and Its Impacts.

[19] U.S. Environmental Protection Agency. August 2002. *Assessing and Monitoring Floatable Debris*. Washington, DC.

entanglement.[20,21] The recovery plan for the endangered leatherback turtle *(Dermochelys coriacea)* lists ingestion of marine debris, including plastic bags, as one of the factors threatening this species. The recovery plan states that leatherback turtles consume floating plastic because they appear to mistake the floating plastic for jellyfish.[22] The recovery plans for the threatened green turtle *(Chelonia mydas)*, loggerhead turtle *(Caretta caretta)*, and olive ridley turtle *(Lepidochelys olivacea)* also note plastic bag ingestion as a threat to those species.[23,24,25] Ingestion of plastics is also noted as a threat in the recovery plan for the federally endangered short-tailed albatross *(Phoebastria albatrus)*.[26] Preventing trash from entering water bodies has the potential to improve habitats and aquatic life.[27]

The proposed ordinance would have the potential to improve habitats and aquatic life because the proposed ordinance would be expected to reduce the amount of trash entering water bodies in the City that drain to the Pacific Ocean. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to candidate, sensitive, or special-status species listed in local or regional plans, policies, or regulations, or by the CDFG or USFWS.

(b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

As a result of the analysis undertaken in the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to biological resources.[28] Riparian habitat is lowland scrub habitat associated with the bed and banks of a river, stream, or wash, and there are numerous rivers, streams, and washes located in the City. The natural plant communities within the City's boundaries are primarily located in the surrounding hillsides and within the Arroyo Seco and Eaton Canyon Washes.[29] These locations may contain representative

[20] California Ocean Protection Council. 20 November 2008. *An Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter*. Available at: http://www.opc.ca.gov/webmaster/ftp/pdf/opc_ocean_litter_final_strategy.pdf

[21] Gregory, Murray R. 2009. "Environmental Implications of Plastic debris in Marine Settings --Entanglement, Ingestion, Smothering, Hangers-on, Hitch-hiking and Alien Invasions." In *Philosophical Transactions of the Royal Society B: Biological Sciences, 364*: 2013–2025.

[22] National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998. *Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle*. Available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_leatherback_pacific.pdf

[23] National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998. *Recovery Plan for U.S. Pacific Populations of the East Pacific Green Turtle*. Available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_green_eastpacific.pdf

[24] National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998. *Recovery Plan for U.S. Pacific Populations of the Loggerhead Turtle*. Available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_loggerhead_pacific.pdf

[25] National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998. *Recovery Plan for U.S. Pacific Populations of the Olive Ridley Turtle*. Available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/turtle_oliveridley.pdf

[26] U.S. Fish and Wildlife Service. September 2008. *Short-tailed Albatross Recovery Plan*. Available at: http://alaska.fws.gov/fisheries/endangered/pdf/stal_recovery_plan.pdf

[27] Regional Water Quality Control Board, Los Angeles Region. Revised 27 July 2007. "Trash Total Maximum Daily Loads for the Los Angeles River Watershed." Los Angeles, CA.

[28] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-24. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[29] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Figure 4.8-1. Pasadena, CA.

sub areas of Coastal Sage Scrub, Chaparral, Riparian, Coastal Oak Woodland and/or Annual Grassland plant communities. Riparian plant communities are most likely to occur in both the upper and lower Arroyo Seco and Eaton Canyon and along blue-line streams in canyons or natural ravines. Coastal Oak Woodland is typified by Oak Grove Park in upper Arroyo Seco. Coastal Sage Scrub and Chaparral often occur in a mosaic pattern throughout all natural habitat areas. Annual Grassland is most likely to be found in the Western Hillside area.[30] As with the approved ordinances, the proposed ordinance would not modify any land uses or have any direct effect upon physical landforms. Also as with the approved ordinances, the proposed ordinance would be anticipated to result in potential beneficial impacts to biological resources by reducing the potential for plastic carryout bag litter to end up in riparian habitats or other sensitive natural communities. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.

(c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

As a result of the analysis undertaken in the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to biological resources.[31] The proposed ordinance would be anticipated to reduce the amount of plastic carryout bag litter entering water bodies in the County, such as the Los Angeles River, thereby potentially improving habitats and aquatic life.[32] Therefore, as with the approved ordinances, the proposed ordinance would be anticipated to improve surface water quality by reducing the occurrence of plastic carryout bag litter in these waters. In addition, the proposed ordinance would not include any elements that would involve direct removal, filling, or hydrological interruption of federally protected wetlands. Therefore, as compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to federally protected wetlands as defined by Section 404 of the Clean Water Act.

(d) 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?

As a result of the analysis undertaken in the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to biological resources.[33] Preventing trash from entering water bodies, such as the Los Angeles River, has the potential to

[30] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report.* Pasadena, CA.

[31] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-24. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[32] Regional Water Quality Control Board, Los Angeles Region. Revised 27 July 2007. "Trash Total Maximum Daily Loads for the Los Angeles River Watershed." Los Angeles, CA.

[33] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-24. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

improve habitats and aquatic life.[34] Plastic litter has been known to block sea turtle hatchling migration.[35] The proposed ordinance would be anticipated to reduce the amount of plastic carryout bag litter entering water bodies in the City that drain to the Pacific Ocean. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to migratory routes or nursery sites.

(e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

As a result of the analysis undertaken in the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to biological resources.[36] The City of Pasadena Tree Protection Ordinance (Pasadena Municipal Code Chapter 8.52) aims to protect public trees, landmark trees, native trees, and specimen trees in certain parts of the City and requires protection measures for new projects to avoid negative impacts that may occur during construction. The proposed ordinance would not contain any components that would remove or otherwise adversely impact local biological resources, such as oak trees. The City of Pasadena General Plan includes a policy to encourage and promote the stewardship of Pasadena's natural environment,[37] and Action 12 in the Green City Action Plan sets forth a goal to protect critical habitat corridors and other key habitat characteristics from unsustainable development.[38] The proposed ordinance would not have any elements that would be inconsistent with the goals of the City of Pasadena General Plan or the Green City Action Plan. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to conflicts with any local policies or ordinances protecting biological resources.

(f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

As a result of the analysis undertaken in the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to biological resources.[39] According to the CDFG's National Community Conservation Planning (NCCP) program, the only NCCP region within the County is the Palos Verdes Peninsula NCCP, which is located approximately 27 miles southwest of the City and addresses the conservation of most of the coastal sage scrub habitat and other habitats on the Palos Verdes Peninsula.[40,41] There are no adopted

[34] Regional Water Quality Control Board, Los Angeles Region. Revised 27 July 2007. "Trash Total Maximum Daily Loads for the Los Angeles River Watershed." Los Angeles, CA.

[35] California Ocean Protection Council. 20 November 2008. *An Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter*. Available at: http://www.opc.ca.gov/webmaster/ftp/pdf/opc_ocean_litter_final_strategy.pdf

[36] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-24. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[37] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element*. Pasadena, CA.

[38] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[39] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.2-24. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[40] California Department of Fish and Game. April 2011. *Summary of Natural Community Conservation Plans (NCCPs) April, 2011*. Available at: http://www.dfg.ca.gov/habcon/nccp/

NCCPs or Habitat Conservation Plans (HCPs) that would apply to the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to conflicts with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

[41] U.S. Fish and Wildlife Service. Accessed on: 15 August 2011. *Natural Community Conservation Planning (NCCP): NCCP Plan Summary – Palos Verdes Peninsula*. Available at: http://www.dfg.ca.gov/habcon/nccp/status/PalosVerdes/

3.5 CULTURAL RESOURCES

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to cultural resources than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to cultural resources was evaluated in relation to four questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[2,3]

Would the proposed ordinance:

(a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to cultural resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[4] The City has many historical resources and landmarks. Some of Pasadena's best-known historic landmarks include the Pasadena Civic Auditorium, the Castle Green Apartments, the Arroyo Seco Bridge, the Pasadena Playhouse, the Gamble House, and numerous other buildings.[5] Approximately 1,675 buildings in Pasadena are listed on the National Register of Historic Places, either individually or as part of a district.[6] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City and would not include any activities that could adversely impact historical resources. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to cultural resources related to a substantial adverse change in the significance of an historical resource.

(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to cultural resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[7]

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[3] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[4] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[5] Johnson, Kevin. City of Pasadena Planning Department. 6 September 2011. E-mail to Ms. Ursula Schmidt, City of Pasadena, CA.

[6] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Pasadena, CA.

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

The City is largely urbanized. Previous development activity has resulted in the discovery of archaeological and paleontological resources.[8] With regard to archaeological resources, infill development in already developed areas is not anticipated to uncover additional resources.[9] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City and would not include any ground-disturbing activities that would adversely impact archeological resources. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to cultural resources related to a substantial adverse change in the significance of an archeological resource.

(c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to cultural resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[10] In October 1993, the City of Pasadena (City) directed the Natural History Museum of Los Angeles County and the San Bernardino County Museum to provide a citywide inventory of paleontological resource sites. The Natural History Museum of Los Angeles County search found no recorded paleontological resource sites within City boundaries.[11] The nearest recorded site was located approximately 0.5 mile from the southern boundary of the City near the 110 freeway.[12] The San Bernardino County Museum inventory yielded two recorded sites within the City boundaries where molluscan fauna were identified.[13] Both studies concluded that there is a potential for significant vertebrate fossils to be found within specific geologic formations in the City. However, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City and would not include any activities that would demolish, destroy, relocate, or alter paleontological resources or geologic features. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to cultural resources related directly or indirectly to the destruction of a unique paleontological resource, site, or geologic feature.

[8] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Pasadena, CA.

[9] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Pasadena, CA.

[10] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[11] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Pasadena, CA.

[12] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Pasadena, CA.

[13] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Pasadena, CA.

(d) Disturb any human remains, including those interred outside of formal cemeteries?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to cultural resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[14] A prehistoric archaeological site, CA-LAN 26, was discovered in Pasadena in 1938. This site, known as the Walker's Sheldon Reservoir site, contained an early Indian cemetery with 2 cremations, 53 burials, and accompanying grave goods.[15] However, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not include any ground-disturbing activities that would disturb human remains, including remains interred outside of formal cemeteries. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to human remains.

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[15] City of Pasadena Department of Planning. November 2004. *The 2004 Land Use and Mobility Elements, Zoning Code Revisions, and Central District Specific Plan Environmental Impact Report*. Pasadena, CA.

3.6 ENERGY

The analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to energy conservation than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Energy consumption for the proposed ordinance was evaluated with regard to Appendix F, *Energy Consumption*, of the State California Environmental Quality Act (CEQA) Guidelines[2] and information gleaned from life cycle assessments (LCAs) evaluating plastic and paper carryout bags.[3,4]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to energy consumption was evaluated in relation to two questions recommended for consideration by the City of Pasadena (City) Environmental Checklist.[5,6]

Would the proposed ordinance:

(a) Conflict with adopted energy conservation plans?

The City has adopted an amended California Green Building Standards Code (14.04.500) to promote energy conservation and reduce energy consumption compared to standard building practices. The proposed ordinance would not involve the construction of any buildings or structures. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to conflicting with an adopted energy conservation plan.

(b) Use non-renewable resources in a wasteful and inefficient manner?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts with regard to energy conservation.[7] Several studies have shown that the production of paper carryout bags requires more energy than does the production of plastic carryout bags.[8,9,10] The conservative scenario used

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] *California Code of Regulations*. Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix F.

[3] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[4] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.

[5] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[6] City of Pasadena. Initial Study Template. 7 September 2011. On File at Sapphos Environmental, Inc., Pasadena, CA.

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-67. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[8] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[9] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.

[10] The ULS Report. 1 June 2007. *Review of Life Cycle Data Relating to Disposable Compostable Biodegradable, and Reusable Grocery Bags*. Rochester, MI.

to evaluate impacts assumes that 50 percent of consumers in Pasadena would switch from plastic carryout bags to paper carryout bags (50-percent conversion scenario). The results of the Ecobilan life LCA indicated that a 50-percent conversion from plastic carryout bags to paper carryout bags would be expected reduce energy consumption (Table 3.6-1, *Consumption of Nonrenewable Energy Due to Plastic and Paper Carryout Bags Based on Ecobilan Data*, and Appendix A). However, using the Boustead LCA results, the potential increase in energy consumption due to a 50-percent conversion from use of plastic carryout bags to the use of paper carryout bags would be approximately 0.08 million kilowatts per hour (kWh) from implementation of the proposed ordinance in the City, and approximately 3.61 million kilowatts per hour (kWh) in total if similar ordinances were adopted throughout the County (Table 3.6-2, *Consumption of Nonrenewable Energy Due to Plastic and Paper Carryout Bags Based on Ecobilan Data*, and Appendix A). The estimated total electricity consumption in the County in 2007 was 68,120 million kWh, with 47,484 million kWh in the non-residential sector;[11] therefore, the indirect estimated electricity demands due to bag manufacturing would be negligible compared to the total energy demand of the County's nonresidential sector. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to energy conservation.

TABLE 3.6-1
CONSUMPTION OF NONRENEWABLE ENERGY DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON ECOBILAN DATA

Solid Waste Sources	Solid Waste Generation (tons)	
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[1]
City ordinance – 108 stores within Pasadena[2]	0.09	-0.04
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	4.14	-2.01

SOURCES:

1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-66. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTES:

1. Negative numbers indicate the extent of the decrease in energy consumption that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.
2. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).

[11] California Energy Commission. Accessed on: 4 May 2010. "Electricity Consumption by County." *California Energy Consumption Data Management System*. Available at: http://ecdms.energy.ca.gov/elecbycounty.aspx

TABLE 3.6-2
CONSUMPTION OF NONRENEWABLE ENERGY DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON BOUSTEAD DATA

Solid Waste Sources	Solid Waste Generation (tons)	
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[1]
City ordinance – 108 stores within Pasadena[2]	0.11	+0.08
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	4.74	+3.61

SOURCES:

1. Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-67. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTE:

1. Positive and negative numbers indicate the extent of the increase and decrease, respectively, in energy consumption that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.
2. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).

3.7 GEOLOGY AND SOILS

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to geology and soils than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Impacts to geology and soils within the City of Pasadena (City) were evaluated with regard to the City of Pasadena General Plan[2] and the most recent Alquist-Priolo Earthquake Fault Zoning maps.[3]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to geology and soils was evaluated in relation to eight questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[4,5]

Would the proposed ordinance:

(a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[6] The City is located at the boundary between two of Southern California's geomorphic provinces in an area that is being compressed by geological forces associated with movement on the Pacific and North American tectonic plates.[7] In the Pasadena area, the main faults include the Sierra Madre Fault and the Raymond Fault. A worst-case scenario earthquake (maximum magnitude) for Pasadena would involve rupture of the segment of the Sierra Madre Fault that extends through the northern portion of the City. A maximum-magnitude earthquake on the Raymond Fault is a close second in terms of potential damage to the City.[8] The eastern and central sections of the Raymond Fault are zoned under the Alquist-Priolo Earthquake Fault Zoning Act, so geological evaluations to

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element*. Pasadena, CA.

[3] California Geological Survey. [2007 Interim Revision] Supplements 1 and 2 added 1999. *Fault-Rupture Hazard Zones in California*. Special Publication 42. Contact: 655 S. Hope Street, #700, Los Angeles, CA 90017. Available at: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf

[4] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[5] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[6] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[7] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element*. Pasadena, CA.

[8] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element*. Pasadena, CA.

locate the fault are mandated by state law if developments or redevelopments amounting to more than 50 percent of the value of the structure are proposed within this zone.[9] Although active earthquake faults exist throughout the City, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail the development of structures or physical project elements that would expose or place people within vicinity of a known earthquake fault. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to exposing people or structures to potential substantial adverse effects involving the rupture of a known earthquake fault than those disclosed in the certified EIR.

ii) Strong seismic ground shaking?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[10] Properties near the Sierra Madre Fault and Raymond Fault line are prone to strong seismic ground shaking.[11] However, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail the development of structures or physical project elements that would expose or place people near or in areas susceptible to strong seismic ground shaking. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to exposing people or structures to potential substantial adverse effects involving strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction as delineated on the most recent Seismic Hazards Zones Map issued by the State Geologist for the area or based on other substantial evidence of known areas of liquefaction?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[12] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail the development of structures or physical project elements that would expose or place people near or in an area susceptible to seismic-related ground failure, including liquefaction. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to exposing people or structures to potential substantial adverse effects involving seismic-related ground failure, including liquefaction.

[9] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[10] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[11] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[12] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

iv) Landslides as delineated on the most recent Seismic Hazards Zones Map issued by the State Geologist for the area or based on other substantial evidence of known areas of landslides?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[13] The City has several areas where its hillsides are vulnerable to slope instability due primarily to the fractured, crushed, and weathered condition of the bedrock and steep terrains.[14] However, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not contain components that would require the development of structures or physical project elements that would expose people to potential adverse impacts related to landslides. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to exposing people or structures to potential substantial adverse effects involving landslides.

(b) Result in substantial soil erosion or the loss of topsoil?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[15] Several areas in the City are prone to soil erosion. Grading and construction operations are necessary to correct for unstable soils, soil erosion, landsliding, and flooding (debris and/or mudflows) in hillside areas.[16] The proposed ordinance would not contain physical project elements that would require construction-related activities such as grading or development that would be expected to result in changes to the existing soil conditions or create a loss of topsoil within the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to substantial soil erosion or the loss of topsoil.

(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the proposed ordinance, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[17] Several areas in the City are prone to soil erosion. Grading and construction operations are necessary to correct for unstable soils, soil erosion, landsliding, and flooding (debris and/or

[13] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[14] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[16] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[17] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

mudflows) in hillside areas.[18] As previously stated, the proposed ordinance would not require construction-related activities or the development of structures or physical project elements that would be expected to result in impacts related to soil or geologic units that are unstable or that would become unstable. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to location on a geologic unit or soil that is unstable or would become unstable as a result of the proposed ordinance, potentially resulting in on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse.

(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[19] Some of the geologic units in the Pasadena area have fine-grained components that are moderately to highly expansive. These units are present in the southern San Rafael Hills and in the southern part of the City, where fine-grained sequences within the alluvial fans are more likely to be present.[20] The proposed ordinance would not entail the development of structures or features that would be located on expansive soils. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to location on expansive soil.

(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to geology and soils; therefore, this environmental issue area was not carried forward for analysis in the EIR.[21] The proposed ordinance would not entail any components requiring the use of septic tanks or alternative waste water disposal systems. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

[18] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element*. Pasadena, CA.

[19] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[20] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element*. Pasadena, CA.

[21] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

3.8 GREENHOUSE GAS EMISSIONS

The analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to greenhouse gas (GHG) emissions than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] GHG emissions in the City of Pasadena (City) were evaluated with regard to Section 15063 of the State California Environmental Quality Act (CEQA) Guidelines[2] and a review life cycle assessments that evaluate plastic and paper carryout bags.[3,4]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to GHG emissions was evaluated in relation to two questions recommended for consideration by the State CEQA Guidelines and the City of Pasadena Environmental Checklist.[5,6]

Would the proposed ordinance:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant direct impacts to GHG emissions.[7] However, because there are no federal, state, regional, or local regulations establishing significance on a cumulative level, and because the County of Los Angeles (County) evaluated the impacts of the approved ordinances from a conservative worst-case scenario, it was determined that the indirect impacts of the approved ordinances may have the potential to be cumulatively significant.[8] However, the County has recognized and acknowledged that each city has the authority to render an independent decision regarding implementation of its own ordinance. Each city's determination would be contingent on the exact parameters of the city's proposed ordinance, the percentage increase in conversion to paper carryout bags, the number of stores affected, the actual bag usage per day, the size of the fee or charge, the city's adopted thresholds of significance, and the city's projected Assembly Bill (AB) 32 GHG emissions target.[9]

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] *California Code of Regulations*. Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[3] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[4] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.

[5] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[6] City of Pasadena. Initial Study Template. 7 September 2011. On File at Sapphos Environmental, Inc., Pasdena, CA.

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-48. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[8] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-52. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[9] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-52. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

There are currently no adopted quantitative thresholds of significance for evaluating GHG emissions under CEQA in the City. No federal or state agency (*e.g.* U.S. Environmental Protection Agency, California Air Resources Board, or South Coast Air Quality Management District) responsible for managing air quality emissions in the City has adopted a GHG emission significance threshold that may be used in reviewing newly proposed projects.

Although not mandatory for the proposed ordinance, the Bay Area Air Quality Management District (BAAQMD) is the only regional agency to have adopted operational GHG emission thresholds under CEQA. On June 2, 2010, CEQA projects within the BAAQMD area must consider the following significance thresholds:

Stationary sources:

- 10,000 metric tons CO_{2e}/year

Projects other than stationary sources:

- Compliance with Qualified Greenhouse Gas Reduction Strategy; or
- 1,100 metric tons of CO2e/year; or
- 4.6 metric tons CO2e per year per capita service population (residents plus employees)

Plan-level emissions:

- Compliance with Qualified Greenhouse Gas Reduction Strategy; or
- 6.6 metric tons CO2e per year per capita service population (residents plus employees)

The proposed ordinance was evaluated with regard to the plan-level emission significance threshold of 6.6 metric tons CO_{2e} per year per capita service population. This significance threshold was chosen for analysis of this particular project because the proposed ordinance can be classified as a plan-level project. In addition, the threshold was derived from statewide compliance with AB 32, so it can be appropriate for application to projects in areas outside of the BAAQMD. The City does not recommend adoption of this threshold at this time for any other purpose aside from evaluation of the significance level of potential impacts from the proposed ordinance. The significance level of potential impacts from the proposed ordinance was also evaluated in accordance with the significance thresholds used in the certified EIR. Two significance criteria were used to evaluate the approved ordinances:

- Inconsistency with laws and regulations in managing GHG emissions
- Inconsistency with the goal to reduce GHG emissions to 1990 levels (approximately 427 million metric tons or 9.6 metric tons of CO_{2e} per capita) by 2020 as required by AB 32

Several studies show that production of paper carryout bags generally produces more GHG emissions than the production of plastic carryout bags.[10,11] Although certain representatives of the

[10] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

plastic bag industry have stated that similar ordinances have the potential to increase the demand for paper carryout bags,[12] the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags to encourage the use of reusable bags. Nevertheless, the potential for GHG emissions during the manufacture of paper carryout bags and reusable bags was evaluated consistent with the analysis in the certified EIR.[13]

The conservative scenario used to evaluate impacts assumes that 50 percent of consumers in Pasadena would switch from using plastic carryout bags to using paper carryout bags. As stated in the certified EIR, using the Ecobilan LCA, a 50-percent conversion from plastic carryout bags to paper carryout bags would be expected to reduce GHG emissions if all the 88 incorporated cities of the County adopted similar plastic bag ordinances.[14] Similarly, the City's proposed ordinance would be expected to result in a reduction of GHG emissions (Appendix A and Table 3.8-1, *GHG Emissions Due to Plastic and Paper Carryout Bags Based on Ecobilan Data*). However, using the Boustead data, a 50-percent conversion from the use of plastic carryout bags to the use paper carryout bags would be expected to result in an increase of 8,284 metric tons of CO_{2e} per year throughout the County if all 88 incorporated cities adopted similar plastic bag ordinances.[15] Of that number, the City's proposed ordinance would be responsible for an increase of approximately 185 metric tons of CO_{2e} per year (Appendix A and Table 3.8-2, *GHG Emissions Due to Plastic and Paper Carryout Bags Based on Boustead Data*). This amount is equivalent to approximately 0.001 metric ton per capita, which is well below the significance threshold of 6.6 metric tons per capita. Based on the LCA, the GHG emission impacts from a 50-percent conversion from use of plastic bags to use of paper carryout bags would also be expected to be below the level of significance when considering California's GHG emissions target for 2020 of 427 million metric tons per year and the County's GHG emissions target for 2020 of 108 million metric tons per year. For a 50-percent conversion to paper carryout bags, the LCA results would be equivalent to 0.001 metric ton of CO_{2e} per year per capita, which would not conflict with the goals of AB 32 to reduce emissions to approximately 9.6 metric tons per capita by the year 2020.

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[11] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for the Progressive Bag Affiliates.

[12] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[13] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* pp. 3.3-15 to 3.3-38 and12-47 to 12-55. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-48. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix C: Calculation Data. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

TABLE 3.8-1
GHG EMISSIONS DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON ECOBILAN DATA

Emission Source	GHG Emissions			
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)		
	Metric Tons Per Day	Metric Tons Per Day	Metric Tons Per Year[2]	Metric Tons Per Year Per Capita[1,2]
City ordinance – 108 stores within Pasadena[1]	12.71	-0.74	-269	-0.001
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	568.08	-32.92	-12,015	-0.001

KEY: GHG = greenhouse gas

SOURCES:

1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-48. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.
3. U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder. Available at: www.census.gov

NOTES:

1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. Per-capita emissions were calculated using the City's 2010 service population of 200,226, which includes 137,122 residents and 63,104 employees.

TABLE 3.8-2
GHG EMISSIONS DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON BOUSTEAD DATA

Emission Source	GHG Emissions			
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)		
	Metric Tons Per Day	Metric Tons Per Day	Metric Tons Per Year[2]	Metric Tons Per Year Per Capita[1,2]
City Ordinance – 108 stores within Pasadena[1]	20.00	+0.51	+185	+0.001
County Ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	893.87	+22.70	+8,284	+0.001

KEY: GHG = greenhouse gas

SOURCES:

1. Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix C: Calculation Data. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.
3. U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder. Available at: www.census.gov

NOTE:

1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. Per-capita emissions were calculated using the City's 2010 service population of 200,226, which includes 137,122 residents and 63,104 employees.

As discussed in the certified EIR, the proposed ordinance would be expected to significantly increase consumers' use of reusable bags, the production of which would generate less GHG emissions than the production of both paper carryout bags and plastic carryout bags when considered on a per-use basis because reusable bags are designed to be used multiple times.[16]

Delivery trucks that transport carryout bags throughout the City would have the potential to generate GHG emissions. Assuming that the proposed ordinance would affect 42 stores, each using 10,000 plastic carryout bags per day, and 66 stores each using 5,000 plastic carryout bags per day, a 50-percent conversion to paper carryout bags would be expected to generate approximately 2 additional truck trips per day in the City (Appendix A and Table 3.8-3, *Estimated Daily Operational Emissions Due to Increased Vehicle Trips from 50-Percent Conversion from Plastic to Paper Carryout Bags*).[17,18]

[16] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* pp. 12-52 to 12-53. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[17] (66 stores x 5,000 plastic carryout bags per day / 2,304,000 plastic carryout bags per truck) + (42 stores x 10,000 plastic carryout bags per day / 2,304,000 plastic carryout bags per truck) x 13 ÷ 2 ≈ 2 daily truck trips

The emissions per capita due to vehicle trips would be significantly lower than the significance threshold of 6.6 metric tons CO_{2e} per year per capita service population (Table 3.8-3). The GHG emission impacts related to vehicle trips from a 50-percent conversion from plastic to paper carryout bags would be expected to be below the level of significance when considering the State's and County's GHG emissions targets for 2020 of 427 million metric tons and 108 million metric tons, respectively, per year. For a 50-percent conversion to paper carryout bag use, the LCA results for the entire County, including the City of Pasadena, would be equivalent to 0.00002 metric ton of CO_{2e} per year per capita, which would not conflict with the goals of AB 32 to reduce emissions by the year 2020 to approximately 9.6 metric tons per capita.

TABLE 3.8-3
ESTIMATED DAILY OPERATIONAL EMISSIONS DUE TO INCREASED VEHICLE TRIPS FROM 50-PERCENT CONVERSION FROM PLASTIC TO PAPER CARRYOUT BAGS

Emission Sources	CO_2 Emissions (Pounds/Day)	CO_2 Emissions (Metric Tons/Year)	CO_2 Emissions per Capita (Metric Tons/Year)[1]
2 delivery truck trips in the City of Pasadena	32.76	5.42	0.00003
96 delivery truck trips in the entire County	1,572.35	260.32	0.00002

KEY: CO_2 = carbon dioxide
SOURCES:
1. URBEMIS 2007 v9.2.4 (see Appendix A)
2. U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder. Available at: www.census.gov
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix C: Calculation Data, p. 12-55. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.
NOTE:
1. Per-capita emissions were calculated using the City's 2010 service population of 200,226, which includes 137,122 residents and 63,104 employees.

Once disposed of by customers, carryout bags that are not recycled are disposed in a landfill to decompose and degrade. Depending on the type and materials used, a carryout bag will degrade at various rates. When paper carryout bags degrade in aerobic conditions at a landfill, the GHG methane (CH_4) is produced. As analyzed in the certified EIR based on the Ecobilan LCA, a 50-percent conversion from the use of plastic carryout bags to the use paper carryout bags would be expected to generate approximately 70,250 metric tons of CO_{2e} per year, which is equivalent to approximately 0.0066 metric ton CO_{2e} per year per capita if all the 88 incorporated cities of the County adopted similar plastic bag ordinances.[19] Since Pasadena is one of the 88 incorporated cities, the certified EIR accounts for impacts from GHG emissions associated with the proposed ordinance. When considered separately, the proposed ordinance would generate approximately 1,572 metric tons of CO_{2e} per year, which is equivalent to approximately 0.0079 metric ton CO_{2e} per year per capita (Appendix A and Table 3.8-4, *Estimated GHG Emissions Increases Due to End of Life Based on Ecobilan Data*). Using the Boustead data, a 50-percent conversion from the use of plastic carryout bags to the use paper carryout bags would be expected to result in an increase of

[18] The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). According to infoUSA, approximately 61 percent of Pasadena stores are $<$10,000 square feet and 39 percent are $\geq$ 10,000 square feet. The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).

[19] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-50. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

184,621 metric tons of CO_{2e} per year throughout the County if all the 88 incorporated cities of the County adopted similar plastic bag ordinances.[20] Of that amount, the proposed ordinance would be responsible for an increase of approximately 4,131 metric tons of CO_{2e} per year (Appendix A and Table 3.8-5, *Estimated Increase in GHG Emissions Due to End of Life Based on Boustead Data*). The Boustead results are likely to be overestimates, as emissions from active landfills in the County are strictly controlled by SCAQMD Rule 1150.1, Control of Gaseous Emissions from Municipal Solid Waste Landfills, and Antelope Valley Air Quality Management District Rule 1150.1, Control of Gaseous Emissions from Active Landfills, and the new state regulations for methane emissions from landfills in accordance with AB 32. Nevertheless, the emissions per capita from the decomposition of bags in landfills would be significantly below the selected emission significance threshold of 6.6 metric tons CO_{2e} per year per capita service population (Tables 3.8-4 and 3.8-5). The end-of-life GHG emission impacts from a 50-percent conversion from plastic to paper carryout bags would be expected to be below the level of significance when considering the State's and County's GHG emissions targets of 427 million metric tons and 108 million metric tons per year, respectively, to be achieved by the year 2020. For a 50-percent conversion to paper carryout bags, the LCA results for the entire County, including the City of Pasadena, would be 0.0066 metric ton of CO_{2e} per year per capita, which would not conflict with the goals of AB 32 to reduce emissions to approximately 9.6 metric tons per capita by the year 2020.

TABLE 3.8-4
ESTIMATED INCREASE IN GHG EMISSIONS DUE TO END OF LIFE BASED ON ECOBILAN DATA

Emission Sources	GHG Emissions	
	50-percent Conversion from Plastic to Paper Carryout Bags[1,2]	
	Metric Tons CO_{2e} Per Year[3]	Metric Tons CO_{2e} Per Year Per Capita
City ordinance – 108 stores within Pasadena[4]	+1,572	+0.0079
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	+70,250	+0.0066

KEY: GHG = greenhouse gas

SOURCES:

1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-50. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.
3. U.S. Environmental Protection Agency. November 2008. *Municipal Solid Waste in the United States: 2007 Facts and Figures*. Washington, DC. Available at: http://www.epa.gov/waste/nonhaz/municipal/pubs/msw07-rpt.pdf
4. U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder. Available at: www.census.gov

NOTES:

1. Assuming 36.8 percent of paper carryout bags are diverted from landfills and 11.9 percent of plastic carryout bags are diverted from landfills, based on the 2007 USEPA recycling rates.
2. Per-capita emissions were calculated using the City's 2010 service population of 200,226 (137,122 residents + 63,104 employees).
3. Positive numbers indicate the extent of the increase in energy consumption that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.
4. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on: 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).

[20] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-52. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

TABLE 3.8-5
ESTIMATED INCREASE IN GHG EMISSIONS DUE TO END OF LIFE BASED ON BOUSTEAD DATA

Emission Sources	GHG Emissions	
	50-percent Conversion from Plastic to Paper Carryout Bags[2]	
	Metric Tons CO_{2e} Per Year[3]	Metric Tons CO_{2e} Per Year Per Capita[3]
City ordinance – 108 stores within Pasadena[1]	+4,131	+0.0206
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	+184,621	+0.0174

KEY:
CO_{2e} = carbon dioxide equivalent
GHG = greenhouse gas
SOURCES:
1. Boustead Consulting and Associates Ltd. 2007. Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper. Prepared for: Progressive Bag Affiliates.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-52. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.
3. U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder, Available at: www.census.gov
NOTE:
1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on: 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. Per-capita emissions were calculated using the City's 2010 service population of 200,226, which includes 137,122 residents and 63,104 employees.
3. Positive numbers indicate the extent of the increase in energy consumption that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.

However, as with the approved ordinances, the indirect impacts to GHG emissions from the end-of-life of paper carryout bags may have the potential to be cumulatively considerable, depending on the actual percentage conversion to paper carryout bags. Based on the threshold, "generate greenhouse gas emissions, either directly or indirectly that may have a significant effect on the environment," the conservative scenario of 50-percent conversion to paper carryout bags as set forth in Table 3.8-4 would be expected to yield potentially cumulatively considerable GHG emissions impacts due to the end of life of paper carryout bags in landfills. However, if, like the fees implemented in Ireland and Washington, D.C., the 10-cent charge on paper carryout bags reduces the conversion to paper carryout bags by 80 to 90 percent, indirect impacts to GHG emissions could be minimal and less than significant when considered cumulatively. However, the City cannot *definitely* determine how many consumers would switch from plastic to paper carryout bags, how many paper carryout bags would end up in the landfills, or the accuracy of LCA results; therefore, the City has assumed that indirect impacts resulting from the end of life of paper carryout bags would be potentially significant on a cumulative level, which is the same conclusion as the County's certified EIR. Accordingly, the City of Pasadena proposes to adopt a Statement of Overriding Considerations. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to direct or indirect GHG emissions.

(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant direct impacts to GHG emissions.[21] However, because there are no federal, state, regional, or local regulations establishing significance on a cumulative level, and because the County evaluated the impacts of the approved ordinances based on a conservative worst-case scenario, it was determined that the indirect impacts of the approved ordinances may have the potential to be cumulatively significant.[22] For the proposed ordinance, it was also determined that GHG emissions due to the end of life of paper carryout bags would have the potential to be cumulatively significant [see response to *(a)* above]. The calculations presented in *(a)* above are based on a worst-case scenario where every store larger than 10,000 square feet currently uses 10,000 plastic carryout bags per day. The worst-case scenario is intentionally overestimated, as statewide data indicate that closer to 5,000 plastic carryout bags are used per day.[23] The same may be true of the assumption that 5,000 plastic carryout bags are used per day by stores smaller than 10,000 square feet. The estimate of 5,000 plastic carryout bags per store per day was used to conservatively evaluate potential impacts from the worst-case scenario. However, assuming the proposed ordinance causes an indirect increase in disposal of paper carryout bags, GHG emissions from active landfills in the County are strictly controlled by SCAQMD Rule 1150.1 and the new state requirements that regulate methane emissions from landfills pursuant to AB 32. However, the City cannot definitely determine how many consumers would switch from plastic to paper carryout bags, how many paper carryout bags would end up in landfills, or the accuracy of LCA results; therefore, the City has assumed that indirect impacts resulting from the end of life of paper carryout bags would be potentially significant on a cumulative level, which is the same conclusion as the County's certified EIR. Accordingly, the City of Pasadena proposes to adopt a Statement of Overriding Considerations. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to GHG emissions related to conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

[21] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-48. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[22] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-52. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[23] Dona Sturgess, California Department of Resources Recycling and Recovery, Sacramento, CA. 29 April 2010. E-mail to Luke Mitchell, County of Los Angeles, Department of Public Works, Alhambra, CA.

3.9 HAZARDS AND HAZARDOUS MATERIALS

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to hazards and hazardous materials than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Hazards and hazardous materials within the City of Pasadena (City) were evaluated based on a review of the City of Pasadena General Plan.[2]

Hazardous waste can pose a potential or substantial hazard to human health or the environment when improperly managed. Designated hazardous waste possesses at least one of four defined characteristics–ignitability, corrosivity, reactivity, or toxicity–or appears on special U.S. Environmental Protection Agency lists.[3]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts related to hazards and hazardous materials was evaluated in relation to eight questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[4,5]

Would the proposed ordinance:

(a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in the EIR.[6] The transport and disposal of hazardous materials routinely occur within the City.[7] However, the proposed ordinance would not involve the transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act.[8] The proposed ordinance would encourage the use of reusable bags at certain stores, but the definition of a "reusable bag" within the proposed ordinance specifies that the bags must not contain lead, cadmium, or any other heavy metal in toxic amounts. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to hazards and hazardous materials in relation to creating a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[3] *Code of Federal Regulations*, Title 40, Chapter 1, Part 261.

[4] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[5] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[6] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[7] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[8] *Code of Federal Regulations*, Title 40, Chapter 1, Parts 106–180.

(b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in the EIR.[9] The transport and disposal of hazardous materials routinely occur within the City.[10] However, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores, which could potentially reduce the prevalence of plastic bags in the litter stream and could result in a reduction in the accidental release of plastic bags into the environment. The proposed ordinance would not involve any type of construction or activities that would require the use of hazardous materials or that would result in the accidental release of hazardous materials into the environment. Therefore, compared with the approved ordinance, the proposed ordinance would not be expected to result in new or substantially more adverse impacts to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in the EIR.[11] Numerous schools exist within the City; however, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not include any physical elements, or otherwise, that would involve the emission or handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse impacts related to hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

(d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in

[9] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[10] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

the EIR.[12] Although there are over 200 hazardous materials sites within the City,[13] the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail land development or any physical elements that would be located on a physical site or sites, including hazardous materials sites. Therefore, as with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse impacts related to being located on a hazardous waste site.

(e) For a proposed project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in the EIR.[14] The proposed ordinance would not be expected to result in impacts to hazards and hazardous materials in relation to its proximity to an airport and thus would not be expected to result in a safety hazard for people residing or working in the City. The City does not have a public use airport. The nearest airports to the City are (1) the El Monte Airport located at 4233 Santa Anita Avenue #1 in El Monte, California, approximately 4 miles southeast from the City boundary, and (2) the Bob Hope Airport located at 2627 North Hollywood Way in Burbank, California, approximately 10 miles west from the City boundary. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not include elements that would be located on any physical site or sites, including one near a public airport or public use airport or within an airport land use plan. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse impacts related to being located within 2 miles of a public or public use airport.

(f) For a proposed project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in the EIR.[15] The proposed ordinance would not be expected to result in impacts to hazards and hazardous materials due to the location of the proposed ordinance in the vicinity of a private airstrip and the potential for safety hazards for people residing or working in the City. The nearest private airstrip to the City is the JPL-NASA Airstrip, located at 4800 Oak Grove Drive, Pasadena, California 91103. The airstrip is approximately 4 miles away from the center of the City. Although the airstrip is a government facility, access is prohibited from the general public. The proposed ordinance would ban plastic carryout bags issued by certain stores and would not include physical

[12] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D*:* Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[13]City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D*:* Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D*:* Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

elements that would be located on a site or sites within the vicinity of a private airstrip that would be expected to result in impacts related to safety hazards for people residing or working in the vicinity of a private airstrip. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse impacts related to being located within the vicinity of a private airstrip.

(g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in the EIR.[16] The proposed ordinance would not be expected to result in impacts to hazards and hazardous materials related to impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan. The City has developed multiple emergency response and evacuation plans for areas such as Arroyo Seco and Eaton Canyon. [17] However, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail the development of structures or any components that would interfere with emergency response plans or evacuation plans. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to hazards and hazardous materials related to an adopted emergency response plan or emergency evacuation plan.

(h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to hazards and hazardous materials; therefore, this environmental issue area was not carried forward for analysis in the EIR.[18] The portions of the San Rafael Hills and the San Gabriel Mountains within City limits are mapped as being subject to fire hazard due to the steep topography of the area and the presence of flammable vegetation.[19] However, the proposed ordinance would not be expected to result in impacts to hazards and hazardous materials related to exposing people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Although wildlands exist within the City, the proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not contain any components that would expose people or structures to significant risks. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

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[16] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D*:* Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[17] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[18] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D*:* Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[19] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

3.10 HYDROLOGY AND WATER QUALITY

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to hydrology and water quality than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Hydrology and water quality within the City of Pasadena (City) were evaluated in relation to the Safety Element of the City of Pasadena General Plan,[2] the California Regional Water Quality Control Board Basin Plan for the Los Angeles Region,[3] and life cycle assessments that evaluate plastic and paper carryout bags.[4,5]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts related to hydrology and water quality was evaluated in relation to 10 questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[6,7]

Would the proposed ordinance:

(a) Violate any water quality standards or waste discharge requirements?

The proposed ordinance would not be expected to create new or substantially more adverse significant impacts to hydrology and water quality in relation to water quality standards or waste discharge requirements than those disclosed in the certified EIR. The proposed ordinance would be expected to assist the City in achieving water quality standards over time through a net reduction of plastic carryout bag litter. The proposed ordinance would be anticipated to reduce the amount of litter found in water sources such as drain outlets and storm-water runoff that can be attributed to plastic carryout bags, which in turn would be expected to have a positive impact to water quality and waste discharge within the City.

The proposed ordinance would not entail elements that would directly violate the standards or requirements specified in the City of Pasadena General Plan[8] or the Water Quality Control Board Basin Plan for the Los Angeles Region.[9] Adoption of the proposed ordinance would not permit or sanction the violation of any established industry standards, management, or policies.

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[3] California Regional Water Quality Control Board, Los Angeles Region. 13 June 1994. *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Los Angeles, CA.

[4] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[5] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates. Available at: http://www.americanchemistry.com/s_plastics/doc.asp?CID=1106&DID=7212

[6] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[7] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[8] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[9] California Regional Water Quality Control Board, Los Angeles Region. 13 June 1994. *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*. Los Angeles, CA.

Although certain representatives of the plastic bag industry have stated that similar ordinances have the potential to increase the demand for paper carryout bags,[10] the proposed ordinance would include a 10-cent charge on the issuance of paper carryout bags to encourage the use of reusable bags. Nevertheless, the potential for eutrophication during the manufacturing of paper bags was evaluated consistent with the analysis in the certified EIR.[11] Eutrophication occurs when high level of nutrients, such as fertilizers, enter a water body and cause excessive growth of plants, such as algae, resulting in a reduction in water quality.

Several life cycle assessments (LCAs) have analyzed the impacts of bag manufacturing to eutrophication and concluded that paper carryout bag manufacturing releases more pollutants, such as nitrates and phosphates, into water than plastic carryout bag manufacturing.[12,13] As analyzed in the certified EIR based on the Ecobilan LCA, a 50-percent conversion from the use of plastic carryout bags to the use of paper carryout bags would be expected to increase eutrophication by approximately 50.87 additional kilograms of phosphate per day if all 88 incorporated cities of the County adopted similar ordinances.[14] Since Pasadena is one of the 88 cities, the certified EIR accounts for impacts from eutrophication associated with the City's proposed ordinance. The increase in eutrophication just from the City's proposed ordinance would be approximately 1.14 kilograms of phosphate per day, which is approximately 2.2 percent of the 50.87 kilograms of phosphate for the entire County (Appendix A and Table 3.10-1, *Eutrophication Due to Plastic and Paper Carryout Bags Based on Ecobilan Data*).

[10] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco.* Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.4-13 to 3.4-17 and 12-57 to 12-59. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[12] Franklin Associates, Ltd. 1990. *Resource and Environmental Profile Analysis of Polyethylene and Unbleached Paper Grocery Sacks*. Prairie Village, KS.

[13] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-58. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

TABLE 3.10-1
EUTROPHICATION DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON ECOBILAN DATA

Eutrophication Sources	Eutrophication (kilograms phosphate equivalent)	
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[2]
City ordinance – 108 stores within Pasadena[1]	0.23	+1.14
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	10.39	+50.87

SOURCES:

1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-58. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTE:

1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. "+" numbers indicate the extent of the increase in eutrophication that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.

Since there are no known facilities that manufacture and produce paper carryout bags in the County or in the City, there would be no expected impacts to water quality resulting from eutrophication within the City. As stated in the certified EIR, since there are no significance thresholds related to eutrophication and since there are no known paper bag manufacturing facilities located within the County (or in the City), determining the level of significance of eutrophication impacts from bag manufacturing in areas outside of the County would be inapplicable and speculative. Further, any indirect increase in pollutant discharge from manufacturing plants due to increased demand for paper carryout bags or reusable bags would be regulated and controlled by the federal, regional, and local laws applicable to each manufacturing plant. Within the United States, pollutant discharges from bag manufacturing facilities would be required to comply with National Pollutant Discharge Elimination System requirements and permits.

Increased demand for reusable bags may also have the potential to indirectly increase eutrophication impacts from facilities that manufacture reusable bags. However, impacts of reusable bag manufacturing to eutrophication are likely to be less significant than the impacts due to plastic and paper carryout bag manufacturing, when considered on a per-use basis.[15] The proposed ordinance requires that reusable bags be designed for a minimum of 125 uses. Therefore, eutrophication impacts due to the life cycle of a reusable bag would be expected to be significantly lower than the eutrophication impacts of a plastic or paper carryout bag when considered on a per-use basis, and any conversion from the use of plastic carryout bags to reusable bags would be reasonably expected to result in an environmental benefit.

[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.4-15 and 12-58. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to water quality standards or waste discharge requirements.

(b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to groundwater supplies or groundwater recharge.

In 2010, Pasadena Water and Power (PWP) produced 29,534 acre-feet of water, or 9.6 billion gallons, to serve 175,957 customers in the City, parts of Altadena, and other surrounding areas of the County.[16] Approximately 32 percent of the water supply was pumped from local groundwater, 67 percent was imported surface water purchased from The Metropolitan Water District of Southern California (MWD), and the remaining 1 percent was purchased from neighboring water agencies that combine surface water and groundwater.[17] PWP's groundwater is pumped from the Raymond Groundwater Basin, a natural water-bearing zone underlying Pasadena, Altadena, La Cañada-Flintridge, and portions of San Marino and Arcadia. Surface water from streams, rivers, lakes, and precipitation enters the basin area through the natural water cycle.[18]

The proposed ordinance does not require the construction of new structures and therefore would not result in the creation of impervious surfaces that would potentially reduce ground water recharge. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to groundwater levels.

(c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to altering the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site. Two major stream channels transect the City: Arroyo Seco on the west and Eaton Wash on the east. Arroyo Seco has a deeply entrenched channel that originates in the San Gabriel Mountains and flows southward along the eastern side of the San Rafael Hills, eventually flowing into the Los Angeles River.[19] Eaton Wash also emanates from the mountains to the north, is joined by the channels from Pasadena Glen and

[16] City of Pasadena Department of Water and Power. 2010. *2010 Pasadena Water Quality Report*. Pasadena, CA. Available at: http://ww2.cityofpasadena.net/waterandpower/waterquality/2010PasadenaWaterQualityReport.pdf

[17] City of Pasadena Department of Water and Power. 2010. *2010 Pasadena Water Quality Report*. Pasadena, CA. Available at: http://ww2.cityofpasadena.net/waterandpower/waterquality/2010PasadenaWaterQualityReport.pdf

[18] City of Pasadena Department of Water and Power. 2010. *2010 Pasadena Water Quality Report*. Pasadena, CA. Available at: http://ww2.cityofpasadena.net/waterandpower/waterquality/2010PasadenaWaterQualityReport.pdf

[19] City of Pasadena Department of Planning. August 2002. City *of Pasadena General Plan: Safety Element.* Pasadena, CA.

Hastings Canyons and eventually flows into the Rio Hondo River.[20] Both drainages have been modified by flood-control dams near the base of the mountains, and both have been confined to manmade channels or storm drains along their lower reaches in the valley.[21]

The proposed ordinance would not entail construction elements and would not involve any changes to existing physical property that would result in a change in drainage patterns. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation in the City.

(d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to altering the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in flooding on site or off site. Two major stream channels transect the City: Arroyo Seco on the west and Eaton Wash on the east. Both drainages have been modified by flood-control dams near the base of the mountains and both have been confined to manmade channels or storm-drains along their lower reaches in the valley.[22] The proposed ordinance would not entail construction elements and would not involve any changes to existing physical property that would result in a change in drainage patterns. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to alteration of existing drainage patterns of the City or substantially increase the rate or amount of surface runoff in a manner that would result in flooding in the City.

(e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to creating or contributing runoff water that would exceed the capacity of existing or planned storm water drainage systems or providing substantial additional sources of polluted runoff. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City. Due to the thin film used to create plastic carryout bags (0.057 millimeter or less), their low density, and their light weight (which has been noted as anywhere between 6 to 10 times lighter than paper bags), plastic carryout bags have a very high propensity to become airborne and to ultimately contribute to the pollution in storm water drainage systems and runoff. In addition, several studies have shown that plastic film, particularly that of plastic carryout bags, composes a significant portion of the trash collected in storm drains. For example, a study assessing the litter content of storm drain catch basins during the Great Los Angeles River Clean Up estimated the weight and volume of plastic bag litter to be 25 percent and 19 percent, respectively.[23] A California Department of Transportation study of catch basins alongside freeways in Los Angeles indicated that plastic film composed 7 percent and 12

[20] City of Pasadena Department of Planning. August 2002. City *of Pasadena General Plan: Safety Element.* Pasadena, CA.

[21] City of Pasadena Department of Planning. August 2002. City *of Pasadena General Plan: Safety Element.* Pasadena, CA.

[22] City of Pasadena Department of Planning. August 2002. City *of Pasadena General Plan: Safety Element.* Pasadena, CA.

[23] City of Los Angeles. 18 June 2004. *Characterization of Urban Litter*. Prepared by: Ad Hoc Committee on Los Angeles River and Watershed Protection Division. Los Angeles, CA.

percent by mass and volume, respectively, of the total trash collected.[24] Plastic carryout bags that end up in storm drains can clog catch basins, storm drain inlet racks, and other devices, effectively reducing the capacity of the system to channel storm water runoff, which may result in flooding of adjacent areas. The proposed ordinance would have the potential to significantly reduce the amount of plastic carryout bag trash that may originate from the City and be transported from rivers to oceans. A study performed for Washington, District of Columbia, showed that plastic bag trash accounted for 45 percent of the amount of trash collected in tributary streams and 20 percent of the amount of trash collected in rivers.[25] However, the same study found that paper products were not found in the streams except in localized areas and were not present downstream.[26] Paper carryout bags degrade when in contact with water, so they are less likely to accumulate in the storm drain system. Similarly, reusable bags pose less of an issue for the storm drain system as they are not disposed of less frequently because they designed to be used multiple times and are not littered the way plastic carryout bags are littered. Therefore, the proposed ordinance would have the potential to improve the existing drainage capacity by removing a significant source of trash that can clog features of the system and reduce its capacity.[27]

The proposed ordinance would be expected to result in a significant reduction in the consumption of plastic carryout bags and to significantly increase the use of reusable bags within the City. The proposed ordinance would not entail construction elements and would not involve any changes to existing physical property. Consequently, there would be no potential for impacts to hydrology and water quality in relation to creating or contributing runoff water that would exceed the capacity of existing or planned storm water drainage systems or providing substantial additional sources of polluted runoff. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to exceeding the capacity of existing or planned storm water drainage systems or providing substantial additional sources of polluted runoff.

(f) Otherwise substantially degrade water quality?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to otherwise substantially degrading water quality. Water quality and use within California is regulated by the State Water Resources Control Board. The proposed ordinance would not entail construction elements and would not involve any changes to existing physical property that would adversely affect water quality. Further, although manufacturing facilities for paper and plastic carryout bags could potentially release pollutants that may affect water quality, the discharge of pollutants locally and nationally is regulated by the U.S. Environmental Protection Agency and the Regional Water Quality Control Boards under the federal Clean Water Act (CWA). Pollutant discharges from manufacturing facilities would be required to comply with the CWA. Further, as noted in the response to (a) above, since there appears to be no manufacturing and production of paper carryout bags in the County or in the City, there would be no expected impacts to water quality due to a potential increase in demand associated with

[24] Combs, Suzanne, John Johnston, Gary Lippner, David Marx, and Kimberly Walter. 2001. *Results of the Caltrans Litter Management Pilot Study*. Sacramento, CA: California Department of Transportation. Available at: http://www.owp.csus.edu/research/papers/papers/PP020.pdf

[25] Anacostia Watershed Society. December 2008. *Anacostia Watershed Trash Reduction Plan*. Prepared for: District of Columbia Department of the Environment. Bladensburg, MD.

[26] Anacostia Watershed Society. December 2008. *Anacostia Watershed Trash Reduction Plan*. Prepared for: District of Columbia Department of the Environment. Bladensburg, MD.

[27] Green Cities California. March 2010. *Master Environmental Assessment on Single-Use and Reusable Bags*. Prepared by: ICF International. San Francisco, CA.

conversion from plastic carryout bags to paper carryout bags. The reduction of plastic bag litter in the litter stream resulting from implementation of the proposed ordinance would be expected to benefit the City. Therefore, compared with the approved ordinances, the proposed ordinances would not be expected to result in new or substantially more adverse significant impacts related to substantial degradation of water quality.

(g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or dam inundation area as shown in the City of Pasadena adopted Safety Element of the General Plan or other flood hazard delineation map?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to the placement of housing within a 100-year flood hazard area. No portions of the City are within a 100-year floodplain identified by the Federal Emergency Management Agency (FEMA). As shown on FEMA map Community Number 065050, most of the City is in Zone X and a few scattered areas are located in Zone D. Both Zone X and Zone D are located outside of the special flood hazard areas subject to inundation by the 1 percent annual chance of flood (100-year floodplain) and no floodplain management regulations are required. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail the construction of housing units. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to placement of housing within a 100-year flood hazard area.

(h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to the placement of structures within a 100-year flood hazard area. No portions of the City are located within a 100-year floodplain identified by FEMA. As shown on FEMA map of Community Number 065050, most of the City is in Zone X and a few scattered areas are located in Zone D. Both Zone X and Zone D are located outside of the special flood hazard areas subject to inundation by the 1 percent annual chance of flood (100-year floodplain) and no floodplain management regulations are required. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail the construction or placement of structures. Therefore, compared with the approved ordinances, the proposed ordinances would not be expected to result in new or substantially more adverse significant impacts related to placement of structures (other than housing) within a 100-year flood hazard area.

(i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to the failure of a levee or dam. The Eaton Wash dam and the Devil's Gate Reservoir are the two primary dams within the City. According to the City General Plan, should the Devil's Gate Reservoir fail catastrophically, most of the water would be confined to the Arroyo Seco channel, but it would impact the Rose Bowl and other developed areas both north and south of Interstate 210. Should the Eaton Wash Dam fail, the inundation would impact residential and commercial areas located downstream of the dam, but north of

Interstate 210.[28] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not include any changes to landforms or any physical elements, and therefore would not result in flooding or expose people to areas that are susceptible to flooding. Therefore, compared with the approved ordinances, the proposed ordinances would not be expected to result in new or substantially more adverse significant impacts related to failure of a levee or dam.

(j) Inundation by seiche, tsunami, or mudflow?

As with the approved ordinances, the proposed ordinance would not be expected to result in impacts to hydrology and water quality in relation to inundation by seiche, tsunami, or mudflow. Specific hazards of concern to Pasadena include earthquakes, landslides, mudflows, dam or reservoir failure, wildland and structural fire, and contamination of soil and groundwater resources by hazardous materials associated with some of the research, commercial, and industrial facilities present in the City.[29] Although there are areas located within the City where seiches, tsunamis, or mudflows are potential threats, the proposed ordinance would not entail components that would result in or be subject to a potential threat by such occurrences. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not include any changes to landforms or any physical elements, and therefore would not be expected to impact lakes and/or flood control basins or areas adjacent to any steep-sided slopes covered with soils and/or vegetation. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to inundation by seiche, tsunami, or mudflow.

[28] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[29] City of Pasadena Department of Planning. August 2002. City *of Pasadena General Plan: Safety Element.* Pasadena, CA.

3.11 LAND USE AND PLANNING

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to land use and planning from those disclosed in the certified 2010 Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Land use and planning within the City of Pasadena (City) was evaluated in light of the adopted plans, including the City of Pasadena General Plan[2] and the Green City Action Plan.[3]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts related to land use and planning was evaluated in relation to three questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[4,5]

Would the proposed ordinance:

(a) Physically divide an existing community?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to land use and planning; therefore, this environmental issue area was not carried forward for analysis in the EIR.[6] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City. Specifically, the proposed ordinance would require that no store subject to the proposed ordinance would be allowed to make available or distribute plastic bags to customers and would place a charge of 10 cents on the issuance of paper carryout bags. The proposed ordinance would not involve construction, or renovation of a site that would physically divide an established community. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to physical division of an established community.

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element*. Pasadena, CA.

[3] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[4] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[5] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[6] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D*, Initial Study*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

(b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to land use and planning; therefore, this environmental issue area was not carried forward for analysis in the EIR.[7]

A review of the Land Use element of the City of Pasadena General Plan identifies Policy 9.5 pursuant to the goal of protecting the natural environment. Policy 9.5 encourages and promotes stewardship of Pasadena's natural environment, including water conservation, clean air, natural open space protection, and recycling.[8] The proposed ordinance would comply with Policy 9.5 of the City of Pasadena General Plan Land Use element, as the reduced consumption and disposal of plastic and paper carryout bags would promote the stewardship of Pasadena's natural environment. Action 4 in the Green City Action Plan for the City sets the goal of achieving zero waste to landfills and incinerators by 2040.[9] The Green City Action Plan notes that one of the first steps needed to achieve this goal includes the need to work in collaboration with local grocery stores and supermarkets to set a reduction target of a given quantity of disposable grocery bags.[10] The proposed ordinance would comply directly with Action 4 in the Pasadena Green City Action Plan. In addition, the proposed ordinance would comply with Action 5 to reduce the use of a disposable, toxic, or non-renewable product category by 50 percent by 2012, and Action 12 to protect critical habitat and other key habitat characteristics from unsustainable development.[11] Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to a conflict with adopted or proposed land use plans, policies, or regulations and would support several City adopted plans and policies for environmental conservation and stewardship.

(c) Conflict with any applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP)?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to land use and planning; therefore, this environmental issue area was not carried forward for analysis in the EIR.[12] According to the National Community Conservation Planning (NCCP) program of the California Department of Fish and Game, the only NCCP planning region[13] within the County of Los Angeles is the Palos Verdes Peninsula NCCP, located approximately 27 miles southwest of the City and

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[8] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Land Use Element.* Pasadena, CA.

[9] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[10] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[11] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[12] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[13] California Department of Fish and Game. April 2011. *Summary of Natural Community Conservation Plans (NCCPs) April, 2011*. Available at: http://www.dfg.ca.gov/habcon/nccp/

addresses the conservation of most of the coastal sage scrub habitat as well as other habitats on the Palos Verdes Peninsula.[14] There are no adopted NCCPs or Habitat Conservation Plans (HCPs) that would apply to the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to a conflict with any adopted HCP or NCCP.

[14] U.S. Fish and Wildlife Service. Accessed on: 15 August 2011. *Natural Community Conservation Planning (NCCP): NCCP Plan Summary – Palos Verdes Peninsula.* Available at: http://www.dfg.ca.gov/habcon/nccp/status/PalosVerdes/

3.12 MINERAL RESOURCES

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to mineral resources from those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Mineral resources within the City of Pasadena (City) were evaluated with regard to the California Geological Survey publication,[2] County of Los Angeles (County) General Plan,[3] and City of Pasadena General Plan.[4]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to mineral resources was evaluated in relation to two questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[5,6]

Would the proposed ordinance:

(a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to mineral resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[7] Based on a review of California Geological Survey publications, there are no known mineral resources of statewide or regional importance located within the City.[8]

According to *Mines and Minerals Producers Active in California (1997–1998)*, there are 25 active mines located within the County.[9] The County contains active sand and gravel, dimension stone, clay, decorative rock, and tungsten producers. However, there are no mining districts located in or around the vicinity of the City. The proposed ordinance would ban plastic carryout bags issued at certain stores and does not propose to modify any landforms or otherwise block or reduce accessibility to mineral resources; therefore, the proposed ordinance would not affect the

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] California Department of Conservation, California Geological Survey. [1966] Reprint released 13 March 2008. *Bulletin 189: Minerals of California*. Centennial Volume (1866–1966). Los Angeles, CA.

[3] County of Los Angeles Department of Regional Planning. November 1980. *County of Los Angeles General Plan, Conservation/Open Space Element*. Los Angeles, CA.

[4] City of Pasadena Department of Planning. 17 February 1976. *City of Pasadena General Plan: Conservation Element*. Pasadena, CA.

[5] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[6] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[8] California Department of Conservation, California Geological Survey. [1966] Reprint released 13 March 2008. *Bulletin 189: Minerals of California*. Centennial Volume (1866–1966). Los Angeles, CA.

[9] California Department of Conservation, California Geological Survey. Revised 1999. *Mines and Mineral Producers Active in California (1997–1998)*. Special Publication 103. Los Angeles, CA.

extraction of mineral resources. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to the loss of availability of a known mineral resource.

(b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to mineral resources; therefore, this environmental issue area was not carried forward for analysis in the EIR.[10] Based on a review of California Division of Mines and Geology publications, in conjunction with the Conservation elements of the County General Plan and the City of Pasadena General Plan, there are no known mineral resources of state-wide or regional importance located within the City.[11,12,13] Furthermore, the proposed ordinance would ban plastic carryout bags issued at certain stores and does not propose to modify any landforms or otherwise block or reduce accessibility to mineral resources; therefore, the proposed ordinance would not be expected to alter the availability of locally important mineral resources. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to the loss of availability of a known locally important mineral resource recovery site.

[10] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[11] California Department of Conservation, California Geological Survey. [1966] Reprint released 13 March 2008. *Bulletin 189: Minerals of California*. Centennial Volume (1866–1966). Los Angeles, CA.

[12] City of Pasadena Department of Planning. 17 February 1976. *City of Pasadena General Plan, Conservation Element.* Pasadena, CA.

[13] County of Los Angeles Department of Regional Planning. November 1980. *County of Los Angeles General Plan, Conservation/Open Space Element*. Los Angeles, CA.

3.13 NOISE

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to noise than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Noise within the City of Pasadena (City) was evaluated with regard to the Noise Control Ordinance of the County of Los Angeles (County),[2] the Noise Restrictions Ordinance of the City,[3] and the City of Pasadena General Plan.[4] The potential for the proposed ordinance to result in new or substantially more adverse significant impacts related to noise was evaluated in relation to six questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[5,6]

Would the proposed ordinance result in:

(a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to noise; therefore, this environmental issue area was not carried forward for analysis in the EIR.[7] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City. The City has a wide range of noise environments, from quiet residential and rural areas to relatively noisy commercial and industrial areas. Major sources of noise include, but are not limited to, freeway and highway traffic, street traffic, future light rail, commercial/industrial activity, and the central arroyo.[8] The method commonly used to quantify environmental noise involves evaluation of all frequencies of sound, with an adjustment to reflect the constraints of human hearing. Since the human ear is less sensitive to low and high frequencies than to midrange frequencies, noise measurements are weighted more heavily within those frequencies of maximum human sensitivity in a process called "A-weighting." A measured noise level is called the A-weighted sound level measured in A-weighted decibels, written as dBA. The City has set guidelines for the maximum desirable noise within certain existing land uses within the City.[9]

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] County of Los Angeles. 1978. *Noise Control Ordinance of the County of Los Angeles*. Ordinance 11778, Section 2 (Article 1, Section 101), and Ordinance 11773, Section 2 (Article 1, Section 101). Available at: http://ordlink.com/codes/lacounty/index.htm

[3] City of Pasadena. 2008. *Noise Restrictions Ordinance*. Title 9, Chapter 9.36. Ordinance 7150. Available at: http://library.municode.com/index.aspx?clientID=16551&stateID=5&statename=California

[4] City of Pasadena Department of Planning. December 2002. *City of Pasadena General Plan: Revised Noise Element*. Pasadena, CA.

[5] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[6] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinance to Ban Plastic Carryout Bags in the Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[8] City of Pasadena Department of Planning. December 2002. *City of Pasadena General Plan: Revised Noise Element*. Pasadena, CA.

[9] City of Pasadena Department of Planning. December 2002. *City of Pasadena General Plan: Revised Noise Element*. Pasadena, CA.

The proposed ordinance aims to significantly reduce the amount of litter in the City that can be attributed to plastic carryout bags, which would potentially lead to a reduction in the amount of waste transported throughout the City. Although certain representatives of the plastic bag industry have stated that similar ordinances have the potential to increase the use, disposal, and transport of paper carryout bags,[10] the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags to encourage the use of reusable bags, thereby reducing the total number of carryout bags used, disposed of, and transported throughout the City compared to existing conditions. Although the number of vehicles on the roads does affect ambient noise levels, neither the decrease in vehicles transporting plastic carryout bags nor the potential increase in the number of vehicles transporting paper carryout and reusable bags would be on a scale large enough to result in a discernable change in noise levels around roadways in areas in and around the City.

Although the proposed ordinance is expected to alter the current demand for plastic and paper carryout bags and reusable bags, there are no paper bag manufacturing plants located in the County or in the City. It is assumed that bag manufacturing facilities would be located within areas zoned for industrial uses where noise-sensitive receptors would not be expected to be impacted and where higher noise levels are permitted. The facilities would also be required to comply with the relevant local or County noise ordinances. There are no such facilities proposed as part of this ordinance; therefore, as compared with the approved ordinance, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to exposure or generation of noise levels in excess of established standards.

(b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to noise; therefore, this environmental issue area was not carried forward for analysis in the EIR.[11] The City does not have specific guidelines for groundborne vibration or groundborne noise levels. The County deems it a violation of the Noise Control Ordinance to operate or permit the operation of any device that creates vibration that is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on a public space or public right-of-way. The County Noise Control Ordinance considers the perception threshold to be a motion velocity of 0.01 inch per second over the range of 1 to 100 Hertz.[12]

The proposed ordinance aims to significantly reduce the amount of litter in the City that can be attributed to the use of plastic carryout bags, which would potentially lead to a reduction in the amount of waste transported throughout the City. Although certain representatives of the plastic bag industry have stated that similar ordinances have the potential to increase the use, disposal,

[10] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[12] County of Los Angeles. 1978. *Noise Control Ordinance of the County of Los Angeles*. Ordinance 11778, Section 2 (Article 1, Section 101), and Ordinance11773, Section 2 (Article 1, Section 101). Available at: http://ordlink.com/codes/lacounty/index.htm

and transport of paper carryout bags,[13] the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags to encourage the use of reusable bags, thereby resulting in a reduction in the total number of carryout bags used, disposed of, and transported throughout the City compared to existing conditions. Although the number of vehicles on the roads does affect vibration levels in the roadway vicinity, neither the decrease in the number of vehicles transporting plastic bags nor the potential increase in the number of vehicles transporting paper carryout bags and reusable bags would likely be on a scale large enough to discernibly change groundborne vibration or groundborne noise levels at sensitive receptors near roadways in the City.

Although the proposed ordinance would be expected to alter the current demand for plastic and paper carryout bags and reusable bags, there are no paper bag manufacturing plants located in the County or in the City. It is assumed that paper bag manufacturing facilities would be located within areas zoned for industrial uses, where receptors sensitive to vibration would not be expected to be impacted and where higher noise levels are permitted. The facilities would be required to comply with the relevant local or County noise ordinances. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to generation of excessive groundborne vibration or groundborne noise.

(c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to noise; therefore, this environmental issue area was not carried forward for analysis in the EIR.[14] The County and Pasadena Noise Restrictions Ordinance does not define "substantial." In general, one way of estimating a person's subjective reaction to a new noise is to compare the new noise with the existing noise environment to which the person has become adapted; for example, the increase over the so-called "ambient" noise level. An increase of 1 dBA over the ambient noise level cannot be perceived unless it occurs in carefully controlled laboratory experiments; a 3-dBA increase is considered as a just-perceivable difference; an increase of at least 5 dBA is a noticeable change, thereby causing community response and often being considered a significant impact; and a 10-dBA increase is subjectively heard as approximately a doubling in loudness, almost always causing an adverse community response. As a 5-dBA increase is often considered a significant increase, in lieu of a City standard, this analysis will consider an increase in noise levels of 5 dBA to be considered substantial.

A doubling of traffic volumes on a roadway would be expected to result in a 3-dBA increase in noise generated by traffic, which is the human threshold for perceiving a change in the ambient noise level. Implementation of the proposed ordinance would not be expected to generate a substantial number of vehicle trips and would not have the potential to double traffic volumes on the roadways in and around the City. Although the proposed ordinance is expected to alter the current demand for plastic and paper carryout bags and reusable bags, it is assumed that existing and new manufacturing facilities would be located in areas zoned for industrial uses, where noise-

[13] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

sensitive receptors would not be expected to be impacted and where higher noise levels are permitted. Consequently, any increase in ambient noise levels would not be considered a significant impact. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to permanent increases in ambient noise levels.

(d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to noise; therefore, this environmental issue area was not carried forward for analysis in the EIR.[15] The proposed ordinance would not include components that would be sources of temporary or periodic noise. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to a substantial temporary or periodic increase in ambient noise levels within the City.

(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to noise; therefore, this environmental issue area was not carried forward for analysis in the EIR.[16] The City does not have a public use airport. The nearest airports to the City are the El Monte Airport located at 4233 Santa Anita Avenue #1 in El Monte, California, approximately 4 miles southeast from the City boundary, and the Bob Hope Airport located at 2627 North Hollywood Way in Burbank, California, approximately 10 miles west from the city boundary. The proposed ordinance would not require people to be located or to work near any public airport. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to public airports.

(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to noise; therefore, this environmental issue area was not carried forward for analysis in the EIR.[17] The proposed ordinance would not require people to be located or to work near any private airstrips. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to private airstrips.

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[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[16] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[17] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

3.14 POPULATION AND HOUSING

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to population and housing from those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Population and housing within the City of Pasadena (City) were evaluated with regard to regional data and forecasts for population and housing.[2,3]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to population and housing was evaluated in relation to three questions recommended for consideration by the State California Environmental Quality Act (CEQA) Guidelines and the City of Pasadena Environmental Checklist.[4,5]

Would the proposed ordinance:

(a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to population and housing; therefore, this environmental issue area was not carried forward for analysis in the EIR.[6] Pursuant to State CEQA Guidelines Section 15064.7, typical established local thresholds of significance for housing and population growth include effects that would induce substantial growth or concentration of a population beyond General Plan projections; alter the location, distribution, density, or growth rate of the population beyond that projected in the General Plan; result in a substantial increase in demand for additional housing; or create a development that significantly reduces the ability of the City to meet housing objectives set forth in the General Plan.[7]

According to the most recently available U.S. Census data, the City's population was 137,122 in 2010,[8] which is a 2.4 percent increase from a population of 133,936 in 2000 and a 4.2 percent increase from a population of 131,591 in 1990.[9] Pasadena is the seventh-largest city in the County of Los Angeles. Over the past 50 years, the City's population has increased, on average, by less

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. July 2010. *City of Pasadena General Plan: Housing Element*. Pasadena, CA.

[3] U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder. Available at: www.census.gov

[4] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[5] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[6] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[7] City of Pasadena Department of Planning. July 2010. *City of Pasadena General Plan: Housing Element*. Pasadena, CA.

[8] U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder. Available at: www.census.gov

[9] U.S. Census Bureau. 1990. 1990 Summary Tape File (STF 1) – 100-Percent Data, Table P001. Available at: www.census.gov

than 1 percent annually. However, population growth in Pasadena has largely followed the development of housing.[10]

The proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City. As such, the proposed ordinance would not be anticipated to increase the demand for new housing nor would it require expansion of existing roadways or the construction of new homes. Population growth within the City would remain consistent with the existing population growth projection because the proposed ordinance would not entail development or other features that would be expected to shift or influence the growth or migration rates within the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to inducing substantial direct or indirect population growth.

(b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to population and housing; therefore, this environmental issue area was not carried forward for analysis in the EIR.[11] The proposed ordinance would aim to reduce the amount of litter that can be attributed to plastic carryout bags within the City and would not entail any components that would result in the removal or displacement of existing housing. The areas that would be affected by the proposed ordinance provide residences and employment for approximately 137,122 people in the City.[12] The implementation of the proposed ordinance would have no effect on the City's projected population and housing growth and would not necessitate construction of replacement housing. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to the displacement of substantial amounts of existing housing.

(c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to population and housing; therefore, this environmental issue area was not carried forward for analysis in the EIR.[13] The proposed ordinance would aim to reduce the amount of litter that can be attributed to plastic carryout bags within the City and would not contain any components that would result in the displacement of substantial numbers of people. Implementation of the proposed ordinance would not be expected to lead to an increase in population, but rather would be expected to be consistent with the City's projected population growth. Therefore, compared with the approved ordinances,

[10] City of Pasadena Department of Planning. July 2010. *City of Pasadena General Plan: Housing Element*. Pasadena, CA.

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[12] U.S. Census Bureau. 2010. American Community Survey 2010. American Fact Finder. Available at: www.census.gov

[13] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to the displacement of substantial numbers of people.

3.15 PUBLIC SERVICES

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to public services than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordnances).[1] Public Services within the City of Pasadena (City) were evaluated based on a review of the City of Pasadena General Plan[2] and relevant Web sites.[3,4]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to public services was evaluated in relation to one question recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[5,6]

(a) Would the proposed ordinance result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Fire protection?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to public services; therefore, this environmental issue area was not carried forward for analysis in the EIR.[7] The City has eight fire stations.[8] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores in the City and would not entail any development or features that would be expected to affect population growth in the City in such a way that would lead to an increase in the demand for fire protection services or related facilities. In addition, the proposed ordinance would not include the provision of new or physically altered fire protection services. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to fire protection.

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

[3] City of Pasadena Fire Department. Accessed on: 8 August 2011. *City of Pasadena: Fire Department*. Available at: http://www.ci.pasadena.ca.us/Fire/Station_Directory/

[4] City of Pasadena Unified School District. Accessed on: 8 August 2011. *City of Pasadena Unified School District*. Available at: http://pasadenausd.org

[5] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[6] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[8] City of Pasadena Fire Department. Accessed on: 8 August 2011. *City of Pasadena: Fire Department*. Available at: http://www.ci.pasadena.ca.us/Fire/Station_Directory/

ii) Libraries?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to public services; therefore, this environmental issue area was not carried forward for analysis in the EIR.[9] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores in the City and would not entail any development or features that would be expected to affect population growth in the City in such a way that it would lead to an increase in the demand for and use of libraries. Furthermore, the proposed ordinance would not include elements that would directly or indirectly require the alteration or construction of libraries. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to libraries.

iii) Parks?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to public services; therefore, this environmental issue area was not carried forward for analysis in the EIR.[10] The City owns and/or controls approximately 635 gross acres of public parkland in 23 sites.[11] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores in the City and would not entail any development or features that would be expected to affect population growth in the City in such a way that would lead to an increase in the demand for and use of park facilities. Furthermore, the proposed ordinance, which would aim to significantly reduce the amount of litter that can be attributed to plastic carryout bags, would potentially lead to an improvement in the aesthetic appearance of existing recreational facilities and open spaces in the City. As found in the County of Los Angeles staff report on plastic bags, due to their expansive and lightweight characteristics, plastic bags are easily carried by wind to become entangled in brush, tossed along freeways, and caught on fences, thereby becoming eyesores.[12] Furthermore, the distinct white or bright colors of plastic bags and the difficulty of collecting the bags result in a greater potential for visual impacts than other types of litter. The proposed ordinance would not physically alter any existing parks in the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to parks.

[9] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[10] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[11] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element.* Pasadena, CA.

[12] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

ii) Police protection?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to public services; therefore, this environmental issue area was not carried forward for analysis in the EIR.[13] The Pasadena Police Department headquarters is located at 207 North Garfield Avenue, Pasadena, California 91101-1791. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores in the City and would not entail any development or features that would be expected to affect population growth in the City in such a way that would lead to an increase in the demand for police protection. In addition, the proposed ordinance would not include or require the provision of new or physically altered facilities for police protection services. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to police protection.

iii) Schools?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to public services; therefore, this environmental issue area was not carried forward for analysis in the EIR.[14] The City has 33 public school facilities serving pre-school through high school–aged children.[15] In addition, the City also has several colleges and/or technical schools such as the California Institute of Technology, Pasadena Art Center, Pasadena City College, Fuller Theological Seminary, and Le Cordon Bleu Culinary Arts Academy. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores in the City and would not entail any development or features that would be expected to affect population growth in the City in such a way that would lead to an increase in the demand for and use of schools or related facilities. In addition, the proposed ordinance would not include or require the provision of new or physically altered governmental facilities related to schools. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to schools.

v) Other public facilities?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to public services; therefore, this environmental issue area was not carried forward for analysis in the EIR.[16] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores in the City and would not entail any development or features that would be expected to affect population growth in the City in such a way that it would lead to an increase in the demand for and use of

[13] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[15] City of Pasadena Unified School District. Accessed on: 8 August 2011. *City of Pasadena Unified School District.* Available at: http://pasadenausd.org

[16] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

other public facilities. Furthermore, the proposed ordinance would not include elements that would directly or indirectly require residential development or the construction of public facilities. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to other public facilities.

3.16 RECREATION

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to recreation from those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Recreation in the City of Pasadena (City) was evaluated with regard to information contained in the City of Pasadena General Plan[2] and the potential for growth-inducing impacts as evaluated in Section 3.13, *Population and Housing*.

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to recreation was evaluated in relation to two questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[3,4]

(a) Would the proposed ordinance increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to recreation; therefore, this environmental issue was not carried forward for the analysis in the EIR.[5] The City owns and/or controls approximately 635 gross acres of public parkland in 23 sites.[6] The Pasadena Municipal Code (Section 4.17.040) contains three park classifications: Neighborhood Parks (examples: Allendale, Brenner, Defender's, Eaton Blanche, Eaton Sunnyslope, Grant, Gwinn, Hamilton, Jefferson, La Pintoresca, McDonald, San Rafael, Singer, Viña Vieja, and Washington Parks), Community Parks (examples: Central Park, Memorial Park, Robinson Park, Victory Parke, and Villa Parke), and City-wide Parks (examples: Brookside Park, Hahamongna Watershed Park, and Lower Arroyo Park).[7] Pasadena also has a large variety of public outdoor open spaces that cannot be classified as parks but that do fulfill many of the same functions as public parks.[8] Public plazas, paseos, golf courses, and the grounds of museums and historic sites are all examples of this type of open space.[9]

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

[3] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[4] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[5] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[6] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

[7] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

[8] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

[9] City of Pasadena Department of Planning. November 2007. *City of Pasadena General Plan: Green Space, Recreation and Parks Element*. Pasadena, CA.

The proposed ordinance would not contain any components that would increase or impact the demand for the existing recreational facilities. As discussed in Section 3.13 of this Addendum to the EIR, the proposed ordinance would not be expected to cause an increase in residents or visitors because the proposed ordinance would not entail development or other features that would be expected to shift or influence the growth within the City. Furthermore, the proposed ordinance, which would aim to significantly reduce the amount of litter that can be attributed to the use of plastic carryout bags, would potentially lead to an improvement in the aesthetic appearance of existing recreational facilities and open spaces in the City. As found in the County of Los Angeles staff report on plastic bags, due to their expansive and lightweight characteristics, plastic bags are easily carried by wind to become entangled in brush, tossed along freeways, and caught on fences, thereby becoming eyesores.[10] Furthermore, the distinct white or bright colors of plastic bags and the difficulty of collecting the bags result in a greater potential for visual impacts than other types of litter. The proposed ordinance would not be expected to result in a significant increase in the number of people, residents, or visitors who use existing park facilities. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to increased use of existing neighborhood and regional parks or other recreational facilities that would contribute to or accelerate the physical deterioration of existing facilities.

(b) Does the proposed ordinance include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to recreation; therefore, this environmental issue was not carried forward for the analysis in the EIR.[11] The proposed ordinance would not increase or impact the demand for the existing recreational facilities in the City and would not involve include construction or expansion of recreational facilities. The proposed ordinance would have the potential to improve the appearance of recreational facilities by reducing the amount of plastic bag litter in the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to the construction or expansion of recreation facilities.

[10] County of Los Angeles Department of Public Works, Environmental Programs Division. August 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. Available at: http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf

[11] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

3.17 TRANSPORTATION AND TRAFFIC

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to transportation and traffic from those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Transportation and traffic within the City of Pasadena (City) were evaluated in light of the City of Pasadena General Plan,[2] the Congestion Management Plan for the County of Los Angeles (County),[3] and the Transportation Impact Review Current Practice and Guidelines.[4]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts related to transportation and traffic was evaluated in relation to seven questions recommended for consideration by the State California Environmental Quality Act Guidelines and the City of Pasadena Environmental Checklist.[5,6]

Would the proposed ordinance:

(a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to transportation and traffic; therefore, this environmental issue area was not carried forward for analysis in the EIR.[7] The proposed ordinance aims to significantly reduce the amount of litter in the City that can be attributed to the use of plastic carryout bags, which would potentially lead to a reduction in the amount of waste transported throughout the City. Although certain representatives of the plastic bag industry have maintained that similar ordinances have the potential to increase the use, disposal, and transport of paper carryout bags,[8] the proposed ordinance would include a 10-cent charge on paper carryout bags to encourage the use of reusable bags, thereby resulting in a reduction in the total number of carryout bags used, disposed of, and transported throughout the

[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Mobility Element*. Pasadena, CA.

[3] County of Los Angeles Metropolitan Transportation Authority. 2004. *2004 Congestion Management Program for Los Angeles County*. Los Angeles, CA.

[4] City of Pasadena Transportation Planning and Development Division Department of Transportation. August 2005. *Traffic Impact Analysis Report Guidelines*. Pasadena, CA.

[5] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[6] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[7] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[8] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

City compared to existing conditions. Policy 3.1 of the Pasadena General Plan Mobility Element states that the City should make the most efficient use to discourage auto and truck traffic from local streets to bypass congested intersections.[9] A decrease in the number of plastic and paper carryout bags used, delivered, and disposed of within the City would not conflict with this policy. The proposed ordinance would not be expected to generate a substantial number of vehicle trips that would contribute to the existing traffic within the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.

(b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to transportation and traffic; therefore, this environmental issue area was not carried forward for analysis in the EIR.[10] The City participates in the Congestion Management Program (CMP). The CMP is required of every county in California with a population of 50,000 or more (including all of the Southern California Association of Governments six-County area) to qualify for certain state and federal funds. The CMP requires annual development reporting and biennial data collection at designated intersections and roadway segments. The CMP sets performance standards for roads and public transit, and requires the City to meet these standards.[11] The proposed ordinance aims to significantly reduce the amount of litter that can be attributed to the use of plastic carryout bags, which would have the potential to lead to a reduction in the amount of waste transported throughout the County. Although certain representatives of the plastic bag industry have argued that similar ordinances have the potential to result in an increase in the use, disposal, and transportation of paper carryout bags,[12] the proposed ordinance would include a 10-cent charge on the issuance of paper carryout bags to encourage the use of reusable bags, thereby resulting in a reduction in the total number of carryout bags used, disposed of, and transported throughout the City compared to existing conditions. The County congestion management program set the threshold for arterial roadways to achieve a level of service E or better.[13] The proposed ordinance would not directly generate new or additional trips and would not include any new development in the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to transportation and traffic related to conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

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[9] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Mobility Element.* Pasadena, CA.

[10] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[11] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Mobility Element.* Pasadena, CA.

[12] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco.* Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[13] County of Los Angeles Metropolitan Transportation Authority. 2004. *2004 Congestion Management Program for Los Angeles County*. Los Angeles, CA.

(c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to transportation and traffic; therefore, this environmental issue area was not carried forward for analysis in the EIR.[14] The City does not have a public use airport. The nearest airports to the City are the El Monte Airport located approximately 4 miles southeast from the Pasadena city limits at 4233 Santa Anita Avenue #1 in El Monte, California, approximately 4 miles from the Pasadena city boundary, and the Bob Hope Airport located at 2627 North Hollywood Way in Burbank, California, approximately 10 miles west from the Pasadena city boundary. The proposed ordinance would not include any direct physical development, and as such it would not entail elements that would be located near a private or public airport. The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not result in any direct or indirect effects upon air traffic patterns. Therefore, as with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to transportation and traffic related to a change in air traffic patterns that would result in substantial safety risks.

(d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to transportation and traffic; therefore, this environmental issue area was not carried forward for analysis in the EIR.[15] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not entail elements that require construction or would have the potential to result in any direct or indirect effects upon increasing traffic hazards due to a design feature. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to transportation and traffic related to substantially increasing hazards due to a design feature.

(e) Result in inadequate emergency access?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to transportation and traffic; therefore, this environmental issue area was not carried forward for analysis in the EIR.[16] The Pasadena General Plan Mobility Element requires that the City maintain adequate emergency access provisions when evaluating and approving new development projects, investigate solutions for intersections and roadway segments with high accident rates, and coordinate enforcement programs with the Police Department.[17] The proposed ordinance would ban the issuance of plastic

[14] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[15] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[16] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[17] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Mobility Element.* Pasadena, CA.

carryout bags by certain stores and would not include elements that would require or alter the availability of or access to any emergency route within the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to transportation and traffic related to inadequate emergency access.

(f) Result in inadequate parking capacity?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to transportation and traffic; therefore, this environmental issue area was not carried forward for analysis in the EIR.[18] The proposed ordinance would ban plastic carryout bags issued by certain stores and would not include any development or any components that would be expected to result in any direct or indirect effects upon parking capacity. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to inadequate parking capacity.

(g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

As a result of the analysis undertaken in the Initial Study for the certified EIR, it was determined that the approved ordinances would not be expected to result in significant impacts to transportation and traffic; therefore, this environmental issue area was not carried forward for analysis in the EIR.[19] The City promotes alternative transportation methods, such as bicycles, bus, and the Metro Gold Line Light Rail.[20] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores and would not include any components that would be expected to result in any direct or indirect effects upon alternative transportation within the City. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to a conflict with adopted policies, plans, or programs supporting alternative transportation.

[18] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[19] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report.* Appendix D: Initial Study. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[20] City of Pasadena Department of Planning. November 2004. *City of Pasadena General Plan: Mobility Element*. Pasadena, CA.

3.18 UTILITIES AND SERVICE SYSTEMS

This analysis is undertaken to determine if the proposed Ordinance to Ban Plastic Carryout Bags in the City of Pasadena (proposed ordinance) would result in new or substantially more adverse significant impacts in relation to utilities and service systems than those disclosed in the certified Environmental Impact Report (EIR) for the Ordinances to Ban Plastic Carryout Bags in Los Angeles County (approved ordinances).[1] Utilities and service systems within the City of Pasadena (City) were evaluated with regard to the Safety element of the City of Pasadena General Plan,[2] the California Regional Water Quality Control Board (RWQCB) Basin Plan for the Los Angeles Region,[3] the Pasadena Water & Power 2010 Urban Water Management Plan,[4] and a review of life cycle assessments that evaluate plastic and paper carryout bags.[5,6]

The potential for the proposed ordinance to result in new or substantially more adverse significant impacts to utilities and service systems was evaluated in relation to seven questions recommended for consideration by the State California Environmental Quality Act (CEQA) Guidelines and the City of Pasadena Environmental Checklist.[7,8]

Would the proposed ordinance:

(a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts to utilities and services systems.[9] Within the City, there are approximately 3,500 miles of sewer lines ranging from 6 to 42 inches in diameter and 2 sewer pump stations. Ultimately, all wastewater generated within the City is conveyed to regional interceptors within the City or in the adjacent City of San Marino.[10] These regional interceptors are owned and operated by the Los Angeles County Sanitation District (LACSD). No wastewater treatment occurs within the City or the Pasadena Water and Power (PWP) service area.[11] Wastewater generated within the PWP service area is treated by the LACSD at both the Whittier Narrows Water Reclamation Plant (WRP) and San Jose WRP. The Whittier Narrows

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[1] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[2] City of Pasadena Department of Planning. August 2002. *City of Pasadena General Plan: Safety Element.* Pasadena, CA.

[3] California Regional Water Quality Control Board, Los Angeles Region. February 1995. *Water Quality Control Plan: Los Angeles Region*. Monterey Park, CA.

[4] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan.* Pasadena, CA.

[5] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[6] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates.

[7] *California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000–15387, Appendix G.

[8] City of Pasadena. 7 September 2011. Initial Study Template. On File at Sapphos Environmental, Inc., Pasadena, CA.

[9] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-25. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[10] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan.* Pasadena, CA.

[11] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan.* Pasadena, CA.

WRP is located approximately 7 miles southeast of Pasadena near the City of South El Monte.[12] Approximately 15 million gallons per day (MGD) of wastewater is treated for a population of 150,000. Wastewater is treated to a tertiary level in compliance with California Department of Public Health Title 22 standards. The San Jose Creek WRP is located approximately 9 miles southeast of Pasadena near the City of Whittier. The WRP has a treatment capacity of 100 MGD and treats approximately 70 MGD of wastewater for a service area with approximately 1 million people.[13] The City places prohibitions on water waste such as, running automatic sprinklers from 9 a.m to 6 p.m., watering during rain; and excessive water run off from irrigating landscapes or vegetation of any kind.[14] The proposed ordinance would not be expected to cause an exceedance in the treatment requirements for either the Whittier Narrows or San Jose Creek WRP.

The manufacturing processes of plastic carryout bags, paper carryout bags, and reusable bags generate wastewater, but to different extents. Although certain representatives of the plastic bag industry have argued that similar ordinances have the potential to increase the demand for paper carryout bags,[15] the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags to encourage the use of reusable bags. Nevertheless, the potential for wastewater generation during the manufacture of paper bags was evaluated consistent with the analysis in the certified EIR.[16]

As analyzed in the certified EIR based on the Ecobilan LCA, a 50-percent conversion from the use of plastic carryout bags to the use paper carryout bags would be expected to generate approximately 0.21 MGD of wastewater if all the 88 incorporated cities of the County adopted similar plastic bag ordinances.[17] Since Pasadena is one of the 88 incorporated cities in the County, the certified EIR accounts for impacts from wastewater generation associated with the proposed ordinance. When considered separately, the proposed ordinance would generate a negligible amount of wastewater (Appendix A and Table 3.18-1, *Wastewater Generation Due to Plastic and Paper Carryout Bags Based on Ecobilan Data*). The Sanitation Districts of Los Angeles County currently treat approximately 510 MGD.[18] Therefore, an additional 0.21 MGD due to paper carryout bag use throughout the County, including approximately 0.005 MGD in Pasadena, or approximately 0.04 percent of the current amount of wastewater treated per day, would not be a significant increase in wastewater and would not necessitate construction of new wastewater treatment facilities or expansion of existing facilities. It is also important to note that there are no known manufacturing facilities for paper carryout bags located within the County (or the City).

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[12] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan*. Pasadena, CA.

[13] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan*. Pasadena, CA.

[14] City of Pasadena Department of Water and Power. Accessed on: 9 August 2011. *2010 Pasadena Water Quality Report*. Pasadena, CA. Available at: http://ww2.cityofpasadena.net/waterandpower/waterquality/2010PasadenaWaterQualityReport.pdf

[15] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[16] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.5-7 to 3.5-11 and 12-60. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[17] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-60. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[18] Sanitation Districts of Los Angeles County. Accessed on: 8 March 2010. "Wastewater Facilities." Web site. Available at: http://www.lacsd.org/contact/facility_locations/wastewater_facilities.asp

Although the manufacture of reusable bags also will also produce wastewater, it is expected that the amount of wastewater generated will be lower than the amount of wastewater generated by the manufacture of plastic carryout bags when considered on a per-use basis, due to the fact that reusable bags are designed to be reused multiple times.[19] As banning the issuance of plastic bags is expected to increase the use of reusable bags, the wastewater impacts are anticipated to be reduced. The proposed ordinance requires that reusable bags must be designed for a minimum of 125 uses. Therefore, a conversion from plastic carryout bags to reusable bags would be anticipated to have reduced impacts upon wastewater generation.

Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to utilities and service systems related to exceedance of wastewater treatment requirements.

TABLE 3.18-1
WASTEWATER GENERATION DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON ECOBILAN DATA

Wastewater Sources	Wastewater Generation (MGD)	
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[2]
City ordinance – 108 stores within Pasadena[1]	0.02	+0.005
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	0.69	+0.21

SOURCES:
1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-60. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTE:
1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. "+" indicates the increase in wastewater generation that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.

(b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts to utilities and services systems.[20] The proposed ordinance would be expected to result in a significant reduction in the

[19] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-10. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[20] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-25. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

consumption of plastic carryout bags and an increase the use of reusable bags within the City. Although certain representatives of the plastic bag industry have stated that similar ordinances have the potential to increase the demand for paper carryout bags,[21] the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags in order to encourage the use of reusable bags. A potential increase in the production of paper bags and reusable bags would not be expected to increase the requirement for water or wastewater treatment facilities and would not affect the Whittier Narrows or San Jose Creek WRP. As described in the response to (a) above, a 50 percent conversion from the use of plastic carryout bags to the use paper carryout bags in the City would be expected to cause a negligible increase in wastewater generated by paper bag manufacturing facilities. Due to the fact that manufacturing facilities for paper carryout bags are not known to be located within the County (or the City), any increase in wastewater generation due to paper carryout bag manufacturing would not impact wastewater treatment facilities in the County (or the City). Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to utilities and service systems related to expansion or construction of new water or wastewater treatment facilities.

(c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts to utilities and services systems.[22] The City has several storm water projects, which are led by the City Public Works Department. These projects are typically aimed at flood control, monitoring water pollutants, and water quality compliance. [23] The proposed ordinance would ban the issuance of plastic carryout bags by certain stores within the City, which would not be expected to result in an increase in storm water runoff in the City. The anticipated reduction in plastic carryout bag use that would result from implementation of the proposed ordinance would reduce the amount of disposal and potential littering of plastic carryout bags, which would in turn reduce the contribution of plastic carryout bags to runoff and accumulation in storm drains. As such, the proposed ordinance would be expected to indirectly reduce operational impacts associated with maintenance of the storm drain system (*e.g.,* cleaning plastic carryout bag litter out of catch basin racks) and would not increase the potential need for storm drain system improvements.

A study performed for Washington, D.C., showed that plastic bag trash accounted for 45 percent of the amount of trash collected in tributary streams and 20 percent of the amount of trash collected in rivers.[24] However, the same study found that paper products were not found in the streams except in localized areas and were not present downstream.[25] Paper carryout bags degrade when in contact with water, paper carryout bags are less likely to accumulate in the storm drain system.

[21] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco.* Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[22] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-25. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[23] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan*. Pasadena, CA.

[24] Anacostia Watershed Society. December 2008. *Anacostia Watershed Trash Reduction Plan*. Prepared for: District of Columbia Department of the Environment. Bladensburg, MD.

[25] Anacostia Watershed Society. December 2008. *Anacostia Watershed Trash Reduction Plan*. Prepared for: District of Columbia Department of the Environment. Bladensburg, MD.

Similarly, reusable bags pose less of an issue for the storm drain system because they are not disposed of as frequently as plastic carryout bags because they are designed to be used multiple times and are not littered the way plastic carryout bags are. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to create new or substantially more adverse significant impacts to utilities and service systems related to construction of new storm water drainage facilities or expansion of existing facilities.

(d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts to utilities and services systems.[26]

The City receives its water supplies from groundwater and imported water sources.[27] The manufacturing processes of plastic carryout bags, paper carryout bags, and reusable bags consume water, but to different extents. Although certain representatives of the plastic bag industry have argued that similar ordinances have the potential to increase the demand for paper carryout bags,[28] the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags in order to encourage the use of reusable bags. Nevertheless, the potential for water consumption during the manufacture of paper bags was evaluated consistent with the analysis in the certified EIR.[29]

As analyzed in the certified EIR using the Ecobilan LCA, a 50-percent conversion from the use of plastic carryout bags to the use paper carryout bags would be expected to require approximately 0.47 MGD of water if all the 88 incorporated cities of the County adopted similar plastic bag ordinances.[30] Since Pasadena is one of the 88 incorporated cities in the County, the certified EIR accounts for water consumption associated with the City's proposed ordinance. When considered separately, the City's proposed ordinance would cause approximately 0.01 MGD to be consumed by paper manufacturing facilities, which is negligible compared with the water consumption for the County (Appendix A and Table 3.18-2, *Water Consumption Due to Plastic and Paper Carryout Bags Based on Ecobilan Data*). Using the Boustead LCA, the certified EIR determined that a 50-percent conversion from the use of plastic carryout bags to the use paper carryout bags would be expected to require approximately 10.21 MGD of water if all the 88 incorporated cities of the County adopted similar plastic bag ordinances.[31] Out of that number, the proposed ordinance

[26] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-25. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[27]City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan*. Pasadena, CA.

[28] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[29] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 3.5-12 to 3.5-16 and 12.61 to 12.63. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[30] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-61. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[31] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-62. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

would result in the consumption of 0.23 MGD of water (Appendix A and Table 3.18-3, *Water Consumption Due to Plastic and Paper Carryout Bags Based on Boustead Data*). The water districts within the County supplied approximately 1,563 MGD of water in fiscal year 2007/2008.[32] The daily increase of water use due to a 50-percent conversion from plastic to paper carryout bags throughout the County based on the Ecobilan data would represent approximately 0.03 percent of the total water supplied by water districts in the County. Within Pasadena, the daily increase of water consumption would represent less than 0.0006 percent of the total water supplied by the water districts. The increase of water consumption countywide based on the Boustead data would represent 0.65 percent of the total water supplied and the City's increase of water as a result of the proposed ordinance would only represent 0.015 percent of the total water supplied by the water districts. These increases in water consumption would not be considered to be significant. It is also important to note that manufacturing facilities for paper carryout bags appear not to be located within the County (or the City). Therefore, any increase in water consumption due to paper carryout bag manufacturing would not impact wastewater treatment providers in the County or the City.

TABLE 3.18-2
WATER CONSUMPTION DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON ECOBILAN DATA

Water Consumption Sources	Water Consumption (MGD)	
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[2]
City ordinance – 108 stores within Pasadena[1]	0.02	+0.01
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	0.72	+0.47

SOURCES:
1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-61. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTE:
1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on: 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. "+" indicates the increase in wastewater generation that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.

[32] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

TABLE 3.18-3
WATER CONSUMPTION DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON BOUSTEAD DATA

Water Consumption Sources	Water Consumption (MGD)	
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[2]
City ordinance – 108 stores within Pasadena[1]	0.03	+0.23
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	1.30	+10.21

SOURCES:

1. Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates. Available at: http://www.americanchemistry.com/s_plastics/doc.asp?CID=1106&DID=7212
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-62. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTES:

1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. "+" indicates the increase in wastewater generation that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.

As discussed in the certified EIR, the proposed ordinance would be expected to significantly increase consumers' use of reusable bags, the production of which would consume less water than the production of both paper carryout bags and plastic carryout bags when considered on a per-use basis, because reusable bags are designed to be used multiple times.[33] Therefore, the additional water supply that may be required by reusable bag manufacturing facilities as an indirect result of the proposed ordinance would not necessitate new or expanded entitlements for water and would not constitute a significant impact under CEQA. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to sufficient water supplies.

(e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts to utilities and services systems.[34] Within the City, there are approximately 3,500 miles of sewer lines ranging from 6 to 42 inches in diameter and 2 sewer pump stations. Ultimately, all wastewater generated within the City

[33] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 12-62 to 12-63. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[34] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-25. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

is conveyed to regional interceptors within the City or in the adjacent City of San Marino.[35] These regional interceptors are owned and operated by the LACSD. No wastewater treatment occurs within the City or the PWP service area.[36] Wastewater generated within the PWP service area is treated by the LACSD at both the Whittier Narrows WRP and San Jose WRP. Although certain representatives of the plastic bag industry have argued that similar ordinances have the potential to increase the demand for paper carryout bags,[37] the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags to encourage the use of reusable bags. A potential increase in the production of paper bags and reusable bags would not be expected to increase the requirement for water or wastewater treatment facilities and would not affect the Whittier Narrows or San Jose Creek WRP. As described in the response to (a) above, a 50-percent conversion from the use of plastic carryout bags to the use paper carryout bags in the City would be expected to cause a negligible increase in wastewater generated by paper bag manufacturing facilities. Due to the fact that there are no known manufacturing facilities for paper carryout bags located within the County (or the City), any increase in wastewater generation due to paper carryout bag manufacturing would not impact wastewater treatment providers in the County (or the City). Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts related to the wastewater treatment provider's capacity to serve the project within existing commitments.

(f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts to utilities and services systems.[38] Solid waste in Pasadena is disposed of at the Scholl Canyon Landfill located at 7721 North Figueroa Street, Los Angeles, CA. 90041 which is estimated to operate until 2024.[39] The Scholl Canyon Landfill is a restricted wasteshed. An ordinance passed by the City of Glendale limits disposal at the landfill to solid wastes generated within the Los Angeles County incorporated cities of Glendale, La Canada Flintridge, Pasadena, South Pasadena, San Marino and Sierra Madre. [40] The permitted maximum disposal is estimated to be 3,400 tons per day.[41] The total estimated permitted capacity is estimated to by 58,900,000 cubic yards.[42] Currently, the landfill has used up to 46,800,000 cubic yards.[43] Approximately, 20 percent of the remaining capacity is left for landfill

[35] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan.* Pasadena, CA.

[36] City of Pasadena Department of Water and Power. 6 June 2011. *2010 Urban Water Management Plan.* Pasadena, CA.

[37] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco.* Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[38] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-25. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[39] CalRecycle. Accessed on: 8 August 2011. Scholl Canyon Landfill. Available at: http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=19&FACID=19-AA-0012

[40] CalRecycle. Accessed on: 8 August 2011. Scholl Canyon Landfill. Available at: http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=19&FACID=19-AA-0012

[41] CalRecycle. Accessed on: 8 August 2011. Scholl Canyon Landfill. Available at: http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=19&FACID=19-AA-0012

[42] CalRecycle. Accessed on 8 August 2011. Scholl Canyon Landfill. Available at: http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=19&FACID=19-AA-0012

[43] CalRecycle. Accessed on: 8 August 2011. Scholl Canyon Landfill. Available at: http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=19&FACID=19-AA-0012

use. [44] The City has taken appropriate steps to reduce solid waste by keeping its growth projects consistent with those of SCAG and by preparing a comprehensive Source Reduction and Recycling Element (SRRE) in accordance with the California Integrated Waste Management Act. [45] The SRREE identifies waste reduction, reuse, and recycling programs such as curbside recycling, backyard composting, and newspaper drop-off.[46]

Several studies have shown that the production, use, and subsequent disposal of paper carryout bags would generate more solid waste than that of plastic carryout bags;[47,48,49] however, the proposed ordinance would include a charge of 10 cents on the issuance of paper carryout bags in order to encourage the use of reusable bags.

As noted in the certified EIR, based on Ecobilan data, it was concluded that a 50 percent conversion scenario would result in a reduction in the amount of solid waste sent to landfills.[50] However, using the Boustead data, the certified EIR determined that a 50 percent conversion from plastic to paper carryout bags would result in an increase of approximately 255 tons of solid waste per day.[51] As stated in the certified EIR, the permitted daily maximum capacity of all the County landfills is approximately 43,749 tons per day and currently the landfills combined accept an average of 21,051 tons per day.[52] Thus, the potential increase of 255 tons of solid waste per day would represent approximately 1.1 percent of the remaining total daily maximum capacity of 22,698 tons per day. Since Pasadena is one of the 88 incorporated cities in the County, the certified EIR accounts for solid waste generation associated with the City's proposed ordinance. Considered separately using the Ecobilan data, the proposed ordinance would result in a reduction in the amount of solid waste sent to landfill (Appendix A and Table 3.18-4, *Solid Waste Generation Due to Plastic and Paper Carryout Bags Based on Ecobilan Data*). Based on Boustead data, the proposed ordinance would generate up 5.7 tons of solid waste per day (Appendix A and Table 3.18-5, *Solid Waste Generation Due to Plastic and Paper Carryout Bags Based on Boustead Data*). This potential increase in solid waste would not exceed the maximum permitted disposal of 3,400 tons a day at the Scholl Canyon Landfill.

[44] CalRecycle. Accessed on: 8 August 2011. Scholl Canyon Landfill. Available at: http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=19&FACID=19-AA-0012

[45] City of Pasadena. 24 November 2003. *East Colorado Specific Plan*. Pasadena, CA.

[46] City of Pasadena. 24 November 2003. *East Colorado Specific Plan*. Pasadena, CA.

[47] Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.

[48] Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for the Progressive Bag Affiliates.

[49] The ULS Report. 1 June 2007. *Review of Life Cycle Data Relating to Disposable Compostable Biodegradable, and Reusable Grocery Bags*. Rochester, MI.

[50] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, pp. 12-63 to 12-64. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[51] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report,* p. 12-65. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[52] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-65. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

TABLE 3.18-4
SOLID WASTE GENERATION DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON ECOBILAN DATA

Solid Waste Sources	Solid Waste Generation (tons)	
	Plastic Carryout Bags (Existing Conditions)[2]	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[1,2]
City ordinance – 108 stores within Pasadena[3]	5.39	-0.46
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	241.03	-20.54

SOURCES:

1. Ecobilan. February 2004. *Environmental Impact Assessment of Carrefour Bags: An Analysis of the Life Cycle of Shopping Bags of Plastic, Paper, and Biodegradable Material*. Prepared for: Carrefour Group. Neuilly-sur-Seine, France.
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p.-64. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.
3. www.infousa.com (see Appendix A)

NOTES:

1. Negative numbers indicate the decrease in wastewater generation that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.
2. Assuming 36.8 percent of paper carryout bags are diverted from landfills and 11.9 percent of plastic carryout bags are diverted from landfills, based on the 2007 USEPA recycling rates.
3. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).

TABLE 3.18-5
SOLID WASTE GENERATION DUE TO PLASTIC AND PAPER CARRYOUT BAGS BASED ON BOUSTEAD DATA

Solid Waste Sources	Solid Waste Generation (tons)	
	Plastic Carryout Bags (Existing Conditions)	50-percent Conversion from Plastic to Paper Carryout Bag Use (with Implementation of Ordinance)[2]
City ordinance – 108 stores within Pasadena[1]	3.88	+5.70
County ordinance – 5,084 stores in incorporated areas plus 1,091 stores in unincorporated areas	173.29	+254.84

SOURCES:

1. Boustead Consulting and Associates Ltd. 2007. *Life Cycle Assessment for Three Types of Grocery Bags – Recyclable Plastic; Compostable, Biodegradable Plastic; and Recycled, Recyclable Paper*. Prepared for: Progressive Bag Affiliates. Available at: http://www.americanchemistry.com/s_plastics/doc.asp?CID=1106&DID=7212
2. County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 12-65. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

NOTES:

1. The total number of stores in Pasadena was determined from the infoUSA database for businesses with North American Industry Classification System codes 445110 and 446110. Database accessed on 18 August 2011 (see Appendix A). The total number of stores used for the calculations (108) is consistent with the City of Pasadena's estimate of the number of stores to be affected by the proposed ordinance (102).
2. "+" indicates the increase in solid waste generation that would be expected if 50 percent of consumers in Pasadena switched to using paper carryout bags instead of plastic carryout bags.

The proposed ordinance would also be expected to increase the use and eventual disposal of reusable bags, which, by the definition established by the proposed ordinance, must be designed to have a minimum lifespan of 125 uses. The Hyder Study analyzes life cycle impacts of several different types of bags and concludes that a polypropylene reusable bag that is used 104 times results in environmental impacts that are significantly less than the impacts resulting from paper and plastic carryout bags.[53] Therefore, environmental impacts due to the life cycle of a reusable bag would be expected to be significantly less than the environmental impacts of a plastic or paper carryout bag when considered on a per-use basis, and any conversion from the use of plastic carryout bags to reusable bags would be reasonably expected to result in an environmental benefit.

Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to utilities and service systems related to a landfill with sufficient space to accommodate the refined project's waste disposal needs.

(g) Comply with federal, state, and local statutes and regulations related to solid waste?

As a result of the analysis undertaken in certified EIR, it was determined that the approved ordinances would be expected to result in less than significant impacts to utilities and services systems.[54] The California Integrated Waste Management Act of 1989 (AB 939) requires the County to attain specific waste diversion goals. These goals can be met through the implementation of waste reduction policies, which could include the proposed ordinance once adopted. Although certain representatives of the plastic bag industry have argued that similar ordinances have the potential to result in an increase in the number of paper carryout bags that are disposed of in landfills,[55] it is anticipated that the proposed ordinance would also promote an increase in the use of reusable bags, thereby resulting in a reduction in the total number of carryout bags disposed of in the City compared to existing conditions. In addition, paper bags are more likely to be recycled than plastic bags, as supported by the higher recycling rate of paper as compared to that of plastic.[56] Therefore, the proposed ordinance would not conflict with the California Integrated Waste Management Act of 1989.

Action 4 in the Green City Action Plan for the City sets the goal of achieving zero waste to landfills and incinerators by 2040.[57] The Green City Action Plan notes that one of the first steps needed to achieve this goal includes the need to work in collaboration with local grocery stores and supermarkets to set a reduction target of a given quantity of disposable grocery bags.[58] The proposed ordinance would comply directly with Action 4 in the Pasadena Green City Action Plan.

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[53] Hyder Consulting. 18 April 2007. *Comparison of Existing Life Cycle Analyses of Plastic Bag Alternatives*. Prepared for: Sustainability Victoria, Victoria, Australia.

[54] County of Los Angeles Department of Public Works. November 2010. *Ordinances to Ban Plastic Carryout Bags in Los Angeles County Environmental Impact Report*, p. 3.5-25. SCH No. 2009111104. Contact: Sapphos Environmental, Inc., Pasadena, CA.

[55] Save the Plastic Bag. 2008. *The ULS Report: A Qualitative Study of Grocery Bag Use in San Francisco*. Available at: http://www.savetheplasticbag.com/ReadContent700.aspx or http://www.use-less-stuff.com/Field-Report-on-San-Francisco-Plastic-Bag-Ban.pdf

[56] U.S. Environmental Protection Agency. November 2008. *Municipal Solid Waste in the United States: 2007 Facts and Figures*. Washington, DC. Available at: http://www.epa.gov/waste/nonhaz/municipal/pubs/msw07-rpt.pdf

[57] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

[58] City of Pasadena. 2006. *Green City Action Plan*. Pasadena, CA.

The Los Angeles RWQCB adopted a Basin Plan Amendment on March 4, 2004, requiring the TMDL of trash in the Ballona Watershed to be incrementally reduced to zero within 10 years.[59] In addition, the Los Angeles RWQCB adopted a Basin Plan Amendment on August 9, 2007, requiring the TMDL of trash in the Los Angles River Watershed to be incrementally reduced to zero within 9 years.[60] The Los Angeles RWQCB acknowledges that the majority of the trash in these watersheds comes primarily from trash in storm water runoff, and it has been documented that a significant percentage of trash in storm water runoff in the County is composed of plastic film, such as plastic carryout bags.[61] The proposed ordinance, which would aim to significantly reduce the amount of litter attributable to plastic carryout bags, would comply with the TMDL requirements of the Los Angeles RWQCB. Therefore, compared with the approved ordinances, the proposed ordinance would not be expected to result in new or substantially more adverse significant impacts to utilities and service systems related to compliance with federal, state, and local statutes.

[59] Los Angeles Regional Water Quality Control Board. 4 March 2004. *Amendments to the Water Quality Control Plan – Los Angeles Region for the Ballona Creek Trash TMDL*. Available at: http://63.199.216.6/larwqcb_new/bpa/docs/2004-023/2004-023_RB_BPA.pdf

[60] Los Angeles Regional Water Quality Control Board. 9 August 2007. *Amendments to the Water Quality Control Plan – Los Angeles Region to Incorporate the TMDL for Trash in the Los Angeles River Watershed*. Available at: http://63.199.216.6/larwqcb_new/bpa/docs/2007-012/2007-012_RB_BPA.pdf

[61] Combs, Suzanne, John Johnston, Gary Lippner, David Marx, and Kimberly Walter. 2001. *Results of the Caltrans Litter Management Pilot Study*. Sacramento, CA: California Department of Transportation. Available at: http://www.owp.csus.edu/research/papers/papers/PP020.pdf

SECTION 4.0
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APPENDIX A
CALCULATIONS AND MODELING RESULTS

Congratulations! You're almost done.

We have **108** leads that match your criteria.

Did you know we also have 21 emails? Click Here for details.

To provide you with the most accurate and deliverable data, we:

100% Phone Verified!

- Place more than 20 million phone calls per year.
- Send our business list through the United States Postal Service's (USPS) National Change of Address (NCOA) database.
- Certify our data using the USPS's Coding Accuracy Support Systems (CASS).

Type of Specialty

Add Omit

NAICS Codes and Ranges	445110	Remove
NAICS Codes and Ranges	445120	Remove
NAICS Codes and Ranges	446110	Remove

Size Of Business

Add

Square Footage	0 - 2,499 Feet	Remove
Square Footage	2,500 - 9,999 Feet	Remove
Square Footage	10,000 - 39,999 Feet	Remove
Square Footage	40,000+ Feet	Remove

Other Selections

Add

Geography

Add Omit

City	Pasadena, CA	Remove

You currently have:

108 Leads

Did you know we also have:

21 Emails

Additional Options:

Save Search
New Search
Exclude Lists

How To Change Criteria:

To change or add to your search criteria, click on the category title links.

To remove search criteria, click "Remove." Your count will automatically update.

In order to omit search criteria, click "Omit." Then select the criteria you would like to omit from this search.

Stores in city > 10,000 sq ft	42		
Stores in whole county > 10,000 sq ft	529	**Resuable Bag Size (liters)**	37
Stores in city < 10,000 sq ft	66	**Ratio of Reusable**	
Stores in whole county < 10,000 sq ft	5646	**to Plastic Bags**	2.6
Plastic bag size (liters)	14		
Paper bag size (liters)	20.48		
Plastic bags / day / store > 10,000 sq ft	10000		
Paper bags / day / store > 10,000 sq ft *	3418	*based on 50% conversion from plastic to paper	
Plastic bags / day / store < 10,000 sq ft	5000		
Paper bags / day / store < 10,000 sq ft *	1709	*based on 50% conversion from plastic to paper	

Eutrophication - Ecobilan Data			
	Plastic LCA	**Paper LCA***	**Difference***
grams phosphate per 9000 liters groceries	0.20	2.35	2.15
grams phosphate per 1 liter groceries	0.00002	0.00026	0.00024
grams phosphate per bag	0.00031	0.00535	0.00504
kg phosphate per day in city	0.23	1.37	1.14
kg phosphate per day in whole county	10.39	61.25	50.87

*based on 50% conversion from plastic to paper

Eutrophication - Ecobilan Data					
	Plastic LCA	**Reusable LCA***	**Difference***	**Reusable LCA****	**Difference****
grams phosphate per 9000 liters groceries	0.20	0.18	-0.02	0.03	-0.17
grams phosphate per 1 liter groceries	0.00002	0.00002	0.00000	0.00000	-0.00002
grams phosphate per bag	0.00031	0.00075	0.00044	0.00011	-0.00020
kg phosphate per day in city	0.23	0.21	-0.02	0.03	-0.20
kg phosphate per day in whole county	10.39	9.54	-0.85	1.43	-8.96

*based on 3 uses

**based on 20 uses

Ecobilan Data - Utilities	Plastic Bags	Paper Bags	Reusable Bags
Water Used (total) (liters)	**52.6**	**173**	**137**
Water Generated (unspecified) (liters)	4.1	1.3	-0.186
Water Generated (chemically polluted) (liters)	34.3	107	105
Water Generated (thermally polluted) (liters)	11.6	22.4	31.8
Total Wastewater Generated (liters)	**50**	**130.7**	**136.614**
Waste Generated (total) (kg)	**2.59**	**4.73**	**6.99**
Non-renewable energy consumption (MJ)	**286**	**295**	**805**
Total solid waste due to disposal (kg)*	**4.76**	**12.14**	**13.11**

*Assuming all bags are sent to landfill

Water Consumption - Ecobilan Data			
	Plastic LCA	**Paper LCA***	**Difference***
Liters H20 per 9000 liters groceries	52.60	173.00	33.90
Liters H2O per 1 liter groceries	0.01	0.02	0.00377
Liters H2O per bag	0.08182	0.39367	0.31185
Gallons H2O per bag	0.02162	0.10400	0.08238
MGD per day in city	0.02	0.03	0.01
MGD per day in whole county	0.72	1.19	0.47

*based on 50% conversion from plastic to paper

Water Consumption - Ecobilan Data					
	Plastic LCA	**Reusable LCA***	**Difference***	**Reusable LCA****	**Difference****
Liters H20 per 9000 liters groceries	52.60	45.67	-6.93	6.85	-45.75
Liters H2O per 1 liter groceries	0.01	0.01	0.00	0.00	-0.01
Liters H2O per bag	0.08182	0.18774	0.10592	0.02816	-0.05366
Gallons H2O per bag	0.02162	0.04960	0.02798	0.00744	-0.01418
MGD per day in city	0.02	0.01	0.00	0.00	-0.01
MGD per day in whole county	0.72	0.63	-0.10	0.09	-0.63

*based on 3 uses

**based on 20 uses

Water Consumption - Boustead Data	Plastic LCA	Paper LCA*	Difference*
Gallons H20 1000 paper bags (1500 plastic)	58.00	1004.00	946.00
Gallons H2O per bag	0.04	1.00	0.97
MGD per day in city	0.03	0.26	0.23
MGD per day in whole county	1.30	11.50	10.21

*based on 50% conversion from plastic to paper

Wastewater Generation - Ecobilan Data	Plastic LCA	Reusable LCA*	Difference*	Reusable LCA**	Difference**
Liters H20 per 9000 liters groceries	50.00	45.54	-4.46	6.83	-43.17
Liters H2O per 1 liter groceries	0.01	0.01	0.00	0.00	0.00
Liters H2O per bag	0.07778	0.18721	0.10943	0.02808	-0.04970
Gallons H2O per bag	0.02055	0.04946	0.02891	0.00742	-0.01313
MGD per day in city	0.02	0.01	0.00	0.00	-0.01
MGD per day in whole county	0.69	0.63	-0.06	0.09	-0.59

*based on 3 uses

**based on 20 uses

Wastewater Generation - Ecobilan Data	Plastic LCA	Paper LCA*	Difference*
Liters H20 per 9000 liters groceries	50.00	130.70	80.70
Liters H2O per 1 liter groceries	0.01	0.01	0.01
Liters H2O per bag	0.07778	0.30	0.22
Gallons H2O per bag	0.02055	0.07857	0.05802
MGD per day in city	0.02	0.02	0.005
MGD per day in whole county	0.69	0.90	0.21

*based on 50% conversion from plastic to paper

Solid Waste - Boustead Data	Plastic LCA	Paper LCA*	Difference*
kg waste per 1000 paper bags (1500 plastic)	7.04	33.90	26.87
kg waste per bag	0.00469	0.03390	0.02921
tons waste per bag	0.00001	0.00004	0.00003
tons waste per day in city	3.88	9.58	5.70
tons waste per day in whole county	173.29	428.13	254.84

*based on 50% conversion from plastic to paper

Solid Waste - Ecobilan Data					
	Plastic LCA	Reusable LCA*	Difference*	Reusable LCA**	Difference**
kg waste per 9000 liters groceries	4.76	4.37	-0.39	0.66	-4.10
kg waste per 1 liter groceries	0.00	0.00	0.00	0.00	0.00
kg waste per bag	0.00740	0.01797	0.01056	0.00269	-0.00471
tons waste per bag	0.00	0.00	0.00001	0.00	-0.00001
tons waste per day in city	6.12	5.62	-0.50	0.84	-5.28
tons waste per day in whole county	273.59	251.17	-22.42	37.68	-235.91
*based on 3 uses					
**based on 20 uses					

Solid Waste - Ecobilan Data			
	Plastic LCA	Paper LCA*	Difference*
kg waste per 9000 liters groceries	4.76	12.14	7.38
kg waste per 1 liter groceries	0.00	0.00	0.00
kg waste per bag	0.00740	0.02763	0.02022
tons waste per bag	0.00001	0.00003	0.00002
tons waste per day in city	6.12	7.81	1.68
tons waste per day in whole county	273.59	348.89	75.29
*based on 50% conversion from plastic to paper			

2007 recycle rate - plastic bags and sacks	11.9%
2007 recycle rate - paper bags and sacks	36.8%

Solid Waste - Ecobilan Data	Adjusted for 2007 EPA Recycle Rates		
	Plastic LCA	Paper LCA*	Difference*
kg waste per 9000 liters groceries	4.19	7.67	3.48
kg waste per 1 liter groceries	0.00	0.00	0.00
kg waste per bag	0.00652	0.01746	0.01
tons waste per bag	0.00001	0.00002	0.00
tons waste per day in city	5.39	4.93	-0.46
tons waste per day in whole county	241.03	220.50	-20.54
*based on 50% conversion from plastic to paper			

Energy Consumption - Ecobilan Data			
	Plastic LCA	Paper LCA*	Difference*
MJ per 9000 liters groceries	286.00	295.00	9.00
MJ per 1 liter groceries	0.03	0.03	0.00
MJ per bag	0.44489	0.67129	0.23
kWh per bag	0.12358	0.18647	0.06
Million kWh per day in city	0.09	0.05	-0.04
Million kWh per day in whole county	4.14	2.14	-2.01

*based on 50% conversion from plastic to paper

Energy Consumption - Ecobilan Data					
	Plastic LCA	Reusable LCA*	Difference*	Reusable LCA**	Difference**
MJ per 9000 liters groceries	286.00	268.33	-17.67	40.25	-245.75
MJ per 1 liter groceries	0.03	0.03	0.00	0.00	-0.03
MJ per bag	0.44489	1.10315	0.66	0.16547	-0.28
kWh per bag	0.12358	0.30643	0.18	0.04596	-0.08
Million kWh per day in city	0.09	0.09	-0.01	0.01	-0.08
Million kWh per day in whole county	4.14	3.89	-0.26	0.58	-3.56

*based on 3 uses

**based on 20 uses

Energy Consumption - Boustead Data			
	Plastic LCA	Paper LCA*	Difference*
MJ per 1000 bags	763.00	2622.00	1859.00
MJ per bag	0.51	2.62	2.11
kWh per bag	0.14130	0.72833	0.59
Million kWh per day in city	0.11	0.19	0.08
Million kWh per day in whole county	4.74	8.34	3.61

*based on 50% conversion from plastic to paper

Conversion Factors	
liters to gallons	0.26417205
kg to short tons	0.00110231
MJ to kWh	0.27777778

Stores in city > 10,000 sq ft	42
Stores in whole county > 10,000 sq ft	529
Stores in city < 10,000 sq ft	66
Stores in whole county < 10,000 sq ft	5646
Plastic bag size (liters)	14
Paper bag size (liters)	20.48
Plastic bags / day / store > 10,000 sq ft	10000
Plastic bags / day / store < 10,000 sq ft	5000
Ratio of Paper Bags to Plastic Bags	1.5
Service Population in the City	200,226
Population in the County in 2010	10,615,700

Reusable Bag	
Size (liters)	37
Ratio of Reusable	
to Plastic Bags	2.6

Ecobilan Data - VOCs	**Plastic Bags**	**Paper Bags**	**Reusable Bag (1 Use)**
	g output	g output	g output
(a) Hydrocarbons (unspecified)	4.01E-01	6.16E+00	1.40E+00
(a) VOC (Volatil Organic Compounds)	5.38E-01	0.00E+00	0.00E+00
(a) VOC (Volatile Organic Compounds)	2.25E+01	2.65E-01	1.58E+01
(a) Acetaldehyde	-2.80E-04	1.08E-01	-1.61E-03
(a) Acetylene	2.30E-03	-1.15E-02	-2.26E-03
(a) Alcohol	7.02E-02	7.21E-01	0.00E+00
(a) Aldehyde	2.06E-03	4.61E-04	5.96E-03
(a) Alkane	1.35E-02	1.19E+00	-3.39E-02
(a) Aromatic Hydrocarbons	3.04E-01	7.55E-01	3.47E-01
(a) Benzaldehyde	5.65E-11	2.51E-09	-6.48E-11
(a) Benzene	5.06E-03	1.50E-02	-4.65E-03
(a) Butane	4.23E-03	2.03E-01	-2.13E-02
(a) Butene	4.23E-03	2.23E-03	1.72E-04
(a) Ethanol	-5.69E-04	3.11E-03	-3.21E-03
(a) Ethyl Benzene	1.70E-04	1.16E-02	1.96E-04
(a) Ethylene	7.89E-02	2.75E+00	-8.47E-02
(a) Formaldehyde	-2.63E-04	7.39E-03	-5.72E-03
(a) Heptane	1.59E-03	2.20E-02	1.72E-03
(a) Hexane	3.17E-03	4.32E-02	3.42E-03
(a) Hydrocarbons (except methane)	1.40E+01	1.58E+01	3.03E+01
(a) Methanol	-9.67E-04	5.28E-03	-5.45E-03
(a) Propane	-1.97E-03	2.29E-01	-7.41E-02
(a) Propionaldehyde	1.55E-10	6.92E-09	-1.78E-10
(a) Propylene	2.69E-03	-6.70E-03	-2.14E-03
(a) Tetrachloroethylene	2.40E-06	1.18E-02	6.61E-06
(a) Toluene	2.42E-03	9.00E-02	-7.63E-04
Total VOCs	**37.9294734**	**28.37487101**	**47.61867161**

Ecobilan Plastic Bag LCA					
Emissions Sources	**VOCs**	**NOx**	**CO**	**SOx**	**Particulates**
Emissions (grams) per 9,000 liters groceries	**37.9294734**	**27.1**	**48.2**	**23.4**	**19.2**
Emissions (grams) per 1 liter groceries	0.004214386	0.003011111	0.005355556	0.0026	0.002133333
Emissions per bag (grams)	0.06	0.04	0.07	0.04	0.03
Emissions per bag (pounds)	0.00	0.00	0.00	0.00	0.00
Emissions in the city (pounds)	**98**	**70**	**124**	**60**	**49**
Emissions in the whole county (pounds)	**4,360**	**3,115**	**5,541**	**2,690**	**2,207**

Ecobilan Paper Bag LCA					
Emissions Sources	**VOCs**	**NOx**	**CO**	**SOx**	**Particulates**
Emissions per 9,000 liters of groceries (in grams)	**28.37487101**	**72.6**	**9.34**	**26.1**	**4.72**
Emissions (grams) per 1 liter groceries	0.003152763	0.008066667	0.001037778	0.0029	0.000524444
Emissions per bag (grams)	0.06	0.17	0.02	0.06	0.01
Emissions per bag (pounds)	0.00	0.00	0.00	0.00	0.00
Emissions in the city (pounds)	**73**	**187**	**24**	**67**	**12**
Emissions in the whole county (pounds)	**3,262**	**8,346**	**1,074**	**3,000**	**543**

Ecobilan Emission differences caused by a 50% conversion from plastic to paper					
Emissions Sources	**VOCs**	**NOx**	**CO**	**SOx**	**Particulates**
Emissions in the city (pounds)	**-61**	**24**	**-112**	**-27**	**-43**
Emissions in the whole county (pounds)	**-2,729**	**1,058**	**-5,004**	**-1,190**	**-1,936**

Ecobilan Plastic Bag LCA End-of-life - All bags disposed		Adjusted for 2007 Recycle Rates
Emissions Sources	**NOx**	**NOx**
Emissions (grams) per 9,000 liters groceries	**0.97**	
Emissions (grams) per 1 liter groceries	0.000107778	
Emissions per bag (grams)	0.00	
Emissions per bag (pounds)	0.00	
Emissions in the city (pounds)	**2**	**2**
Emissions in the whole county (pounds)	**112**	**98**

Ecobilan Paper Bag LCA End-of-life - All bags disposed		Adjusted for 2007 Recycle Rates
Emissions Sources	**NOx**	**NOx**
Emissions per 9,000 liters of groceries (in grams)	**5.74**	
Emissions (grams) per 1 liter groceries	0.000637778	
Emissions per bag (grams)	0.01	
Emissions per bag (pounds)	0.00	
Emissions in the city (pounds)	**15**	**9**
Emissions in the whole county (pounds)	**660**	**417**

Ecobilan NOx Emissions End of Life	50% conversion from plastic to paper		Adjusted for 2007 Recycle Rates
Emissions in the city (pounds)	**5**		**2**
Emissions in the whole county (pounds)	**218**		**110**

Ecobilan Reusable Bag LCA -- 4 Uses					
Emissions Sources	**VOCs**	**NOx**	**CO**	**SOx**	**Particulates**
Emissions per 9,000 liters of groceries (in grams)	**11.9046679**	**19.125**	**7**	**17.475**	**13.35**
Emissions (grams) per 1 liter groceries	0.001322741	0.002125	0.000777778	0.001941667	0.001483333
Emissions per bag (grams)	0.05	0.08	0.03	0.07	0.05
Emissions per bag (pounds)	0.00	0.00	0.00	0.00	0.00
Emissions in the city (pounds)	**31**	**49**	**18**	**45**	**34**
Emissions in the whole county (pounds)	**1,368**	**2,198**	**805**	**2,009**	**1,535**

Boustead Plastic Bag LCA					
Emissions Sources	**VOCs**	**NOx**	**CO**	**SOx**	**Particulates**
Emissions (miligrams) per 1,000 bags	**994**	**45,400**	**67,400**	**50,500**	**14,300**
Emissions (grams) per 1,000 bags	0.994	45.4	67.4	50.5	14.3
Emissions per bag (grams)	0.00	0.05	0.07	0.05	0.01
Emissions per bag (pounds)	0.00	0.00	0.00	0.00	0.00
Emissions in the city (pounds)	**2**	**75**	**111**	**84**	**24**
Emissions in the whole county (pounds)	**73**	**3,355**	**4,981**	**3,732**	**1,057**

Boustead Paper Bag LCA					
Emissions Sources	**VOCs**	**NOx**	**CO**	**SOx**	**Particulates**
Emissions per 9,000 liters of groceries (in grams)	**2**	**264,000**	**121,000**	**579,000**	**128,000**
Emissions (grams) per 1,000 bags	0.002	264	121	579	128
Emissions per bag (grams)	0.00	0.26	0.12	0.58	0.13
Emissions per bag (pounds)	0.00	0.00	0.00	0.00	0.00
Emissions in the city (pounds)	**0**	**298**	**137**	**654**	**145**
Emissions in the whole county (pounds)	**0**	**13,336**	**6,113**	**29,249**	**6,466**

Boustead Emission differences caused by a 50% conversion from plastic to paper					
Emissions Sources	**VOCs**	**NOx**	**CO**	**SOx**	**Particulates**
Emissions in the city (pounds)	**-2**	**74**	**-43**	**244**	**49**
Emissions in the whole county (pounds)	**-73**	**3,313**	**-1,925**	**10,893**	**2,176**

Ecobilan Data - Greenhouse Gas Emissions		Reusable Bag (1 Use)	
	GWP (IPCC)	g output	g CO2e
(a) Carbon Dioxide (CO2, fossil)	1	2.65E+04	2.65E+04
(a) Methane	23	8.76E+01	2.01E+03
(a) Nitrous Oxide	296	7.10E-02	2.10E+01
(a) Carbon Tetrafluoride	5700	-5.21E-08	-2.97E-04
(a) Halon 1301	6900	1.95E-05	1.35E-01
Total			**2.85E+04**

* GWP = Global Warming Potential

Ecobilan Data - Greenhouse Gas Emissions		Plastic Bags		Paper Bags	
	GWP (IPCC)	g output	g CO2e	g output	g CO2e
(a) Carbon Dioxide (CO2, fossil)	1	1.01E+04	1.01E+04	1.67E+04	1.67E+04
(a) Methane	23	3.37E+01	7.75E+02	1.58E+02	3.63E+03
(a) Nitrous Oxide	296	6.63E-02	1.96E+01	6.46E-01	1.91E+02
(a) Carbon Tetrafluoride	5700	4.54E-08	2.59E-04	2.02E-06	1.15E-02
(a) Halon 1301	6900	1.83E-05	1.26E-01	2.71E-04	1.87E+00
Total			**1.09E+04**		**2.05E+04**

* GWP = Global Warming Potential

Ecobilan GHG emissions	CO_{2e} Emissions from Plastic Bags	CO_{2e} Emissions from Paper Bags	CO_{2e} Emission Increase Caused by 50 Percent Conversion from Plastic to Paper	per year	per year per capita
Emissions (grams) per 9,000 liters groceries	10894.8513	20527.0974	9632.2461	3515769.820	0.331
Emissions (metric tons) per 9,000 liter groceries	0.0109	0.0205	0.0096	3.516	0.000
Emissions (metric tons) per 1 liter groceries	0.0000	0.0000	0.0000	0.000	0.000
Emissions (metric tons) per bag	0.0000	0.0000	0.0000	0.011	0.000
Emissions in the city (metric tons)	12.71	11.97	-0.74	-269	-0.001
Emissions in the whole county (metric tons)	568.08	535.16	-32.92	-12,015	-0.001

Ecobilan GHG emissions	CO_{2e} Emissions from Plastic Bags	CO_{2e} Emissions from Reusable Bags Used Three Times	CO_{2e} Emission Increase From 100 % Conversion from Plastic to Reusable	per year	per year per capita
Emissions (grams) per 9,000 liters groceries	10894.8513	9511.9834	-1382.8679	-504746.788	-0.048
Emissions (metric tons) per 9,000 liter groceries	0.0109	0.0095	-0.0014	-0.505	0.000
Emissions (metric tons) per 1 liter groceries	0.0000	0.0000	0.0000	0.000	0.000
Emissions (metric tons) per bag	0.0000	0.0000	0.0000	0.008	0.000
Emissions in the city (metric tons)	12.71	11.10	-1.61	-589	-0.003
Emissions in the whole county (metric tons)	568.08	495.98	-72.11	-26,319	-0.002

Boustead GHG emissions	CO_{2e} Emissions from Plastic Bags	CO_{2e} Emissions from Paper Bags	CO_{2e} Emission Increase with 50 Percent Conversion from Plastic to Paper	per year	per year per capita
metric tons for 1,000 paper or 1,500 plastic bags	0.0400	0.0800	0.04	14.600	0.000
Emissions (metric tons) per bag	0.0000	0.0001	0.00	0.019	0.000
Emissions in the city (metric tons)	20.00	20.51	0.51	185	0.001
Emissions in the whole county (metric tons)	893.87	916.56	22.70	8,284	0.001

ExcelPlas GHG emissions	CO_{2e} Emissions from Plastic Bags	CO_{2e} Emissions from Paper Bags	CO_{2e} Emission Increase with 50 Percent Conversion from Plastic to Paper	per year	per year per capita
kilograms for 520 bags	6.0800	30.5000	24.42	8913.300	0.001
Emissions (metric tons) per bag	0.0000	0.0001	0.0000	0.017	0.000
Emissions in the city (metric tons)	8.77	22.00	13.23	4,827	0.024
Emissions in the whole county (metric tons)	391.93	983.04	591.11	215,756	0.020

Greenhouse Gas Emissions due to Mobile Sources			
	CO_2 Emissions (Pounds/Day)*	CO_2 Emissions (Metric Tons/Year)	CO_2 Emissions per Capita (metric
17 Delivery Truck Trips in the Cityof Los Angeles	32.76	5.42	0.00003
96 Delivery Truck Trips in the whole county of Los Angeles	1,572.35	260.32	0.00002

*Numbers from URBEMIS 2007

Conversion Factors	
grams to pounds	0.002204623
pounds to metric tons	0.000453592

2007 recycle rate - plastic bags and sacks	11.9%
2007 recycle rate - paper bags and sacks	36.8%

Ecobilan Data - Greenhouse Gas Emissions		Plastic Bags		Paper Bags	
Just End of Life	GWP (IPCC)	g output	g CO2e	g output	g CO2e
(a) Carbon Dioxide (CO2, fossil)	1	8.70E+01	8.70E+01	5.15E+02	5.15E+02
(a) Methane	23	2.60E-01	5.98E+00	4.96E+02	1.14E+04
(a) Nitrous Oxide	296	1.00E-02	2.96E+00	7.00E-02	2.07E+01
(a) Carbon Tetrafluoride	5700	0.00E+00	0.00E+00	0.00E+00	0.00E+00
(a) Halon 1301	6900	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**9.59E+01**		**1.19E+04**

* GWP = Global Warming Potential

Ecobilan Plastic Bag LCA - Just end-of-life		Adjusted for 2007 Recycle Rates		
Emissions Sources	CO2e	CO2e	Annual CO2e	Per Capita
Emissions (grams) per 9,000 liters groceries	**9.59E+01**			
Emissions (grams) per 1 liter groceries	0.01066			
Emissions per bag (grams)	0.15			
Emissions per bag (metric tons)	0.00			
Emissions in the city (metric tons)	**0**	**0**	36	0.0002
Emissions in the whole county (metric tons)	**5**	**4**	1609	0.0002

Ecobilan Paper Bag LCA - Just end-of-life		Adjusted for 2007 Recycle Rates		
Emissions Sources	CO2e	CO2e	Annual CO2e	Per Capita
Emissions per 9,000 liters of groceries (in grams)	**1.19E+04**			
Emissions (grams) per 1 liter groceries	1.327591111			
Emissions per bag (grams)	27.19			
Emissions per bag (metric tons)	0.00			
Emissions per store (metric tons)	0.09	0.06		
Emissions in the city (metric tons)	**14**	**9**	3216	0.0161
Emissions in the whole county (metric tons)	**623**	**394**	143716	0.0135

Ecobilan Emission differences caused by an 50% conversion from plastic to paper			Adjusted for 2007 Recycle Rates	
Emissions Sources			**Annual CO2e**	**Per Capita**
Emissions in the city (metric tons)			**1,572**	**0.00785**
Emissions in the whole county (metric tons)			**70,250**	**0.00662**

Boustead GHG emissions - Just end of life	**CO_{2e} Emissions from Plastic Bags**	**CO_{2e} Emissions from Paper Bags**	**CO_{2e} Emission Increase with 50 Percent Conversion from Plastic to Paper**	**per year**	**per year per capita**
metric tons for 1,000 paper or 1,500 plastic bags	0.0030	0.0500	0.05	17.155	0.000
Emissions (metric tons) per bag	0.0000	0.0001	0.00	0.018	0.000
Emissions (metric tons) per store	0.0100	0.0854	0.08	27.539	0.000
Emissions in the city (metric tons)	1.50	12.82	11.32	4,131	0.02063
Emissions in the whole county (metric tons)	67.04	572.85	505.81	184,621	0.01739

Emission Sources	**Air Pollutants (Pounds/Day)***					
	VOCs	**NO_x**	**CO**	**SO_x**	**$PM_{2.5}$**	**PM_{10}**
17 Delivery Truck Trips in the City	0.02	0.04	0.25	0	0.01	0.05
96 Delivery Truck Trips in the whole County	0.8	1.9	12.02	0.01	0.46	2.24
SCAQMD Threshold	**55**	**55**	**550**	**150**	**55**	**150**
AVAQMD Threshold	**137**	**137**	**548**	**137**	**-**	**82**
Exceedance of Significance?	**No**	**No**	**No**	**No**	**No**	**No**

*Numbers from URBEMIS 2007

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Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: W:\PROJECTS\1042\1042-021\Data\Pasadena Deliveries_2 Trips.urb924

Project Name: Pasadena Deliveries - 2 Trips Per Day

Project Location: Los Angeles County

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)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Supermarket	0.02	0.04	0.25	0.00	0.05	0.01	32.76
TOTALS (lbs/day, unmitigated)	0.02	0.04	0.25	0.00	0.05	0.01	32.76

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 80 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
Supermarket		2.00	1000 sq ft	1.00	2.00	26.60
					2.00	26.60

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.7	99.1	0.2
Light Truck < 3750 lbs	15.8	2.9	94.2	2.9

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	53.1	0.4	99.6	0.0
Med Truck 5751-8500 lbs	23.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	3.5	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	1.1	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	2.1	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	1.2	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	65.2	34.8	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	13.3	13.3
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Supermarket				2.0	1.0	97.0

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Operational Changes to Defaults

Commercial-based non-work urban trip length changed from 7.4 miles to 13.3 miles

Commercial-based customer urban trip length changed from 8.9 miles to 13.3 miles