

County of Santa Cruz

PLANNING DEPARTMENT

701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

NOTICE IS HEREBY GIVEN that the County of Santa Cruz is proposing to adopt a Mitigated Negative Declaration in accordance with Section 15072 of the California Environmental Quality Act for the following project. The proposed Mitigated Negative Declaration can be reviewed on the Internet at <http://www.sccoplanning.com>, and at the County of Santa Cruz Planning Department Records Room, 701 Ocean Street, 4th Floor, Santa Cruz, California 95060 during normal business hours. Comments on the proposed Mitigated Negative Declaration must be sent to Todd Sexauer at the address listed above, and should reference "Single-use Bag Reduction Ordinance."

Owner/Applicant: County of Santa Cruz

Application No.: NA

Zone District: NA

Staff Planner: Todd Sexauer; (831) 454-3511

Project Location: The proposed project is located in the unincorporated County of Santa Cruz and is applicable to retail uses countywide. The County of Santa Cruz is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay.

Project Description: The project is a proposed ordinance that would ban the use of single use plastic carryout bags, require that all paper carryout bags have a minimum of 40% post consumer recycled content, and encourage the use of reusable carryout bags in the unincorporated areas of Santa Cruz County, thereby reducing the number of bags manufactured, and the number that are released to the natural environment or disposed of in landfills. Chapter 5.48 of the County Code would prohibit retail product stores from making plastic carryout bags available at checkout stands, and would require them to charge \$0.10 on each paper carryout bag at the point of sale for a period of one year from the date Chapter 5.48 of the County Code takes effect. The charge would be increased to \$0.25 on each paper carryout bag beyond the initial one-year period. The Board of Supervisors may periodically review the store charge to judge its effectiveness. The ordinance would become effective six (6) months after the date of final passage by the County of Santa Cruz Board of Supervisors.

Public Review Period and Comment: **Written comments on the proposed Mitigated Negative Declaration must be received no later than March 16, 2011 at 5:00 p.m. (a 30-day public review period beginning on February 15, 2011).** For additional information, please contact Matt Johnston, Environmental Coordinator at (831) 454-3201 or by e-mail at pln458@co-santa-cruz.ca.us. The County of Santa Cruz does not discriminate on the basis of disability, and no person shall, by reason of a disability, be denied the benefits of its services, programs or activities. If you require special assistance in order to review this information, please contact Bernice Romero at (831) 454-3137 (TDD number (831) 454-2123 or (831) 763-8123 to make arrangements.

Public Hearing: The project will be considered at a public hearing by the Board of Supervisors. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

Single Use Bag Ordinance

NEGATIVE DECLARATION MITIGATIONS

- A. To ensure a reduction in greenhouse gasses is the result following adoption and implementation of the ordinance, it is vital that reusable carryout bags are made available and used at County of Santa Cruz retailers. To ensure this reduction, the following mitigation shall be implemented: The County will work with retailers and members of the community to increase the availability and use of reusable carryout bags. The County is currently a member of the Central Coast Recycling Media Coalition (CCRMC), which coordinates education and outreach for numerous cities and counties in the Monterey Bay Area. The County of Santa Cruz Department of Public Works will continue to contribute a minimum of \$10,000 per year to CCRMC in support of ongoing programs promoting the use of reusable shopping bags.



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www.sccoplanning.com

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ENVIRONMENTAL REVIEW INITIAL STUDY

Date: February 7, 2011

Application Number: N/A

Staff Planner: Todd Sexauer

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: County of Santa Cruz

APN(s): Countywide

OWNER: N/A

SUPERVISORAL DISTRICT: All

PROJECT LOCATION:

The proposed project is located in the unincorporated County of Santa Cruz and is applicable to retail uses countywide. The County of Santa Cruz is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay.

SUMMARY PROJECT DESCRIPTION:

The project is a proposed ordinance that would ban the use of single use plastic carryout bags, require that all paper carryout bags have a minimum of 40% post consumer recycled content, and encourage the use of reusable carryout bags in the unincorporated areas of Santa Cruz County, thereby reducing the number of bags manufactured, and the number that are released to the natural environment or disposed of in landfills. Plastic bags refer to single-use bags of any size that are both compostable and non-compostable plastic bags.

Chapter 5.48 of the County Code would prohibit retail product stores from making plastic bags available at checkout stands, and would require them to charge \$0.10 on each paper carryout bag at the point of sale for a period of one year from the date Chapter 5.48 of the County Code takes effect. The charge would be increased to \$0.25 on each paper carryout bag beyond the initial one-year period. The Board of Supervisors may periodically review the store charge to judge its effectiveness.

The ordinance would become effective six (6) months after the date of final passage by the County of Santa Cruz Board of Supervisors. Sixty days before the ordinance would take effect; the County of Santa Cruz would mail or deliver a copy of Chapter 5.48 of the County Code to every retail establishment within the unincorporated County of Santa Cruz. The County would also distribute a reproducible placard to each store that is designed to inform shoppers of the County of Santa Cruz policy for carryout bags.

This ordinance applies to bags provided at the checkout counter. It does not apply to bags used within the store to contain loose items prior to checkout such as meat, produce, bulk goods, or pre-packaged products. Purchases made under the State Department of Social Services Food Stamp program, California Special Supplemental Food Program for Women, Infants, and Children (WIC), and other such government-subsidized purchase programs for low-income residents would be exempt from the store charge on paper bags.

This ordinance establishes a ban rather than a store charge on plastic carryout bags, because current California state law prohibits local jurisdictions from charging for plastic bags (AB 2449 2006). State law does not prohibit jurisdictions from charging for paper bags. The draft ordinance language is provided in its entirety as Attachment 1.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.

- | | |
|---|--|
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Hydrology/Water Supply/Water Quality | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Greenhouse Gas Emissions |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Visual Resources & Aesthetics | <input type="checkbox"/> Utilities & Service Systems |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Land Use and Planning |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Population and Housing |
| <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Mandatory Findings of Significance |

DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- | | |
|---|---|
| <input type="checkbox"/> General Plan Amendment | <input type="checkbox"/> Coastal Development Permit |
| <input type="checkbox"/> Land Division | <input type="checkbox"/> Grading Permit |
| <input type="checkbox"/> Rezoning | <input type="checkbox"/> Riparian Exception |
| <input type="checkbox"/> Development Permit | <input checked="" type="checkbox"/> Other: Proposed Ordinance |

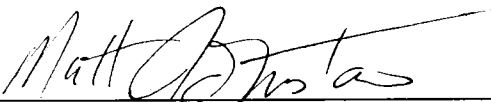
NON-LOCAL APPROVALS

Other agencies that must issue permits or authorizations:

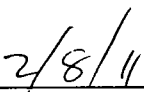
DETERMINATION: (To be completed by the lead agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Matthew Johnston
Environmental Coordinator



Date

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS

Parcel Size: N/A
Existing Land Use: Countywide
Vegetation: N/A
Slope in area affected by project: 0 - 30% 31 - 100% N/A
Nearby Watercourse: Countywide
Distance To: N/A

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Water Supply Watershed: N/A	Fault Zone: N/A
Groundwater Recharge: N/A	Scenic Corridor: N/A
Timber or Mineral: N/A	Historic: N/A
Agricultural Resource: N/A	Archaeology: N/A
Biologically Sensitive Habitat: N/A	Noise Constraint: N/A
Fire Hazard: N/A	Electric Power Lines: N/A
Floodplain: N/A	Solar Access: N/A
Erosion: N/A	Solar Orientation: N/A
Landslide: N/A	Hazardous Materials: N/A
Liquefaction: N/A	Other:

SERVICES

Fire Protection: All	Drainage District: All
School District: All	Project Access: N/A
Sewage Disposal: Sewer and Septic	Water Supply: Water Districts, Private Wells

PLANNING POLICIES

Zone District: Countywide	Special Designation:
General Plan: Countywide	
Urban Services Line: <input checked="" type="checkbox"/> Inside	<input checked="" type="checkbox"/> Outside
Coastal Zone: <input checked="" type="checkbox"/> Inside	<input checked="" type="checkbox"/> Outside

PROJECT LOCATION:

The proposed project is located in the unincorporated County of Santa Cruz and is applicable to retail uses countywide (Figure 1). The County of Santa Cruz is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay.

ENVIRONMENTAL SETTING:

Globally, an estimated 500 billion to 1 trillion petroleum-based plastic bags are used each year, which is equal to approximately one million per minute, the production and use of which uses over 12 million barrels of oil. The California Integrated Waste

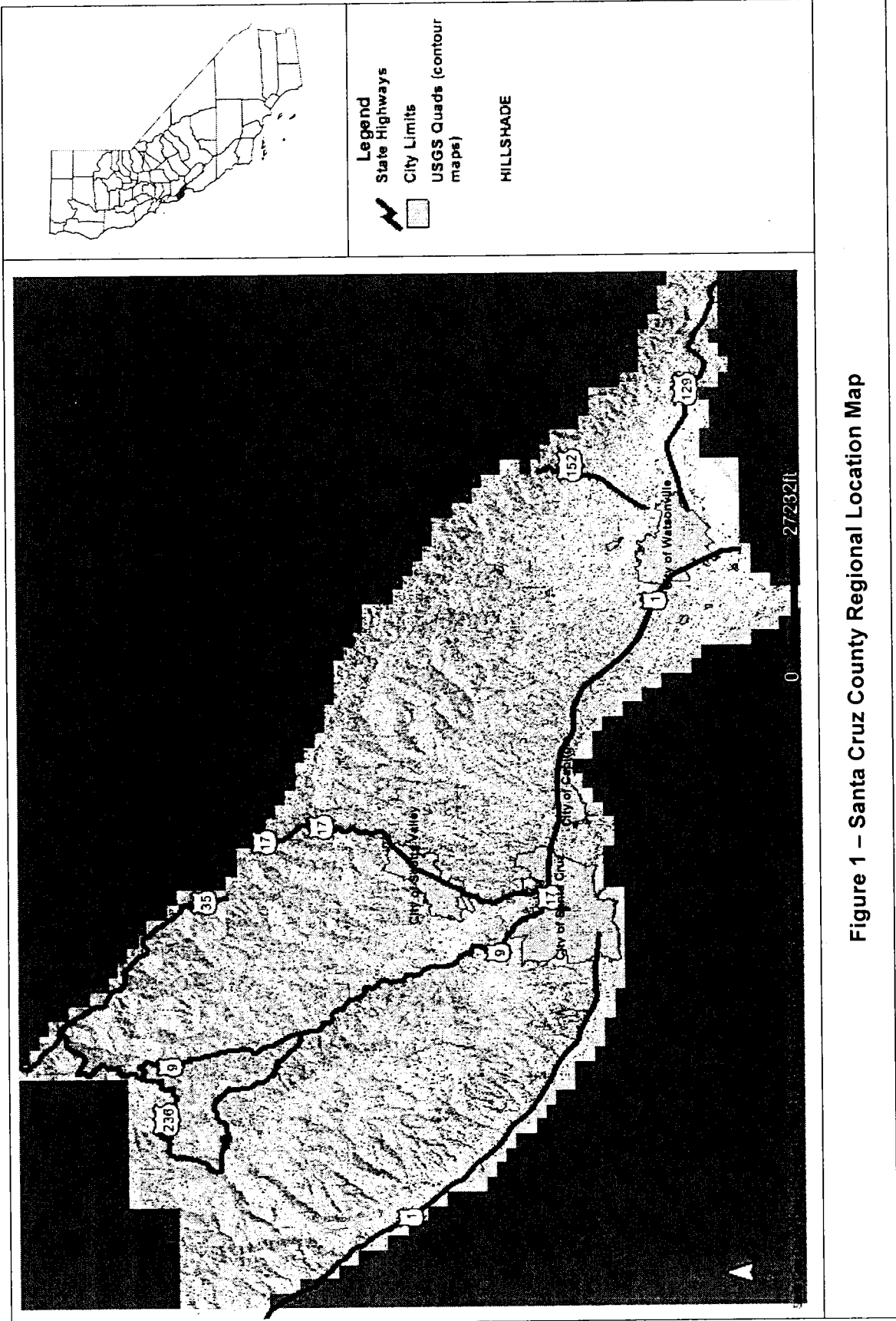


Figure 1 – Santa Cruz County Regional Location Map

Management Board estimates that Californians use nearly 20 billion single-use plastic bags per year and discard over 100 plastic bags per second. Further, the Environmental Protection Agency estimates that only 5% of the plastic bags in California and nationwide are currently recycled.

The production and disposal of plastic bags have caused significant environmental impacts, including contamination of the environment, the deaths of thousands of marine animals through ingestion and entanglement, widespread litter and degradation of the urban environment, and increased disposal costs.

Most plastic carryout bags do not biodegrade, but instead persist in the environment for hundreds of years. Rather than breaking down, they slowly break up through abrasion, tearing, and photo degradation into toxic plastic bits that contaminate soil and water, while entering the food web when animals accidentally ingest these materials. Toxic substances present in plastics are known to cause death or reproductive failure in fish, shellfish, wildlife, and in the humans ingesting the fish.

Plastic bits absorb dangerous compounds such as dichlorodiphenyldichloroethylene (DDE), Polychlorinated Biphenyl (PCB), and other toxic materials present in ocean water. Plastics have been found to concentrate these toxic chemicals at levels of up to one million times the levels found in seawater. Plastic bits have displaced plankton in the Pacific Gyre.

The U.S. Marine Mammal Commission estimates that 257 marine species have been reported entangled in or having ingested marine debris. Plastic can constrict the animals' movements or block their digestive system, killing the animals through starvation, exhaustion, or infection from deep wounds caused by tightening material.

According to Save Our Shores, a Santa Cruz based marine conservation nonprofit that conducts beach, river, and inland cleanups in the coastal regions of Santa Cruz, San Mateo, and Monterey County, from June 2007 to March 2010 they conducted 395 cleanups where volunteers removed a total of 19,080 plastic bags. Unchecked, this material would have likely entered the marine environment of the Monterey Bay National Marine Sanctuary (MBNMS).

Plastic bags returned to supermarkets may be recycled into plastic lumber; however, a very low percentage of bags are actually returned. Recycling bags into lumber does not reduce the impact of making new plastic carryout bags.

Compostable plastic carryout bags, which are currently manufactured, do not solve the problems of wildlife damage, litter, or resource use addressed by the proposed ordinance. Compostable carryout are designed to remain intact until placed in a professional compost facility, so they do not degrade quickly as litter or in a marine environment. Producing compostable bags consumes nearly as much fossil fuel as non-compostable bags. Mixing compostable bags with regular plastic bags prevents recycling or composting either of them. Therefore, there is no exemption in the proposed ordinance for compostable carryout bags.

According to Californians Against Waste, Californians pay up to \$200 per household each year in state and federal taxes to clean up litter and waste associated with single-

use bags, on top of the \$40 per household per year in hidden grocery costs to offset the expense to nearly 1,000 “free” bags received from grocers.

Reusable bags are readily available from numerous sources and vendors. Many grocery and other retail establishments throughout the County of Santa Cruz already offer reusable bags for sale at a price as low as \$0.25.

The proposed ordinance recognizes that there are energy and environmental consequences of using paper bags. While paper bags do not have the same end of use impacts of plastic bags, they may use comparable or more energy and resources to manufacture. For this reason, a store charge on paper bags is indicated, as an incentive to reduce their use and encourage reusable bags. Paper bags that contain a minimum of 40% post consumer recycled content have fewer negative impacts than virgin paper bags. In addition, paper shopping bags with 40% post consumer recycled content are easily available, and such bags are widely used by County of Santa Cruz merchants.

PROJECT BACKGROUND:

On November 3, 2009, the County of Santa Cruz Board of Supervisors directed Public Works and the Commission on the Environment (Commission) to develop a proposed ordinance banning single-use plastic and paper carryout bags for Board consideration no later than April 20, 2010, with an additional direction to include the Integrated Waste Management Local Task Force (Task Force) in development of the ordinance. On March 24, 2010, the Commission approved a draft ordinance with a recommendation to submit it to the Board.

Representatives of the cities of Watsonville, Scotts Valley, Capitola and Santa Cruz have also been involved in this process, and the city council of each jurisdiction will soon be considering similar measures. The cities of San Francisco, Oakland, Los Angeles, and numerous others have already taken similar action, and many more are in the process.

Controlling the release of plastic bags into the environment is one of the more challenging problems because only 5% are currently recycled (U.S. EPA 2005). Much of the remaining 95% are either landfilled, become litter on roadsides and beaches, or end up in the marine environment where they choke wildlife and release toxic chemicals into the ocean. Under Section 1(a) of State Assembly Bill 2449 (Approved by the Governor on September 30, 2006), the Legislature declared all of the following regarding plastic carryout bags:

“(1) On a global level, the production of plastic bags has significant environmental impacts each year, including the use of over 12 million barrels of oil, and the deaths of thousands of marine animals through ingestion and entanglement.

(2) Each year, an estimated 500 billion to 1 trillion plastic bags are used worldwide, which is over one million bags per minute, and of which billions of bags end up as litter each year.

(3) Most plastic carryout bags do not biodegrade which means that the bags break down into smaller and smaller toxic bits that contaminate soil and waterways and enter into the food web when animals accidentally ingest those materials.”

Paper bags also have environmental impacts, including the loss of forests and high usage of energy and water in the production. The proposed ordinance addresses both problems by banning the use of plastic carryout bags at retail establishments, while imposing a modest store charge for the use of paper bags, to encourage the use of reusable bags, which are convenient and widely available.

The County of Santa Cruz has always taken an active stand in support of the local environment. This measure would help to reduce litter throughout the County and reduce the impacts of plastic bags on area beaches and the marine environment. It would also save County resources currently allocated to litter abatement and bring the County closer to the goal of zero waste.

LIFE-CYCLE ASSESSMENT:

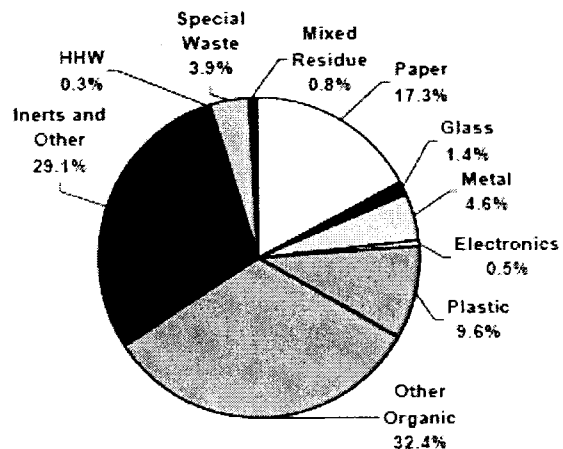
The life cycle assessment is an objective process to evaluate the environmental burdens associated with a product, process, or activity by identifying and quantifying energy and materials usage and environmental releases, to assess the impact of those energy and material uses and releases on the environment, and to evaluate and implement opportunities to effect environmental improvements. The assessment includes the entire life cycle of the product, process or activity, encompassing extracting and processing raw materials; manufacturing, transportation, and distribution; use/reuse/maintenance; recycling; and final disposal.

The following discussions compare life-cycle impacts of various types of single-use and reusable bags, based on previous LCAs. Some of these studies were useful to the extent that they reviewed previous studies. Others provided additional information, analyses, and conclusions.

Single-use Plastic Bags

Single-use disposable plastic grocery bags are typically made of thin, lightweight high-density polyethylene (HDPE) #2. For consumers, they offer a hygienic, odorless, and sturdy carrying sack. Currently, almost 20 billion of these plastic grocery bags are consumed annually in California (CIWMB 2007). According to the California 2008 Waste Characterization Study conducted by Cascadia Consulting Group for the California Integrated Waste Management Board (CIWMB 2009), plastic of all types makes up almost 10% of California's disposed waste stream (ICF International, 2010), as shown in Figure 2.

Figure 2
Make-up of California Disposable Waste Stream
(CIWMB 2009)



Plastic grocery and other merchandise bags – defined in the CIWMB 2009 study as “plastic shopping bags used to contain merchandise to transport from the place of purchase, given out by the store with the purchase” – are only a small part off the total plastic in the waste stream. Plastic bags account for 0.3% of the total waste stream, or

approximately 123,400 tons. Of this total, grocery bags are estimated to account for 44% by weight (CIWMB 2009). Overall, plastic grocery bags therefore represent approximately 0.13% of the waste stream (plastic produce bags are not included in these numbers; ICF International, 2010).

Conventional single-use plastic bags are a product of the petrochemical industry. Their life cycle begins with the conversion of crude oil or natural gas into hydrocarbon monomers, which are then further processed into polymers (Herrera 2008). These polymers are heated to form plastic resins, which are then blown through tubes to create the air pocket of the bag. Once cooled, the plastic film is then stretched to the desired size of the bag and cut into individual bags (ICF International, 2010).

The plastic resin pellets are a concern when released into the environment. The California State Water Resources Control Board describes the problem as follows:

“Preproduction plastic is a problematic type of litter due to its small size and persistence. One pound of palletized HDPE plastic can contain approximately 22,000 pellets. Preproduction plastic slowly photodegrades over time by breaking down into smaller and smaller pieces and researchers are unclear as to how long it takes some petroleum-based plastics to degrade. Depending on the plastic type, estimates range from one to ten years up to several centuries to fully degrade.”

“Once in the environment, preproduction plastic resin pellets, powders, and production scrap can be mistaken for food by marine life. They also contribute to California’s litter problem, which state and local agencies spend millions of dollars per year on collecting. Preproduction plastic discharges pose a significant threat to California’s marine environment, which is an important part of California’s \$46-billion dollar ocean-dependent, tourism economy (SWRCB 2010).”

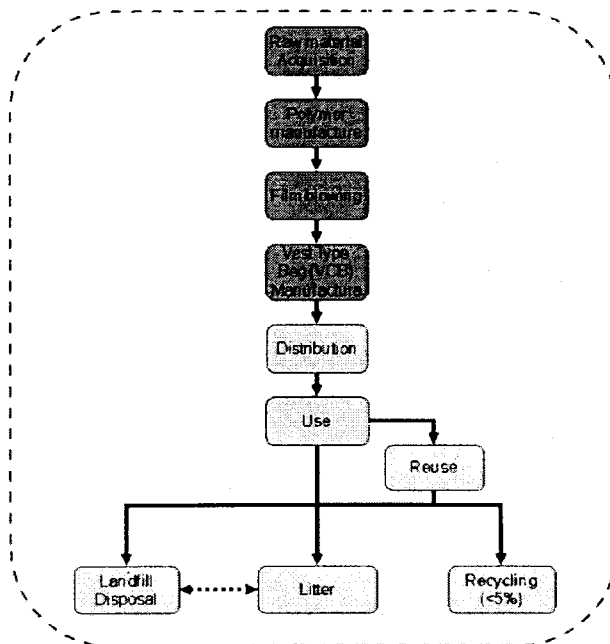
Typical single-use plastic bags are approximately 5-9 grams (g) in weight, and can be purchased in bulk for approximately 2-5 cents per bag. Plastic bags made from recycled materials cost approximately twice as much as those made from virgin materials (AEA Technology 2009). Many of the plastic bag manufacturers in California do not manufacture plastic grocery bags (<http://www.thomasnet.com>, 2010).

Once manufactured, the bags are packaged and shipped to distributors who sell them to grocery stores throughout the state. Customers may reuse the bags at home, but eventually the bags will be disposed in the landfill or recycling facility or discarded as litter. The majority of bags end up as litter or in the landfill, and even those in the landfill may be blown away as litter due to their light weight. Although some recycling facilities will handle plastic bags, most reject them because they can get caught in the machinery and cause malfunctioning, or are contaminated after use. Indeed, only approximately 5% of the plastic bags in California and nationwide are currently recycled (U.S. EPA 2005). According to the American Chemistry Council, HDPE plastic bag production and use appears to be on the rise. Sales of HDPE plastic film production grew by 4.2 percent in 2009 as compared to 2008, and HDPE production grew by 4.4% overall (American Chemistry Council 2009). However, LDPE retail bag production was down

by 22.1%, and Linear Low Density Polyethylene retail bag production was down 19.7% compared with the same period (American Chemistry Council 2009).

In 2006, California enacted AB 2449 (Chapter 845, Statutes of 2006), which became effective on July 1, 2007. The statute provides that stores that provide plastic carryout bags to customers must provide at least one plastic bag collection bin in an accessible spot to collect used bags for recycling. The store operator must also make reusable bags available to shoppers for purchase. Figure 3 outlines the general life cycle of the plastic bag (ICF International, 2010).

Figure 3
Life Cycle of Plastic Single-use Bag



Source: ICF International 2010

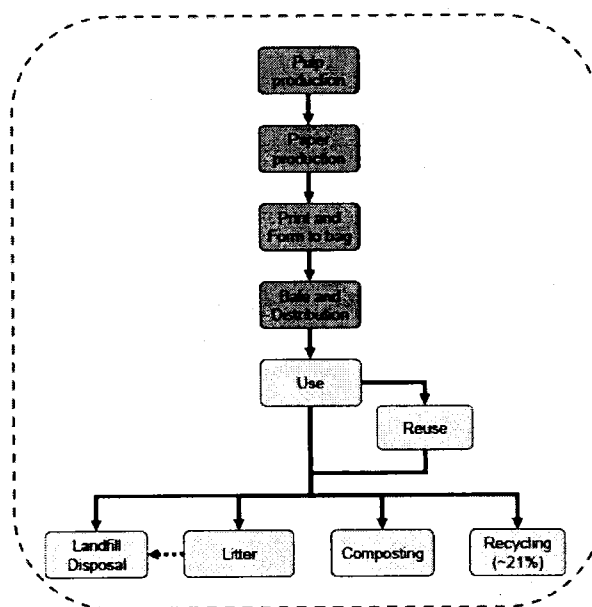
Single-use Paper Bags

Like plastic grocery shopping bags, single-use paper bags are distributed free of charge to customers at grocery stores, and are intended for one use before disposal. Paper products make up 17% of the California disposal waste stream (see Figure 2; CIWMB 2009). A subcategory, paper bags – including bags and sheets made from kraft paper; the paper may be brown or white, and examples include paper grocery bags, department store bags, and heavyweight sheets of kraft packing paper – make up 0.4% of the total disposable waste stream, or approximately 155,800 tons. Approximately 37% of paper bags nationwide are recycled (U.S. EPA 2008). Although the percent is assumed to be similar in California, there is anecdotal evidence that California may have substantially higher rates. The City of San Francisco’s Department of the Environment estimates that at least 60% of paper bags are recycled in the city (City and County of San Francisco 2010). Similarly, according to StopWaste, Alameda County currently achieves a 60-80% paper bag recycling rate (StopWaste 2010).

In addition, paper bags themselves may be made of post-consumer recycled paper. Weyerhaeuser, a major kraft paper bag manufacturer, reported to Boustead Associates (2007) that its unbleached kraft grocery bag contains approximately 30% post-consumer recycled content (Boustead Consulting and Associates 2007). Anecdotal evidence suggests that kraft paper bags with substantially higher post-consumer recycled content are also available. In particular, San Francisco has set a minimum 40% recycled content level for paper bags distributed within the city. StopWaste reports this and other similar requirements have led most supermarkets in California to switch to 40% recycled content paper bags (StopWaste 2010).

Paper grocery bags are typically produced from kraft paper and weigh anywhere from 50-100g, depending on whether or not the bag includes handles (AEA Technology 2009). These bags can be purchased in bulk for approximately 15-25 cents per bag (www.mrtakeoutbags.com). Kraft paper bags are manufactured from a pulp that is produced by digesting a material into its fibrous constituents via chemical and/or mechanical means (FRIDGE 2002). Draft pulp is produced by chemical separation of cellulose from lignin. Chemicals used in the process include caustic sodas, sodium hydroxide, sodium sulfide, and chlorine compounds (Environmental Paper Network 2007). Processed and then dried and shaped into large rolls, the paper is then printed, formed into bags, bailed, and then distributed to grocery stores. After use, the bags are frequently reused as wastebasket liners. Ultimately, while about 20% of paper bags are recycled, the remaining 80% are landfilled, left as litter, or composted. Because they are heavier than plastic bags, paper bags are less likely to be blown off landfills as litter, and those bags that are left as litter may decompose (Greene 2007). Figure 4 outlines the general life cycle of the Kraft paper bag (ICF International, 2010).

Figure 4
Life Cycle of Kraft Paper Bag



Source: ICF International 2010

Single-use Biodegradable Plastic Bags

Biodegradable bags are generally viewed as an eco-friendly alternative to HDPE plastic bags because they are advertised as being as strong as conventional plastic bags and will decompose at end of life rather than persist and pose aesthetic and health hazards. According to www.ecoproducts.com, BioBag compostable trash liners will biodegrade in as little as 45 days if disposed at a commercial compost facility. On the shelf they will be stable for up to two years. Multiple types of degradable bags are currently available, distinguished by their material components. They are composed of thermoplastic starch-based polymers, which are made with at least 90% starch from renewable resources such as corn, potato, tapioca, or wheat, or from polyesters, manufactured from hydrocarbons, or starch-polyester blends (James and Grant 2005).

Biodegradable plastics are defined according to the American Society for Testing and Materials (ASTM) D6400 standards as degradable in the presence of naturally occurring microorganisms. These plastics are capable of undergoing decomposition into carbon dioxide, methane, water, inorganic compounds, or biomass (Greene 2007). Compostable plastics are a subset of biodegradable plastics that are defined according to ASTM D6400 standards as those biodegradable plastics that will decompose during composting at a rate consistent with other known compostable materials and leave no visible distinguishable or toxic residue (CIWMB 2008). Many biodegradable plastic bags made of corn or potato starch, sugarcane, or polylactic (PLA) or polyhydroxyalkanoate (PHA) acid, are considered compostable. However, while PHA-

based bags will degrade in oceans and open lands, PLA-based bags will not degrade significantly in non-composting environments (CIWMB 2008). According to Greene (2007), polyethylene plastic bags produced with starch additives are not certified as compostable plastics because after disintegration they will leave small plastic fragments in the compost (Greene 2007). Two of the biodegradable plastics currently on the market are the corn-starched based polymer marketed by Novamont known as 'Mater-Bi,' and 'EcoFlex,' which is made of a polyester polymer. Ruiz (2007) examined both the Mater-Bi and EcoFlex bags to determine their ability to degrade in an aerobic composting environment. Both of these bags disintegrated within 30-60 days under laboratory composting conditions (Ruiz 2007). Mohee et al. (2006) also tested the rate of composting for Mater-Bi bags compared with plastic bags made with biodegradable additive. Although the Mater-Bi bags made of starch degraded completely within 60 days, the others required a significantly longer time frame (Mohee et al. 2006).

Biodegradable bags often take months or years to decompose, and, depending on their material composition, only do so in ideal composting environments (i.e., PLA-based plastic bags). Clearly, if a bag begins to decompose too early due to exposure to high temperatures, light, or moisture, its carrying capacity would be compromised (Cadman et al. 2005). Although the bags may be unstable in extreme conditions, initial studies have indicated that end-of-life biodegradable bags may decompose slowly if at all. Greene (2007) tested the degradation of a corn starch-based compostable bag compared to a Kraft paper bag in a green yard-waste composting environment. After 20 weeks, each bag had degraded between 80% and 90% (Greene 2007). Given that PHA-based plastics do not degrade unless in a composting environment, and the compostable bag required 20 weeks for incomplete degradation under ideal conditions, the claim that biodegradable bags will solve the plastic bag litter problem because they will degrade may be somewhat misleading.

Furthermore, although some regions within California have processing facilities that are prepared for biodegradable bags, others may not. For instance, an article in the Los Angeles Times (Proctor 2007) pointed out that although biodegradable bags are required in San Francisco, this policy may not be appropriate in Los Angeles due to the lack of processing facilities to handle biodegradable bags (Proctor 2007). Biodegradable bags that end up in the ocean may not decompose quickly enough to prevent the risks of injury to marine animals.

Additional characteristics of biodegradable bags suggest that they are not an appropriate substitute for HDPE plastic bags. Biodegradable bags cannot be recycled with other plastic bags. If they enter the recycling material stream, they could contaminate the resulting recycled material, making it unusable (Cadman et al. 2005).

Biodegradable bags made of Mater-Bi provide a convenient example of the manufacturing process. They are manufactured following the steps outlined in Figure 5. These bags are approximately the same size and weight as single-use HDPE plastic bags, but are substantially more expensive. They can be purchased in bulk for approximately 12-30 cents per bag (www.ecoproducts.com) (ICF International, 2010).

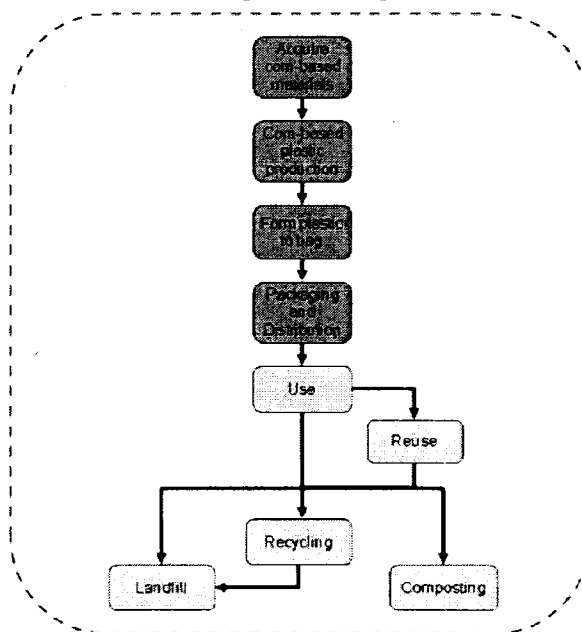
Reusable Bags

Reusable bags can be made of various materials including polyethylene (PE) plastic, polypropylene (PP) plastics, multiple types of cloth (cotton canvas, nylon, etc.), and recycled plastic beverage containers (polyethylene terephthalate, or PET), among others. The State of California under AB 2449 defines these bags as “a bag with handles that is specifically designed and manufactured for multiple reuse and is either made of cloth or other machine washable fabric, and/or thick, durable plastic (at least 2.25 mils thick). These bags differ from the single-use bags in their weight and longevity. Built to withstand many uses, they typically cost approximately \$1-5 wholesale, weigh at least 10 times an HDPE plastic bag and 2 times a paper bag, and require significantly greater material consumption on a per bag basis than HDPE plastic bags (ExcelPlas Australia 2004). However, because they can be used hundreds of times, reusable bags can be expected to have a lower environmental impact than plastic bags.

Many types of reusable bags are available today. These include: non-woven polypropylene (100% recyclable) ranging from \$1-\$2.50 per bag; cotton canvas, which is approximately \$5.00 per bag; 100% recycled plastic water/soda bottles, which is approximately \$6.00 per bag; polyester and vinyl, which is approximately \$10.00 per bag; and 100% cotton, which is approximately \$10.00 per bag. At the same time, some stores offer reusable bags at substantially less cost in order to reduce the number of single-use bags being used. For example, in early 2010, Whole Foods Markets was selling a small grocery bag made of 80% post-consumer recycled plastic bottles for \$0.79. The production stages in reusable bag life cycles depend on the materials used. Once used, these bags are reused until worn out through washing or multiple uses, and then disposed either in the landfill or recycling facility. Due to their weight, they are less likely than plastic bags to blow off a landfill and become litter.

No comprehensive California-specific life-cycle study has been conducted of the reusable bags commonly used in the state. Therefore, it is unclear which types of reusable bags have the least environmental impacts. However, previous LCAs not focused in California (James and Grant 2005, and Hyder Consulting 2007) suggest that the non-woven plastic durable bag has the greatest environmental benefits overall, based on an analysis of multiple types of reusable bags (ICF International, 2010).

Figure 5
Life Cycle of Mater-Bi and Other Corn-based Biodegradable Bags



Source: ICF International 2010

REGULATORY ENVIRONMENT

The following is a general overview of the regulatory requirements that are relevant to plastic carryout bags.

California Statutes

AB 2449

In 2006, California enacted AB 2449 (Chapter 845, Statutes of 2006), which became effective on July 1, 2007. The statute provides that stores that provide plastic carryout bags to customers must provide at least one plastic bag collection bin in an accessible spot to collect used bags for recycling. The store is required to keep records describing the collection, transport, and recycling of plastic bags collected for a minimum of three years and make the records available to state or the local jurisdiction, upon request, to demonstrate compliance with this law (Public Resources Code Section 42252(d)).

AB 2449 applies to retail stores of over 10,000 square feet that include a licensed pharmacy and to supermarkets with gross annual sales of \$2 million or more, which sell dry groceries canned goods, nonfood items, or perishable goods. Stores are required to maintain records of their AB 2449 compliance and make them available to the CIWMB or local jurisdiction.

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

- (b) Unless expressly authorized by this chapter, a city, county, or other public agency shall not adopt, implement, or enforce an ordinance, resolution, regulation, or rule to do any of the following:
 - (1) Require a store that is in compliance with this chapter to collect, transport, or recycle plastic carryout bags.
 - (2) Impose a plastic carryout bag fee upon a store that is in compliance with this chapter.
 - (3) Require auditing or reporting requirements that are in addition to what is required by subdivision (d) of Section 42252, upon a store that is in compliance with this chapter.

AB 2449 expires under its own terms on January 13, 2013, unless extended. There are no other California statutes that directly focus on grocery bags.

AB 1972

The statute restricts the labeling of grocery bags as "compostable" or "marine degradable" and otherwise prohibits use of the terms "biodegradable," "degradable," or "decomposable" when describing plastic bags. (Public Resources Code Section 42353, et seq.) Public Resources Code Section 42357 provides as follows:

- (a) (1) A person shall not sell a plastic bag in this state that is labeled with the "compostable" or "marine degradable," unless, at the time of sale, the plastic bag meets the applicable ASTM standard specification, as specified in paragraph (1) of subdivision (b) of Section 42356.
 - (2) Compliance with only a section or a portion of a section of an applicable ASTM standard specification does not constitute compliance with paragraph (1).
- (b) Except as provided in subdivision (a), a person shall not sell a plastic bag in this state that is labeled with the term "biodegradable," "degradable," or "decomposable," or any form of those terms, or in any way imply that the bag will break down, fragment, biodegrade, or decompose in a landfill or other environment.

- (c) A manufacturer or supplier, upon the request of a member of the public, shall submit to that member, within 90 days of the request, information and documentation demonstrating compliance with this chapter, in a format that is easy to understand and scientifically accurate.

AB 258

AB 258 was enacted in 2008 to address the problems associated with releasing "preproduction plastic" (including plastic resin pellets and powdered coloring for plastics) into the environment. It enacted Water Code Section 13367 requiring the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) to implement a program to control discharges of preproduction plastic from point and non-point sources.

Program control measures must, at a minimum, include waste discharge, monitoring, and reporting requirements that target plastic manufacturing, handling, and transportation facilities. The program must, at a minimum, require plastic manufacturing, handling, and transportation facilities to implement best management practices to control discharges of preproduction plastics. This includes containment systems, careful storage of pre-production plastics, and the use of capture devices to collect any spills.

DETAILED PROJECT DESCRIPTION:

The project is a proposed ordinance that would eliminate the use of single use plastic carryout bags (plastic bags) and reduce the use of paper carryout bags (paper bags) in the unincorporated areas of Santa Cruz County (Figure 1, Regional Location Map), thereby reducing the number of bags manufactured, and the number that are released to the natural environment or disposed of in landfills. Plastic bags refer to single-use bags of any size that are both compostable and non-compostable plastic bags. Paper checkout bags would be required to have minimum of 40% post consumer recycled content.

Chapter 5.48 of the County Code would prohibit retail product stores from making plastic bags available at checkout stands, and would require them to charge \$0.10 on each paper checkout bag at the point of sale for a period of one year from the date Chapter 5.48 of the County Code takes effect. The store charge would be increased to \$0.25 on each paper carryout bag beyond the initial one-year period. The Board of Supervisors may periodically review the store charge to judge its effectiveness. It has been conservatively estimated that the proposed ordinance would apply to approximately 485 retail establishments within the unincorporated County (see Attachment 2). However, "Optional" language contained within the proposed ordinance would allow single-use paper carryout bags (no plastic) to be distributed by food vendors for the transportation of prepared take-out food intended for consumption off the food vendor's premises without a store charge. Under the "Optional" scenario, the proposed ordinance would fully apply to approximately 400 retail establishments within the unincorporated County by adding Sections 5.48.015(A)(8 and 9) and 5.48.020(I). Under the "Optional" scenario, approximately 85 food establishments would be exempt from the store charge on single-use paper bags.

The ordinance would become effective six (6) months after the date of final passage by the County of Santa Cruz Board of Supervisors. Sixty days before the ordinance would

take effect, the County of Santa Cruz would mail or deliver a copy of Chapter 5.48 of the County Code to every retail establishment within the unincorporated County of Santa Cruz. The County would also distribute a reproducible placard to each store that is designed to inform shoppers of the County of Santa Cruz policy for carryout bags.

This ordinance applies to bags provided at the checkout counter. It does not apply to bags used within the store to contain loose items prior to checkout such as meat, produce, bulk goods, or pre-packaged products. Purchases made under the State Department of Social Services Food Stamp Program, California Special Supplemental Food Program for Women, Infants, and Children (WIC), and other such government-subsidized purchase programs for low-income residents would be exempt from the store charge on paper bags.

This ordinance establishes a ban rather than a store charge on plastic carryout bags, because current California state law prohibits local jurisdictions from charging for plastic bags. (AB 2449 2006). State law does not prohibit jurisdictions from placing a store charge on paper bags.

The County of Santa Cruz has an obligation to protect the environment, the economy and public health, and the County of Santa Cruz has a 75% waste reduction goal by 2010, which is to be reached by waste reduction, reuse, recycling, and composting.

The project proposes to add Chapter 5.48 (The Reduction of Single-use Plastic and Paper Carryout Bags) to Title 5 (Business Regulations) of the Santa Cruz County Code (see Attachment 1 for Chapter 5.48 in its entirety):

5.48.010 PURPOSE AND FINDINGS.

- A. It is the intent of the County of Santa Cruz, in enacting Chapter 5.48 to eliminate the common use of plastic single-use carryout bags, encourage the use of reusable bags by consumers and retailers, and to reduce the consumption of single-use bags in general.
- B. Whereas the County of Santa Cruz has an obligation to protect the environment, the economy and public health, and the County of Santa Cruz has a 75 percent waste reduction goal by 2010, which is to be reached by waste reduction, reuse, recycling, and composting, the County of Santa Cruz makes the following findings:
 1. Globally, an estimated 500 billion to 1 trillion petroleum-based plastic bags are used each year, which equals over one million per minute, the production and use of which uses over 12 million barrels of oil. The California Integrated Waste Management Board estimates that Californians use nearly 20 billion single-use plastic bags per year and discard over 100 plastic bags per second. Further, the Environmental Protection Agency estimates that only 5 percent of the plastic bags in California and nationwide are currently recycled.
 2. The production and disposal of plastic bags have caused significant environmental impacts, including contamination of the environment, the deaths of thousands of marine animals through ingestion and entanglement, widespread litter and debasement of the urban environment, and increased waste disposal costs.
 3. Most plastic carryout bags do not biodegrade, but instead persist in the environment for hundreds of years. Rather than breaking down, they slowly break up through abrasion, tearing, and photo degradation into toxic plastic bits that contaminate soil and water, while entering the food web when animals inadvertently ingest these materials. Toxic

substances present in plastics are known to cause death or reproductive failure in fish, shellfish, wildlife, and in the humans ingesting the fish.

4. Plastic bits absorb dangerous compounds such as dichlorodiphenyldichloroethylene (DDE), Polychlorinated Biphenyl (PCB), and other toxic materials present in ocean water. Plastics have been found to concentrate these toxic chemicals at levels of up to one million times the levels found in seawater. Plastic bits have displaced plankton in the Pacific Gyre.
5. The U.S. Marine Mammal Commission estimates that 257 marine species have been reported entangled in or having ingested marine debris. Plastic can constrict the animals' movements or block their digestive system, killing the animals through starvation, exhaustion, or infection from deep wounds caused by tightening material.
6. According to Save Our Shores, a Santa Cruz based marine conservation nonprofit that conducts beach, river, and inland cleanups in the coastal regions of Santa Cruz, San Mateo, and Monterey County; from June 2007 to March 2010 they conducted 395 cleanups where volunteers removed a total of 19,080 plastic bags. Unchecked, this material would have likely entered the marine environment of the Monterey Bay National Marine Sanctuary.
7. Plastic bags returned to supermarkets may be recycled into plastic lumber; however, a very low percentage of bags are actually returned. Recycling bags into lumber does not reduce the impact of making new plastic carryout bags.
8. Compostable plastic carryout bags, are currently manufactured, do not solve the problems of wildlife damage, litter, or resource use addressed by the proposed ordinance. Compostable carryout bags are designed to remain intact until placed in a professional compost facility, so they do not degrade quickly as litter or in a marine environment. Producing compostable bags consumes nearly as much fossil fuel as non-compostable bags. Mixing compostable bags with regular plastic bags prevents recycling or composting either of them. Therefore, there is no exemption in the proposed ordinance for compostable carryout bags.
9. According to Californians Against Waste, Californians pay up to \$200 per household each year in state and federal taxes to clean up litter and waste associated with single-use bags, on top of the \$40 per household per year in hidden grocery costs to offset the expense of nearly 1,000 "free" bags received from grocers.
10. Reusable bags are readily available from numerous sources and vendors. Many grocery and other retail establishments throughout the County of Santa Cruz already offer reusable bags for sale at a price as low as 25 cents.
11. The proposed ordinance recognizes that there are energy and environmental consequences of using paper bags. While paper bags do not have the end of use impacts of plastic bags, they may use comparable or more energy and resources to manufacture. For this reason, a store charge on paper bags is indicated, as an incentive to reduce their use and encourage reusable bags. Paper bags that contain a minimum of 40% post consumer recycled content have fewer negative impacts than virgin paper bags.
12. Paper shopping bags with 40% post consumer recycled content are easily available, and such bags are widely used by County of Santa Cruz merchants.
13. State law currently prohibits local jurisdictions from charging for single-use carryout plastic bags. Therefore, several California cities have adopted or are pursuing a ban

as the most effective remaining means to eliminate the impacts these plastic bags cause. State law does not prohibit jurisdictions from charging for paper bags.

5.48.015 DEFINITIONS.

A. For the purposes of this Chapter, the following definitions apply:

1. "Carryout bags" means bags provided by retailers to customers at the point of sale to hold customers' purchases. "Carryout bags" do not include bags used to contain loose items prior to checkout, such as meat, produce and bulk goods, and does not include prepackaged products.
2. "Single-use plastic bag" or "single-use plastic checkout bag" means a single-use checkout bag of any size that is made from plastic and provided at point of sale to customers by a retail establishment and is not reusable. Single-use plastic carryout bags include both compostable and non-compostable carryout bags.
3. "Single-use paper bag" means a checkout bag provided by a retail establishment at the point of sale that is made from paper and is not a reusable bag.
4. "Recyclable" means material that can be sorted, cleansed, and reconstituted using the County's available recycling collection programs for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating, converting, or otherwise thermally destroying solid waste.
5. "Reusable bag" means any bag with handles that is specifically designed and manufactured for multiple reuse, and is either 1) made of cloth or other washable fabric, or 2) made of durable material that is at least 2.25 mils thick and is specifically designed to carry a minimum of 22 pounds for at least 125 times over a distance of 175 feet (A "reusable bag" may be made of plastic), 3) Have printed on the bag, or on a tag attached to the bag that is not intended to be removed, and in a manner visible to the consumer the following information: (A) The name of the manufacturer, (B) The location (country) where the bag was manufactured, (C) A recycling symbol or end-of-life management instructions, and (D) The percentage of postconsumer recycled material, if any; and 4) It shall not contain lead, cadmium, or any other heavy metal in toxic amounts.
6. "Retail establishment" or "retail store" means all sales outlets, stores, shops, restaurants, vehicles or other places of business located within the County of Santa Cruz which operate primarily to sell or convey goods, including "to go" food, directly to the ultimate consumer.
7. "Exempted uses" means those point-of-purchase or delivery sales, which have received an exemption, under Section 5.48.030 that allows the use of single-use bags.
8. **(OPTIONAL)** "Prepared food" means foods or beverages which are prepared on vendor's premises by cooking, chopping, slicing, mixing, freezing or squeezing, and which require no further preparation to be consumed. "Prepared food" does not include any raw uncooked meat product or fruits or vegetables, which are not chopped, squeezed, or mixed.
9. **(OPTIONAL)** "Take-out food" means prepared food or beverages requiring no further preparation to be consumed, and which are generally purchased in order to be consumed off restaurant or retail food vendor's premises.

5.48.020 BAN ON PLASTIC CARRYOUT BAGS AND STORE CHARGE FOR OTHER SINGLE-USE CARRYOUT BAGS.

- A. No retail establishment shall provide single-use plastic carryout bags to customers at the point of sale, except as permitted in Section 5.48.030 of this chapter.
- B. Single-use paper carryout bags provided to customers shall contain a minimum of 40 percent post consumer recycled paper fiber, and be recyclable in the County of Santa Cruz's curbside recycling program. In addition, all retail stores subject to this ordinance shall provide

independent certification (e.g., Forest Stewardship Council; Rainforest Alliance) that paper carryout bags being distributed originate from 40 percent post-consumer recycled fiber. Proof of certification shall be provided once annually to the Director of Public Works, or designee.

- C. During the period of time starting on the date that this chapter takes effect and continuing for one year thereafter, retail establishments shall charge 10-cents for each single-use paper checkout bag provided to customers at the point of sale. At the completion of the initial one-year period established by this subdivision, the charge shall increase to 25 cents per bag provided. There shall be a rebuttal presumption that this amount shall not be less than 10 cents for the first year and 25 cents thereafter. A store may charge a lesser amount if it submits a full accounting to the Director of Public Works, signed by a responsible manager under penalty of perjury, that identifies all costs including bag purchase, shipping handling and storage, showing a lesser actual cost to the store for each bag. Any such accounting shall expire one year from the date of original submission and must be resubmitted. Retail establishments shall keep annual records of paper bag distribution to be made available to the Director of Public Works, or designee upon request. The records shall be evaluated annually for the first five years by the County to ensure the effectiveness of the ordinance. If it is determined that single-use paper bag use has increased beyond anticipated levels, the Board of Supervisors shall consider increasing the minimum store charge to improve the effectiveness of the ordinance.
- D. The store charge imposed pursuant to this section shall not apply to customers participating in the California Special Supplemental Food Program for Women, Infants, and Children, the State Department of Social Services Food Stamp Program, or other government-subsidized purchase programs for low-income residents.
- E. The ban on single-use plastic bags and the store charge on single-use paper bags would not apply to plastic or paper bags used to protect produce, meat, or otherwise used to protect items as they are put into a carryout bag at checkout. Other examples include: paper bags to protect bottles, plastic bags around ice cream or other wet items, paper bags used to weigh candy, pharmacy bags or bags to protect greeting cards.
- F. Retail establishments are strongly encouraged to make reusable bags available for sale to customers at a reasonable price.
- G. Retail establishments shall indicate on the customer transaction receipt the number of paper carryout bags provided, and the total amount charged for those bags.
- H. County of Santa Cruz contractors and special events promoters, and their vendors, shall not provide plastic carryout bags to participants while performing under a County of Santa Cruz contract or permit.
- I. **(OPTIONAL)** *Notwithstanding the store charge in Section 5.48.020(C) on single-use paper carryout bags, single-use paper carryout bags may be distributed by food vendors for the transportation of prepared take-out food intended for consumption off the food vendor's premises without a store charge.*

5.48.025 IMPLEMENTATION

- A. Sixty days before this ordinance takes effect, the County of Santa Cruz shall mail or deliver a copy of it to every retail establishment within the unincorporated County of Santa Cruz.
- B. The County of Santa Cruz will distribute to each store a reproducible placard designed to inform shoppers of the County of Santa Cruz policy for carryout bags.

5.48.030 EXEMPTIONS ALLOWING SINGLE-USE PLASTIC CARRYOUT BAGS

- A. The Director of Public Works, or the Director's designee, may exempt a retail establishment from the requirement set forth in Section 5.48.020(A) of this chapter for a one-year period upon the retail establishment showing, in writing, that this chapter would create an undue hardship or practical difficulty not generally applicable to other persons in similar circumstances. The

decision to grant or deny an exemption shall be in writing, and the Director's or the designee's decision shall be final.

- B. An exemption application shall include all information necessary for the Director of Public Works or the designee to make a decision, including but not limited to documentation showing factual support for the claimed exemption. The Director or the Director's designee may require the applicant to provide additional information.
- C. The Director of Public Works or designee may approve the exemption application in whole or in part, with or without conditions.

5.48.035 ENFORCEMENT

Enforcement of this ordinance shall be as follows:

- A. The Director of Public Works, or designee, shall have primary responsibility for enforcement of this ordinance and shall have authority to issue citations for violation of this chapter. The director, or designee, is authorized to establish regulations or administrative procedures to ensure compliance with this chapter.
- B. A person or entity violating or failing to comply with any of the requirements of this chapter shall be guilty of an infraction.
- C. The County of Santa Cruz may seek legal, injunctive, or any other relief to enforce the provisions of this chapter and any regulation or administrative procedure authorized by it.
- D. The remedies and penalties provided in this chapter are cumulative and not exclusive of one another.
- E. The Director of Public Works, or designee, may inspect any retail establishment's premises to verify compliance with this ordinance.

5.48.040 VIOLATIONS

Violations of this ordinance shall be enforced as follows:

- A. Violation of this chapter is hereby declared to be a public nuisance. Any violation described in the preceding paragraph shall be subject to abatement by the County of Santa Cruz, as well as any other remedies that may be permitted by law for public nuisances, and may be enforced by injunction upon a showing of violation.
- B. Upon a first violation by a retail establishment, the Director of Public Works, or designee, shall mail a written warning to the retail establishment. The warning shall recite the violation, and advise that future violations may result in fines.
- C. Upon a second or subsequent violation by a retail establishment, the following penalties will apply:
 - 1. A fine not exceeding one hundred dollars (\$100) for the first violation that occurs 30 days or more after the first warning.
 - 2. A fine not exceeding two hundred dollars (\$200) for the second violation that occurs 60 or more days after the first warning.
- D. Special Events promoters and their vendors who violate this ordinance in connection with commercial or noncommercial special events shall be assessed fines as follows:
 - 1. A fine not exceeding two hundred dollars (\$200) for an event of 1 to 200 persons.
 - 2. A fine not exceeding four hundred dollars (\$400) for an event of 201 to 400 persons.
 - 3. A fine not exceeding six hundred dollars (\$600) for an event of 401 to 600 persons.
 - 4. A fine not exceeding one thousand dollars (\$1,000) for an event fo 601 or more persons.
- E. Remedies and fines under this section are cumulative.

5.48.45 SEVERABILITY.

If any word, phrase, sentence, part, section, subsection, or other portion of this chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such work, phrase, sentence part, section, subsection, or other portion, or the proscribed application thereof, shall be severable, and the remaining provisions of this chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The County of Santa Cruz hereby declares that it would have passed this title, and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases had been declared invalid or unconstitutional.

5.48.50 EFFECTIVE DATE

This ordinance shall become effective six (6) months after the date of final passage by the County of Santa Cruz Board of Supervisors.

5.48.55 NO CONFLICT WITH FEDERAL OR STATE LAW.

Nothing in this ordinance shall be interpreted or applied so as to create any requirement, power or duty in conflict with any federal or state law.

5.48.60 PREEMPTION.

The provisions of this chapter shall be null and void if state or federal legislation, or administrative regulation, takes effect with the same or substantially similar provisions as contained in this chapter. The Board of Supervisors shall determine whether or not identical or substantially similar statewide legislation has been enacted or regulations issued.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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III. ENVIRONMENTAL REVIEW CHECKLIST

The following analysis assumes that the proposed impacts and mitigation are equivalent for both the proposed ordinance, and the proposed ordinance under the "Optional" scenario unless specifically stated.

A. GEOLOGY AND SOILS

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| A. 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. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| B. Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| C. Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| D. Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion (A through D): The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on the geology, soils and seismicity of the unincorporated areas of Santa Cruz County.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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would not result in an impact on the geology, soils and seismicity of the unincorporated areas of Santa Cruz County.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. | Develop land with a slope exceeding 30%? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on the geology, soils and seismicity of the unincorporated areas of Santa Cruz County.

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|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. | Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on the geology, soils and seismicity of the unincorporated areas of Santa Cruz County.

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|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. | Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on the geology, soils and seismicity of the unincorporated areas of Santa Cruz County.

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 6. | Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems where sewers are not available? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on the geology and soils of the unincorporated areas of Santa Cruz County from sewage disposal systems.

- | | | | | | |
|----|----------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 7. | Result in coastal cliff erosion? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|----------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on coastal cliff erosion within the unincorporated areas of

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Santa Cruz County.

B. HYDROLOGY, WATER SUPPLY, AND WATER QUALITY

Would the project:

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. | Place development within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on hydrology, water supply, and water quality within the unincorporated areas of Santa Cruz county. No impact is anticipated.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. | Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on hydrology, water supply, and water quality within the unincorporated areas of Santa Cruz county. No impact is anticipated.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. | Be inundated by a seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on hydrology, water supply, and water quality within the unincorporated areas of Santa Cruz county. No impact is anticipated.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. | 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: Implementation of the proposed ordinance would not result in any potentially significant impacts related to increased water use within Santa Cruz County. Implementation of the ordinance would result in the removal of approximately

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50,000,000 plastic carryout bags annually (see Attachment 2) from distribution in the unincorporated areas, to be replaced by the use of reusable bags and 40% recyclable Kraft paper bags.

As opposed to single-use carryout bags, reusable bags are intended to be used multiple times over many months (or years). As these bags become soiled or dirty from multiple uses (to carryout retail items or to carry other items) it is expected that the user would hand wash or launder the bags. The hand washing of reusable bags or inclusion of reusable bags in routine laundering would not result in any substantial increase in the demand for potable water or significantly impact wastewater treatment capacity within Santa Cruz County. Those who launder their bags would likely place the bags in laundry loads with other clothes and materials, resulting in no new significant water demand. The cleaning of reusable bags by hand usually entails the use of soap with a damp sponge, which requires no significant amounts of water.

Indicator of Environmental Impact	HDPE ² Plastic Bag	Reusable LDPE ³ Plastic Bag					Kraft Paper Bag
	Single Use	Single Use	Used 2x	Used 4x	Used 20x	Used 50x	Single Use
Water Consumption	1.0	2.60	1.30	0.65	0.13	0.05	4.0
Eutrophication ⁴ of Water Bodies	1.0	2.80	1.40	0.70	0.14	0.06	14.0




Notes:
 1. Numbers *greater* than one indicate a *greater* environmental impact compared with single-use HDPE plastic bags. Numbers *less* than one indicate a *lesser* environmental impact.
 2. High-density Polyethylene Plastic
 3. Low-density Polyethylene Plastic
 4. Eutrophication - nitrate and phosphate pollution to water
 Sources: AEA Technology, 2005 and Ecobilan 2004.

Bag manufacture uses substantial amounts of water. The Ecobilan report (2004) indicates that water consumption over a paper bag's life cycle is 4 times that of an HDPE plastic bag. A reusable LDPE plastic bag results in 2.6 times the consumption of water of an HDPE plastic bag when compared on a per bag basis (Table 1; Ecobilan 2004). In Table 1, the HDPE single-use plastic bag has been given a score of "1" in both categories as a reference point. A score "greater than 1" indicates that another bag (LDPE or Kraft paper) makes more contribution water impacts than the HDPE single-use plastic bag when normalized against volume of shopping carried. A score of "less than 1" indicates that it makes less of a contribution, i.e., less water-related impacts than a HDPE single-use plastic bag. Reuse of the LDPE (reusable) plastic bag three times would be sufficient for per-use water consumption impacts to be less than for HDPE (single-use) plastic bags (*This analysis assumes that reusable LDPE plastic bags would be used on average of twice per week for a one-year period before disposal or recycling.*). When considering an anticipated increase in Kraft paper bag use of 5.5 million bags annually with the addition of approximately 750,000 reusable bags annually under the proposed ordinance (within the unincorporated County of Santa Cruz), the collective water use during their life cycle using Ecobilan (2004) methodology would be roughly 44% of the water currently used to supply 50,000,000

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plastic bags to the unincorporated County annually. Although shopping bags are not produced in the unincorporated County, this would be a 56% reduction in water use. A beneficial impact is anticipated to water supply.

In addition, Table 2 summarizes the findings of the streamlined environmental assessment of shopping bag alternatives conducted by Hyder (2007). A rating of one to five was used to show the diversity of impacts for each of the criteria, with one being the lowest impact. In some cases at the high impact end, the impact value of the bag fell outside the rating scale. Impacts cannot be added together to produce an overall bag rating (Hyder 2007). Table 2 clearly shows that the life cycle of the HDPE bag uses the least amount of water. Kraft paper bags with 100% recycled content would likely be a close second in terms of water use. However, due to the reduced production and consumption of paper bags as described above, water consumption would be reduced under the proposed ordinance.

Bag Type	Material Consumption (lbs)	Global Warming (lbs CO ₂ eq)	Energy Consumption (MW)	Water Use (gal. H ₂ O)	Litter Marine Biodiversity (lbs/y)	Litter Aesthetics (ft ² /y)	Disposal Options
Reusable Non-woven Plastic (Polypropylene) 	2	2	2	2	2	2	Curbside and Major Supermarket Recycling
Reusable Cloth Bag (Typically Cotton or Canvas)	2	2	2	222222	2	2	No Recycling, Dispose to Landfill
Single-use Plastic (HDPE) Bag 	2222	22	22222	2	222222	222222	Curbside and Major Supermarket Recycling ¹
Single-use Compostable Mater-Bi Plastic Bag	22222	2	2	222222	2	2	Compost (degrades within six months under ideal conditions)
Single-use Kraft Paper Bag with 100% Recycled Content	222222	222222	22222	2	2	22	Curbside Recycling
Single-use Kraft Paper Bag (100% Virgin Content)	222222	222222	222222	22	2	22	Curbside Recycling
Single-use 'boutique' Plastic (LDPE) Bag 	222222	222222	222222	2	222222	222222	Curbside Recycling

Notes: (1) Roughly 5% of plastic bags in California and nationwide are currently recycled (U.S. EPA 2005).

- **Material consumption:** Material used in the manufacture of the bag (i.e. mass of the bag multiplied by the number consumed over one year).
- **Global warming:** Climate change effects resulting from the emission of CO₂, methane or other greenhouse gases into the atmosphere. Greenhouse impacts are dominated by carbon dioxide through electricity and fuels consumption, methane emissions through degradation of materials in anaerobic conditions (e.g. landfill), and nitrous oxide (N₂O) emissions in fertilizer applications on crops.
- **Energy consumption:** Total energy use including fossil fuel, renewable, electrical and feedstock (i.e. the energy embodied in a bag's material).
- **Water use:** Net water use including potable, process, cooling water. Water quality, water depletion, and biodiversity.
- **Litter marine biodiversity:** This indicator estimates the time that litter in marine environments has the potential for ingestion or entanglement by marine fauna. This indicator is mostly affected by the propensity of the material to float or sink.
- **Litter aesthetics:** This indicator attempts to represent the visual impact of litter, related to the areas of the material and the time before it would degrade. To model this indicator an estimate of the average time a piece of litter may remain in the litter stream was needed. The data used for different materials was as follows:
 - Plastics (both single use and reusable, but not degradable polymers) – five years
 - Paper and degradable polymers – six months
 - Cloth – two years.

Source: Hyder 2007 and County of Santa Cruz 2010.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Furthermore, according to the Ecobilan study (2004), paper bags have 14 times the impact of HDPE single-use plastic bags on eutrophication (e.g., nitrate and phosphate emissions into water that stimulate excessive growth of algae and other aquatic life) as a result of their manufacturing process. Reusable LDPE plastic bags have 2.8 times the impact when used only once. In Table 1, the HDPE plastic bag has been given a score of 1.0, the Kraft paper bag, a score of 14, and the reusable LDPE plastic bag, a score of 0.06 (*assumes 50 uses annually*). When considering an anticipated increase in Kraft paper bag use of 5.5 million bags annually with the addition of approximately 750,000 reusable bags annually under the proposed ordinance, the collective increase in eutrophication of water bodies during their life cycle using Ecobilan (2004) methodology would be roughly 150% of the current rate of generation to supply 50,000,000 plastic bags to the unincorporated county annually (see Attachment 2). Although shopping bags are not produced in the unincorporated county, this would be roughly a 50% increase in the eutrophication of water bodies. The incremental increase in water quality impacts, should they occur, would not be significant at a paper bag manufacturing plant that meets current national Clean Water Act standards for water discharged back into the environment. Therefore, implementation of the proposed ordinance would not result in significant adverse impacts to water supply or water quality.

5. Substantially degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on hydrology, water supply, and water quality within the unincorporated areas of Santa Cruz County. No impact is anticipated.

6. Degrade septic system functioning?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact to septic systems within the unincorporated areas of Santa Cruz County. No impact is anticipated.

7. 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

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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which would result in flooding, on- or off-site?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not existing drainage patterns within the unincorporated areas of Santa Cruz County. No impact is anticipated.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 8. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems, or provide additional sources of polluted runoff within the unincorporated areas of Santa Cruz County. No impact is anticipated.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 9. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not 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 within the unincorporated areas of Santa Cruz County. No impact is anticipated.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 10. Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not degrade water quality within the unincorporated areas of Santa Cruz County. No impact is anticipated.

C. BIOLOGICAL RESOURCES

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. 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 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?

Discussion:

There are approximately 32 special status wildlife species that occur within the unincorporated County of Santa Cruz in habitats associated with rivers, wetlands, riparian areas, and Monterey Bay (see Table 3). In addition, there are additional special status species that occur within the MBNMS (Figure 6). The infiltration of litter into the natural biotic system poses a substantial threat to wildlife including special status species.

Plastic single-use bags enter the biological environment primarily as litter. This can adversely affect terrestrial animal species, birds, and marine species that ingest the plastic bags, the residue of plastic bags, or become tangled in the bag. Plastic bags and food containers are a significant portion of the trash in urban surface water runoff in California. The proportion of this trash or litter that is made up of single-use plastic bags is unknown.

Over 260 species of wildlife, including invertebrates, turtles, fish, seabirds and mammals, have been reported to ingest or become entangled in plastic debris (see Figure 7). The results include impaired movement and feeding, reduced reproduction, lacerations, ulcers, and death (Laist (1997), Derraik and Gregory (2009)). Ingested plastic bags impact wildlife by clogging animal throats and causing choking, filling animal

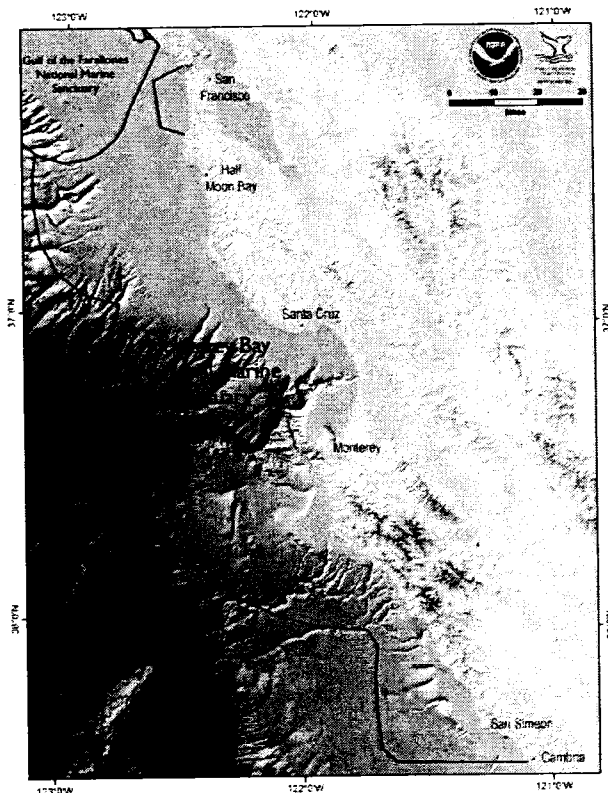


Figure 6 – Monterey Bay National Marine Sanctuary
 Source: NOAA 2010.

stomachs so that they cannot consume real food, infecting animals with toxins from the plastic, and entangling animals in the plastic. ExcelPlas Australia (2004) reports that sea turtles sometimes mistake plastic bags for jellyfish, one of their primary food sources. Many have been found bloated with plastic bags in their digestive tract and gut (ExcelPlas Australia, 2004). According to the International Coastal Clean-up Report (2005), 2.2% of all animals found dead during the 2004 survey had been entangled in plastic bags (Ocean Conservancy, 2009). The proportion of these bags that were grocery bags is unknown.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Less directly, the small plastic pellets that are eventually manufactured into bags often end up in storm drains (SWRCB 2010). Mistaken for fish eggs, they are consumed by marine life. A study conducted by Tokyo University geochemist Hideshige Takada found that the toxic chemicals in plastic pellets accumulate in birds at levels of up to one million times the normal level in seawater (Herrera et al, 2008).



Mother otter at Elkhorn Slough in Moss Landing California tries to free her pup from a single-use plastic bag. Photo by Terry McCormac

Figure 7 – Wildlife Entanglement

According to the ExcelPlas Australia (2004) study, material density is more important than degradability in determining the risk of harmful impacts to marine wildlife. Biodegradable plastic bags may have a similar impact, because they only biodegrade at a relatively fast rate when in a composting facility in the presence of microorganisms. In oceans they can take more than five months to partially decompose, leaving a substantial time period during which they may affect wildlife (McClure, 1996). In a study of early Mater-Bi material composed of thermoplastic starch and polycaprolactone, McClure (1996) concluded that starch-based plastics are likely to be a lower risk to marine animals than conventional HDPE plastics (McClure, 1996). However, Herrera et al (2008) points out that while partially degraded smaller pieces of plastic are less likely to be consumed by large marine animals, they may be mistaken as food for smaller animals (Herrera et al., 2008). It is still uncertain whether or not these smaller pieces pose a significant risk, as they may continue to degrade in the smaller animal's digestive tracts (Cadman et al., 2005).

Paper bags are also present in litter but paper does not survive as long or maintain its physical form in the natural environment. Heavy, large single-use Kraft paper grocery bags are not as easily windblown as single-use plastic bags. Lighter weight single-use paper bags are more easily windblown and also break down more quickly. Paper tears easily, especially when wet, and animals are not caught or entangled by paper. When paper degrades, it becomes wood fiber, an organic material. Dyes and inks on or in paper, like the dyes and inks on plastic film, can be either soy-based or petroleum-based and contain chemicals that enter the natural environment when the paper deteriorates.

Although no reviewed studies comprehensively reviewed the impacts of reusable bags on biological resources, it is believed that these bags would not have a significant impact on marine life. Due to the weight and sturdiness of these bags made for multiple uses, reusable bags are unlikely to be littered or carried from landfills by the wind as litter. Therefore, they are less likely to enter the oceans as waste. However, additional research is needed to identify other potential biological resource hazards

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associated with various types of reusable bags.

Table 3 Special Status Wildlife Species Occurring in Santa Cruz County		
Common/Scientific Name	Federal/State Status	Habitat
Birds		
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	FT/CE	Forages along coastline and offshore, nests in older stands of coastal redwood and Douglas fir forest within approximately 30 miles of the coast. Nests are created in moss and leaf litter on large diameter branches.
California Brown Pelican (<i>Pelecanus occidentalis californicus</i>)	FE/DL	Coastal areas, with nesting occurring on islands. Species found occasionally along Arizona's lakes and rivers. The subspecies occurred on the Pacific coast from Canada through Mexico. Breeding was only as far north as central California. It was found on the Lower Colorado River as an annual post-breeding wanderer.
American White Pelican (<i>Pelecanus erythrohynchos</i>)	-/CSC	Nests at large freshwater and saltwater lakes, usually on small islands or remote dikes. Nest-site must be flat or gently sloping, lacking shrubs or other obstructions.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT/CSC	Beaches, dry mud or salt flats, sandy banks of rivers, lakes, and ponds. Nests on ground in open beaches and salt or dry mudflats on isolated beaches
Bald eagle (<i>Haliaeetus leucocephalus</i>)	DL/CE	Breeds near coastal areas and large water bodies. Roosts in conifers or other sheltered sites in winter in some areas. Nests in tall trees and cliffs
Golden Eagle (<i>Aquila chrysaetos</i>)	-/FP, WL	Found in mountainous areas, canyons, shrubland and grassland. During the winter they are found in shrub-steppe vegetation, also wetlands, river systems and estuaries.
Double crested cormorant (<i>Phalacrocorax auritus</i>)	-/WL	Nests on rocky islands, cliffs facing water, and stands of trees near water
American peregrine falcon (<i>Falco peregrinus anatum</i>)	DL/CE	Forages in marshes and grasslands. Nesting habitat includes high, protected cliffs and ledges near water, including man-made structures.
Tricolored blackbird (<i>Agelaius tricolor</i>)	FSC/CSC	Nomadic resident of Sacramento-San Joaquin Valley and low foothills; nests in colonies within vicinity of fresh water/marshy areas. Colonies prefer heavy growths of cattails and tules.
Northern harrier (<i>Circus cyaneus</i>)	-/CSC	Nests in coastal freshwater and saltwater marshes; forages in grasslands, agricultural fields, and marshes.
Bank swallow (<i>Riparia riparia</i>)	-/CT	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/ cliffs with fine-textured/ sandy soils near streams, rivers, and lakes.
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	-/CT	Saline, brackish, and fresh emergent wetlands. Usually found in immediate vicinity of tidal flooding, not in low wetland areas with considerable annual and/or daily fluctuations in water levels. Nest concealed in dense vegetation, often pickleweed near upper limit of tidal flooding.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	FE/CE	Nesting habitat typically consists of well-developed overstories, understories, and low densities of aquatic and herbaceous cover. The understory frequently contains dense subshrub or shrub thickets. Significant overstory species include mature arroyo willows and black willows. Occasional cottonwoods (<i>Populus</i> sp.) and western sycamore (<i>Platanus racemosa</i>) occur in some least Bell's vireo habitats.
Willow flycatcher (<i>Empidonax trailii</i>)	-/CE	Dense willow thickets are required for nesting and roosting. Low, exposed branches are used for singing posts and hunting perches.
Yellow billed cuckoo (<i>Coccyzus americanus</i>)	C/CE	Riparian habitat densely foliated, deciduous trees shrubs, especially willows, required for roosting sites Nests in dense cover. Inhabits extensive deciduous riparian thickets or forest with dense, low-level, or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow almost always a dominant component of vegetation.
Ashy Storm-Petrel (<i>Oceanodroma homochroa</i>)	-/CSC	Occurs year-round in offshore waters of the continental slope (200-2,000 meters deep) from Cape Mendocino to northern Baja California, Mexico. Spends most of its time at sea, coming to land only to reproduce. Breeds on offshore islands at 17 localities from Southeast Farallon Island to Los Coronados. Nests in natural cavities, sea caves, or rock crevices on islands and on the mainland.

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Black Storm-Petrel (<i>Oceanodroma melania</i>)	--/CSC	See Ashy Storm-Petrel.
Black Swift (<i>Cypseloides niger</i>)	--/CSC	Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea bluffs above surf, forages widely. Known from the coastal belt of Santa Cruz and Monterey counties, Central and Southern Sierra Nevada, San Bernardino and San Jacinto Mountains.
Common Loon (<i>Gavia immer</i>)	--/CSC	Estuarine and subtidal marine habitats along the coast, and uncommon on large, deep lakes in valleys and foothills. Common migrant along coast, including offshore, in November and May.
Cooper's Hawk (<i>Accipiter cooperii</i>)	--/CSC	Usually nests in second-growth conifer stands or in deciduous riparian areas, usually near streams. Frequents landscapes where wooded areas occur in patches and groves. Often uses patchy woodlands and edges with snags for perching. Dense stands with moderate crown-depths used for nesting.
Elegant Tern (<i>Thalasseus elegans</i>)	--/WL	Primarily feeds in shallow ocean waters beyond the turbulent breaker zone, but also may forage in protected bays
Saltmarsh Common Yellowthroat (<i>Geothlypis trichas sinuosa</i>)	--/CSC	Resident of the San Francisco Bay region (including north coastal Santa Cruz county), in fresh and saltwater marshes, requires thick, continuous cover down to water surface for foraging; requires tall grasses, tule patches, willows for nesting.
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	--/WL	Breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers, but not restricted to, riparian habitats. North facing slopes, with plucking perches are critical requirements.
White-faced Ibis (<i>Plegadis chihi</i>)	--/WL	Prefers to feed in fresh emergent wetland, shallow lacustrine waters, and muddy ground of wet meadows and irrigated, or flooded, pastures and croplands. Nests in dense, fresh emergent wetland. Extensive marshes are required for nesting. Nest made of dead tules or cattails, is built amidst tall marsh plants, sometimes on mounds of vegetation. Considered to be a "rare" summer resident in terms of occurrence in Santa Cruz county.
Yellow Warbler (<i>Dendroica petechia brewsteri</i>)	--/CSC	Prefers moist habitats including the edges of marshes and swamps, willow-lined streams, and leafy bogs. It also in habitats dry areas such as thickets, orchards, farmlands, forest edges and suburban yards and gardens. This species is partial to areas of scattered trees, dense shrubbery and any other kinds of moist shady locale. Nests in small trees or dense shrubbery, typically 3 to 8 feet above the ground but occasionally as high as 40 feet.
Marine Mammals		
Steller sea lion (<i>Eumetopias jubatus</i>)	FT/--	At sea, Steller sea lions are found primarily over the continental shelf, from nearshore waters out to the shelf break, but some may be found in deeper waters. Rookeries and haul-outs tend to be located in remote areas, usually on exposed reefs, ledges, and beaches. Steller sea lions are found throughout the North Pacific Rim from southern California through the Aleutian and Pribilof Islands to northern Japan and the Okhotsk Sea. Breeding occurs from Año Nuevo Island to the Kuril Islands, with the greatest concentration of rookeries in the Gulf of Alaska and Aleutian Islands.
Southern sea otter (<i>Enhydra lutris nereis</i>)	FP/CT	Coastal waters with kelp beds
Fish		
Tidewater goby (<i>Eucyclogobius newberryi</i>)	FE/CSC	Benthic communities along shallow waters of Pacific coastal streams and lagoons
Central Coast Steelhead ESU (<i>Oncorhynchus mykiss indeus</i>)	FT/--	Fresh water, bays, and nearshore marine waters
Coho salmon - Central California ESU (<i>Oncorhynchus kisutch</i>)	FE (FT)/CE	Bay, nearshore marine habitats, and freshwater rivers and creeks that primarily occur in redwood forests
Reptiles		
Western Pond Turtle (<i>Clemmys marmorata</i>)	--/CSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation, need basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg laying.
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	FE/CE	Potential habitat in northern Santa Cruz county from Waddell Creek north. Wetlands or grasslands, near ponds, marshes, and streams. Preferred habitat is a densely vegetated pond close to a hillside.

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Amphibians														
California red-legged frog (<i>Rana draytonii</i>)	FT/CSC	Occurs in a broad range of freshwater and associated upland habitats throughout the Coast Range, Sierra Nevada and foothills, often found in perennial to seasonal drainages with dense vegetation.												
Foothill yellow-legged frog (<i>Rana boylei</i>)	FSC/CSC	Partly-shaded, shallow stream and riffles with a rocky substrate in a variety of habitats, requires at least some cobble-sized substrate for egg-laying.												
California tiger salamander (<i>Ambystoma californiense</i>)	FT/CSC	Annual grasslands and grassy understory of hardwood habitats; need underground refuges (i.e., ground squirrel burrows); need seasonal water sources for breeding.												
Santa Cruz long-toed salamander (<i>Ambystoma macrodactylum croceum</i>)	FE/CE	Ponds, upland habitat, and linkages in between (which are poorly understood). It frequents coastal woodlands and chaparral near the ponds and freshwater marshes in which it breeds. Burrows of small mammals such as mice, gophers, and moles. It can also be found among the root systems of some plants in upland chaparral and wooded areas. Typically breeds in shallow, temporary freshwater ponds, both natural and human-made. Upland chaparral and woodlands, temporary ponds. The extent of upland habitat adjacent to the ponds varies from a narrow ring of riparian vegetation on the perimeter of the pond to as far as one mile or more out from the pond.												
<p>Notes:</p> <table border="0"> <tr> <td>FE – Federally Endangered</td> <td>CT – California Threatened</td> <td>CSC – California Species of Concern</td> </tr> <tr> <td>FT – Federally Threatened</td> <td>WL – CDFG Watch List</td> <td>DL – De-listed</td> </tr> <tr> <td>C – Federal Candidate for Listing</td> <td>FP – CDFG Fully Protected</td> <td>FSC – Federal Species of Concern</td> </tr> <tr> <td>CE – California Endangered</td> <td></td> <td></td> </tr> </table> <p>Source: CDFG 2009.</p>			FE – Federally Endangered	CT – California Threatened	CSC – California Species of Concern	FT – Federally Threatened	WL – CDFG Watch List	DL – De-listed	C – Federal Candidate for Listing	FP – CDFG Fully Protected	FSC – Federal Species of Concern	CE – California Endangered		
FE – Federally Endangered	CT – California Threatened	CSC – California Species of Concern												
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CE – California Endangered														

Studies and expeditions have documented the mass of trash formed in the Pacific Gyre (also sometimes called the North Pacific Gyre). A gyre is an area within which little wind and extremely high pressure weather systems combine to greatly reduce ocean circulation. The subtropical gyres (they are found in all oceans near the equator) contain the doldrums mentioned in historic texts. The Pacific Gyre contains a growing mass of floating garbage, much of which is plastic. The conditions in the gyre have been well documented since at least 1997 by photographers, biologists, meteorologists, and various governmental agencies and nonprofit organizations.

Gordon Moore, founder of the Algalita Marine Research Foundation, sailed through the Pacific Gyre in 1997. Moore and his crew said that they identified plastic bags from “Sears, Bristol Farms, The Baby Store, El Pollo Loco, Fred Meyer, and Taco Bell ‘Chalupa’ bags.” The Taco Bell bags were the “T-shirt bags with two hand-hold holes that were introduced in the United States in 1979. The Pacific Gyre continues to grow and now reaches into the eastern Pacific and portions of the Hawaiian archipelago and the Papahānaumokuākea Marine National Monument.

Closer home, the National Oceanic and Atmospheric Administration (NOAA) has extensive documentation on contamination by plastic debris in all of the national marine sanctuaries. Three of the sanctuaries are located adjacent to the coast of Northern California and are likely to receive runoff from Monterey Bay, the San Francisco Bay area – Cordell Bank, and the Gulf of the Farallones.

Levels of debris in both the ocean and at the land-sea interface are of growing concern. Various types of debris are known to have adverse effects on marine species. Plastics in the marine environment never fully degrade and recent studies show plastic is consumed by organisms at all levels of the marine food web. DDT and other hydrophobic compounds are known to adhere to plastics. Ingestion and entanglement are two of the many problems associated with marine debris, and may lead to death for many organisms. Types of marine debris of particular concern include balloons,

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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abandoned/discarded fishing gear, plastics and Styrofoam, and consumer goods (e.g., 6-pack rings, plastic shopping bags, beverage bottles). Marine debris originates from both land and ocean-based sources, although the majority of marine debris (approximately 80%) appears to come from land-based sources (U.S. Department of Commerce and U.S. Navy 1999). Land-based sources include: littering, storm water runoff, coastal municipal landfills, loss during garbage transport, open trash collection containers, industrial facilities, and beach-goers. Ocean-based sources include: commercial and recreational fishing, overboard disposal of passenger and commercial shipboard waste, and cargo containers falling off ships in high seas (Source: <http://sanctuaries.noaa.gov/science/condition/cbnms/pressures.html>).

In addition, Table 2 summarizes the findings of the streamlined environmental assessment of shopping bag alternatives conducted by Hyder (2007). A rating of one to five was used to show the diversity of impacts for each of the criteria, with one being the lowest impact. Table 2 clearly shows that the life cycle of the HDPE and LDPE bags result in the greatest impact to marine resources as marine debris due to the increased time required for degradation. Kraft paper bags, and all other reusable bags were determined to result in the least impact on marine resources (Hyder 2007).

The proposed bag ordinance would reduce the amount of plastic that enters the environment through land-based sources within the unincorporated areas of Santa Cruz County; therefore, reducing the impact on special status species occurring within wetland, riparian and marine environments. The Ordinance would be considered beneficial to special status species by reducing the amount of plastic entering the environment. No impact would result from project implementation.

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| 2. Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed ordinance would be consistent with the County of Santa Cruz General Plan Policies and Code. The proposed ordinance would also reduce the amount of plastic that enters the environment through land-based sources within the unincorporated areas of Santa Cruz County; therefore, reducing the adverse impacts on wetland and riparian habitats, and the marine environment. The Ordinance would be considered beneficial to sensitive natural communities by reducing the amount of plastic entering the environment. No impact would result from project implementation.

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?

Discussion: The proposed project does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or impede use of a known wildlife nursery site. The proposed Ordinance would reduce the amount of plastic that enters the environment through land-based sources within the unincorporated areas of Santa Cruz County; therefore, reducing the adverse impacts on wetland and riparian habitats, and the marine environment. The Ordinance would be considered beneficial to sensitive natural communities by reducing the amount of plastic entering the environment. No impact would result from project implementation.

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| 4. | Produce nighttime lighting that would substantially illuminate wildlife habitats? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not produce nighttime lighting that would substantially illuminate wildlife habitats. No impact is anticipated.

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| 5. | 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: Please see discussion provided under C-1. The proposed Ordinance would reduce the amount of plastic that enters the environment though land-based sources within the unincorporated areas of Santa Cruz County; therefore, reducing impacts to wetland, riparian and marine environments. The Ordinance would be considered beneficial to federally protected wetlands by reducing the amount of plastic entering the environment. No impact would result from project implementation.

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 6. | Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Discussion: Please see discussion provided under C-1. The proposed Ordinance would reduce the amount of plastic that enters the environment through land-based sources within the unincorporated areas of Santa Cruz County; therefore, reducing impacts to wetland, riparian and marine environments. The Ordinance would be considered beneficial to sensitive habitats, and riparian and wetlands by reducing the amount of plastic entering the environment. No impact would result from project implementation.

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| 7. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

D. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the unincorporated areas of Santa Cruz County.

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on existing zoning for agricultural use, or a Williamson Act contract within the unincorporated areas of Santa Cruz County.

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| 3. | 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))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact on existing zoning within the unincorporated areas of Santa Cruz County.

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. | Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in a loss of forest land or conversion of forest land within the unincorporated areas of Santa Cruz County.

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. | 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use within the unincorporated areas of Santa Cruz County.

E. MINERAL RESOURCES

Would the project:

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. | 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in the loss of a known mineral resource that would be of value to the region and the residents of the state within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

2. 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?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not 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 within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

F. VISUAL RESOURCES AND AESTHETICS

Would the project:

1. Have an adverse effect on a scenic vista?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an adverse effect on a scenic vista as designated in the County's General Plan (1994), within the unincorporated areas of Santa Cruz County. The proposed ordinance would likely result in a substantial benefit to the aesthetic environment. Table 2 summarizes the findings of the streamlined environmental assessment of shopping bag alternatives conducted by Hyder (2007). A rating of one to five was used to show the diversity of impacts for each of the criteria, with one being the lowest impact. Table 2 shows that the life cycles of single-use HDPE and LDPE bags result in a substantially higher impact to aesthetic resources from litter than single-use Kraft paper bags (Hyder 2007). Paper bags decompose in the environment at a much higher rate than either of the plastic bags resulting in fewer visual impacts. Therefore, no impact is anticipated from project implementation.

2. Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Discussion: Also see the discussion under F1. The proposed Ordinance regulates

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not damage scenic resources, within a designated scenic corridor or public view shed area as designated in the County's General Plan (1994). Therefore, no impact is anticipated from project implementation.

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. | Substantially degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridgeline? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not degrade the existing visual character of a site within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

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| 4. | Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not create a new source of substantial light or glare, within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

G. CULTURAL RESOURCES

Would the project:

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|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. | Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in a substantial adverse change in the significance of a historical resource within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

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| 2. | Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in a substantial adverse change in the significance of an archaeological resource within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

3. Disturb any human remains, including those interred outside of formal cemeteries?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not disturb any human remains, including those interred outside of formal cemeteries within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

4. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

H. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

1. Create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials?

Discussion: Hygiene associated with reusable bag use has been raised as a concern by the plastic bag industry. Part of the appeal of single-use plastic bags is their cleanliness. Once food has contaminated them, they are usually disposed of. Paper bags are not waterproof, so they are less effective at preventing food contamination of surfaces. However, like single-use plastic bags, they are usually disposed of once contaminated. In contrast, food residue on reusable bags may lead to the growth of mold or harbor bacteria, which in turn may come in contact with other foods. This concern is mostly associated with reusable plastic bags; reusable cloth bags – commonly used in California – are more durable and are routinely tossed into the laundry for cleaning (ICF International, 2010).

The Environment and Plastics Council (EPIC), a standing committee of the Canadian Plastics Industry Association, examined the cleanliness of reusable bags in Canada.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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The study tested 24 reusable plastic bags ranging in age from one month to 3 years, which were obtained from shoppers. Although not explicitly noted, it appears that none of the bags were cloth bags. An open question is whether the results of this study would be repeated if reusable cloth were tested. The plastic bags in this study were tested for 'total plate count', total coliforms, *Escherichia coli* (*E. coli*), *Salmonella*, mold, and yeast. Results suggest that a number of the tested bags had become breeding grounds for yeast and mold; 64% showed some level of bacterial contamination; almost 30% had bacterial counts higher than those considered safe for drinking water; mold was present in 6 of the bags; a few bags had an unacceptable total coliform count (these particular bags had been in use from between 1 and 3 years); but no *E. coli* or salmonella was present (EPIC 2009). EPIC notes that although these bags in theory can be cleaned, it is difficult to thoroughly dry them without first encouraging microbial growth. Furthermore, their flimsiness deters scrubbing (ICF International, 2010).

No studies were found that examine the hygiene of reusing single-use plastic bags. When a plastic bag that originally carried meat or other groceries can leave residues that may lead to the growth of mold or harbor bacteria is subsequently used to carry food, there may be the potential for hygiene problems. However, the health effects of this use, if any, are not expected to be significant.

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| 2. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not create a significant hazard to the public or the environment through the release of hazardous materials into the environment within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school within the unincorporated areas of Santa Cruz County. Therefore, no impact is anticipated from project implementation.

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| 4. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not be located on any hazardous materials sites listed pursuant to Government Code Section 65962.5. Therefore, no impact is anticipated from project implementation.

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| 5. For a 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in a safety hazard for people residing or working in a project area. Therefore, no impact is anticipated from project implementation.

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| 6. For a 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in a safety hazard for people residing or working in a project area. Therefore, no impact is anticipated from project implementation.

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| 7. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, no impact is anticipated from project implementation.

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| 8. Expose people to electro-magnetic fields associated with electrical transmission lines? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not expose people to electro-magnetic fields associated with electrical transmission lines. Therefore, no impact is anticipated from project implementation.

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| 9. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. Therefore, no impact is anticipated from project implementation.

I. TRANSPORTATION/TRAFFIC

Would the project:

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. Although there has been speculation that the elimination of plastic carryout bags would result in an increase in delivery truck trips to the Santa Cruz region due to the increased bulk of Kraft paper bags, calculations show that it would result in approximately one additional truck trip annually within the unincorporated County area. However with the adoption of the proposed ordinance with the "Optional" language exempting food establishments from the store fee on single-use paper bags, approximately 38 additional truck trips would

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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be generated annually. No significant impact to impact is anticipated from project implementation under either scenario.

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| 2. | 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not affect air traffic patterns or traffic levels. Therefore, no impact is anticipated from project implementation.

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| 3. | Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not increase transportation hazards. As a result, no impact is anticipated from project implementation.

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| 4. | Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in inadequate emergency access. Therefore, no impact is anticipated from project implementation.

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|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. | Cause an increase in parking demand which cannot be accommodated by existing parking facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an increase in parking demand. Therefore, no impact is anticipated from project implementation.

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 6. | Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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No physical or land use changes are proposed; and therefore, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Therefore, no impact is anticipated from project implementation.

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| 7. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a level of service standard established by the County General Plan for designated intersections, roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an increase in traffic that would exceed either individually or cumulatively the level of service standard established by the County General Plan for designated intersections, roads or highways. Therefore, no impact is anticipated from project implementation.

J. NOISE

Would the project result in:

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| 1. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an increase ambient noise levels. Therefore, no impact is anticipated from project implementation.

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an increase in groundbourne vibration or groundborne noise levels. Therefore, no impact is anticipated from project implementation.

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Exposure of persons to or generation of noise levels in excess of standards established in the General Plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
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Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Discussion: Per County policy, average hourly noise levels shall not exceed the General Plan threshold of 50 Leq during the day and 45 Leq during the nighttime. The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an increase in ambient noise levels. Therefore, no impact is anticipated from project implementation.

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|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. | A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in a temporary or periodic increase in ambient noise levels. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. | For a 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 expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags for the entire unincorporated County. No physical or land use changes are proposed; and therefore, the proposed project would not expose people to excessive noise levels. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 6. | 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags for the entire unincorporated County. No physical or land use changes are proposed; and therefore, the proposed project would not expose people to excessive noise levels. Therefore, no impact is anticipated from project implementation.

K. AIR QUALITY

Where available, the significance criteria established by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) may be relied upon to make the following determinations. Would the project:

- | | | | | | |
|----|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. | Violate any air quality standard or | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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contribute substantially to an existing or projected air quality violation?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags for the entire unincorporated County. No physical or land use changes are proposed. Although the North Central Coast Air Basin does not meet state standards for ozone and particulate matter (PM₁₀), the proposed project would not contribute to PM₁₀ or ozone; and therefore would not violate any air quality standard or contribute substantially to an existing projected air quality violation.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. | Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The project would not conflict with or obstruct implementation of the regional air quality plan. See K-1 above. Therefore, no impact would occur.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. | 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags for the entire unincorporated County. No physical or land use changes are proposed; and therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutants. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. | Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags for the entire unincorporated County. No physical or land use changes are proposed; and therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. | Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags for the entire unincorporated County. No physical or land use changes are proposed; and therefore, the proposed project would not create objectionable odors. Therefore, no impact is anticipated from project implementation.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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L. GREENHOUSE GAS EMISSIONS

Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|-------------------------------------|--------------------------|--------------------------|

Discussion:

REGULATORY ENVIRONMENT

Federal

Federal Clean Air Act

The Federal Clean Air Act (CAA) requires that federally supported activities must conform to the State Implementation Plan (SIP), whose purpose is that of attaining and maintaining the National Ambient Air Quality Standards (NAAQS). Section 176 (c) of the Federal CAA as amended in 1990, established the criteria and procedures by which the Federal Highway Administration (United States Code, Title 23), the Federal Transit Administrations (U.S. EPA 1996), and metropolitan planning organizations (MPOs) determine the conformity of federally funded or approved highway and transit plans, programs, and projects to SIPs. The provisions of Code of Federal Regulations, Title 40, Parts 51 and 93 apply in all non-attainment and maintenance areas for transportation-related criteria pollutants for which the area is designated non-attainment or has a maintenance plan.

The USEPA sets NAAQS. Primary standards are designed to protect public health, including sensitive individuals such as the children and the elderly, whereas secondary standards are designed to protect public welfare, such as visibility and crop or material damage. The Federal CAA requires the USEPA to routinely review and update the NAAQS in accordance with the latest available scientific evidence.

State

California Clean Air Act

The California CAA of 1988 requires all air-pollution control districts in the state to endeavor to achieve and maintain state ambient air quality standards by the earliest practicable date and to develop plans and regulations specifying how they will meet this goal. On April 2, 2007, the Supreme Court ruled in Massachusetts, et al. v. Environmental Protection Agency, et al. (549 U.S. 1438; 127 S. Ct. 1438) that the CAA gives the USEPA the authority to regulate emissions of GHGs, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases, such as Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF₆), thereby legitimizing GHGs as air pollutants under the California CAA.

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. Recognizing that California is particularly vulnerable to the impacts of climate change,

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Executive Order S-3-05 establishes statewide climate change emission reduction targets to reduce CO₂ equivalent (CO₂e) to the 2000 level (473 million metric tons) by 2010, to the 1990 level (427 million metric tons of CO₂e) by 2020, and to 80% below the 1990 level (85 million metric tons of CO₂e) by 2050, California Business-as-usual Greenhouse Gas Emissions and Targets; California Climate Action Team 2006a). The executive order directs the Cal/EPA Secretary to coordinate and oversee efforts from multiple agencies (i.e., Secretary of the Business, Transportation and Housing Agency; Secretary of the Department of Food and Agriculture; Secretary of the Resources Agency; Chairperson of the Air Resources Board; Chairperson of the Energy Commission; and President of the Public Utilities Commission) to reduce GHG emissions to achieve the target levels. In addition, the Cal/EPA Secretary is responsible for submitting biannual reports to the governor and state legislature that outline 1) progress made toward reaching the emission targets, 2) impacts of global warming on California's resources, and 3) measures and adaptation plans to mitigate these impacts. To further ensure the accomplishment of the targets, the Secretary of Cal/EPA created a Climate Action Team made up of representatives from agencies listed above to implement global warming emission reduction programs and report on the progress made toward meeting the statewide GHG targets established in this executive order. In 2006, the first report was released and identified that "the climate change emission reduction targets [could] be met without adversely affecting the California economy," and "when all [the] strategies are implemented, those underway and those needed to meet the Governor's targets, the economy will benefit (California Climate Action Team 2006b)."

Assembly Bill 32: Global Warming Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed into law the Global Warming Solutions Act, or Assembly Bill 32 (AB 32), which requires a statewide commitment and effort to reduce GHG emissions to 1990 levels by 2020 (25% below business-as-usual). This intended reduction in GHG emissions will be accomplished with an enforceable statewide cap on GHG emissions, which will be phased in 2012. To effectively implement the cap, AB 32 requires CARB to develop appropriate regulations and establish a mandatory reporting system to track and monitor global warming emissions levels from stationary sources.

This bill is the first statewide policy in the United States to mitigate GHG emissions and to include penalties for non-compliance. Consistent with goals and targets set by other actions taking place at the regional and international levels, AB 32 sets precedence in inventorying and reducing GHG emissions.

In passing AB 32, the state legislature acknowledged that global warming and related effects of climate change are a significant environmental issue, particularly the anthropogenic causes that are believed to be largely attributable to increased concentration of GHGs in the atmosphere.

Executive Order S-20-06

On October 17, 2006, Governor Arnold Schwarzenegger signed Executive Order S-20-06, which calls for continued efforts and coordination among state agencies on the

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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implementation of GHG emission reduction policies and AB 32 and Health and Safety Code (Division 25.5) through the design and development of a market-based compliance program. In addition, Executive Order S-20-06 requires the development of GHG reporting and reduction protocols and a multi-state registry through joint efforts among CARB, Cal/EPA, and the California Climate Action Registry (CCAR). Executive Order S-20-06 directs the Secretary for Environmental Protection to coordinate with the Climate Action Team to develop a plan to create incentives for market-based mechanisms that have the potential of reducing GHG emissions.

California Senate Bill 97

Approved by Governor Arnold Schwarzenegger on August 24, 2007, Senate Bill (SB) 97 is designed to work in conjunction with the State CEQA Guidelines and AB 32. Pursuant to the State CEQA Guidelines, the Office of Planning and Research (OPR) is required to prepare for and develop proposed guidelines for implementation of CEQA by public agencies. Pursuant to AB 32, the CARB is required to monitor and regulate emission sources of GHGs that cause global warming in order to reduce GHG emissions. SB 97 states, "SB 97 requires OPR, by July 1, 2009, to prepare, develop, and transmit to the [CARB] guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption." As directed by SB 97, the Natural Resources Agency adopted amendments to the CEQA Guidelines for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010.

In addition, OPR and CARB are required to periodically update the guidelines to incorporate new information or criteria established by CARB pursuant to AB 32. SB 97 applies to any environmental documents, including an Environmental Impact Report, a Negative Declaration, a Mitigated Negative Declaration, or other documents required by CEQA that have not been certified or adopted by the CEQA lead agency by the date of the adoption of the regulations.

State of California Office of the Attorney General Guidance Letter on California Environmental Quality Act, Addressing Global Warming Impacts at the Local Agency Level

On May 21, 2008, the California Office of the Attorney General provided guidance to public agencies on how to address global warming impacts in CEQA documents. In the publication entitled "*The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level*," the Office of the Attorney General directs public agencies to take a leadership role in integrating sustainability into public projects by providing 52 project-level mitigation measures for consideration in the development of projects (Office of Attorney General 2008). In addition, the Office of the Attorney General has negotiated four settlement agreements under CEQA, all of which require the project proponents to consider sustainable design for projects and feasible mitigation measures and alternatives to substantially lessen global warming related

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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effects.

State of California Office of Planning and Research Technical Advisory

On June 19, 2008, the California OPR provided guidance on how to address climate change in CEQA documents. In the technical advisory, CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review, OPR issues technical guidance on how to perform GHG analyses in the interim before further state guidelines become available (California Governor's Office of Planning and Research 2008).

Regional

Monterey Bay Unified Air Pollution Control District

The proposed project is located within the North Central Coast Air Basin (Basin) that is under the jurisdiction of the MBUAPCD. The MBUAPCD is responsible for regulating stationary, indirect and area sources of pollution within the Basin. The MBUAPCD's jurisdiction includes Monterey, Santa Cruz and San Benito counties. The MBUAPCD is one out of 35 air quality management districts that have prepared Air Quality Management Plans (AQMPs) to accomplish the 5% annual reduction goal required by the California Clean Air Act (CCAA). The Basin is not in attainment of the California Ambient Air Quality Standards (CAAQS) for PM₁₀ and O₃. The Basin is in attainment of all NAAQS.

The MBUAPCD's primary means of implementing air quality plans and policies is through adoption and enforcement of rules and regulations. Some of the key rules that may be applicable to the proposed project as they relate to landfill gas generation are discussed below:

- **Rule 437 (Municipal Solid Waste Landfills)** is intended to control emissions from existing Municipal Solid Waste Landfills as required under the provisions of the Federal Clean Air Act and regulations promulgated by USEPA at 40 CFR Part 60 Subpart Cc.
- **Rule 1010 (Air Toxic Control Measure for Stationary Compression Ignition Engines)** to reduce diesel particulate matter (PM) from stationary diesel-fueled compression ignition (CI) engines and consistent with California Health and Safety Code Section 39666(d) is a replacement rule for 17 California Code of Regulations Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines.

Local

County of Santa Cruz General Plan

The proposed Ordinance would be expected to be consistent with the County of Santa Cruz General Plan governing air quality and would not be expected to result in a change to the population growth assumption used by the AMBAG for attainment planning. The County of Santa Cruz General Plan has developed goals and policies for improving air quality in the county. Many policies are transportation-based because of the direct link between air quality and the circulation element. There is one objective

	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Potentially Significant Impact			

and one related policy relevant to the county's proposed Ordinance that is capable of contributing toward avoiding and reducing the generation of GHG emissions (County of Santa Cruz 1994):

- **Objective 5.18:** To improve air quality of Santa Cruz County by meeting or exceeding state and federal ambient air quality standards, protect county residents from the health hazards of air pollution, protect agriculture from air pollution induced crop losses and prevent degradation of the scenic character of the area.
- **Policy 5.18.9:** Greenhouse Gas Reduction – Implement state and federal legislation promoting the national goal of 35% reduction of carbon dioxide and other greenhouse gases by 2000.

County of Santa Cruz Zero Waste Goal (Resolution No. 440.99)

The County of Santa Cruz Board of Supervisors passed Resolution No. 440.99 on November 2, 1999. The resolution states, "The County of Santa Cruz hereby encourages the pursuit of zero waste as a long-term goal in order to eliminate waste and pollution in the manufacture, use, storage, and recycling of materials. This goal can be achieved through action plans and measures that significantly reduce waste and pollution. These measures will include encouragement of residents, businesses and agencies to judiciously use, reuse, and recycle materials, and motivation of businesses to manufacture and market less toxic and more durable, repairable, reusable, recycled, and recyclable products." The proposed Ordinance would be consistent with this resolution by encouraging the use of reusable shopping bags, eliminating the distribution of single-use plastic carryout bags, and placing a store charge on single-use paper carryout bags to discourage their use.

Climate Action Planning

The County of Santa Cruz is currently working with the Association of Monterey Bay Area Governments (AMBAG) and ICLEI (Local Governments for Sustainability) to prepare the greenhouse gas emissions inventories for both the municipality (county operations) and the community-wide (all unincorporated areas in Santa Cruz County) inventories. Following the completion of the greenhouse gas inventories in December 2010, the county will begin preparation of a Climate Action Plan.

EXISTING CONDITIONS

North Central Coast Air Basin

The Basin, which is just south of the San Francisco Bay Area Air Basin, covers an area of 5,159 square miles and consists of the counties of Santa Cruz, San Benito, and Monterey. Westerly winds predominate in all seasons, but are strongest and most persistent during the spring and summer months. The extent and severity of the air pollution problems in the Basin are a function of the area's natural physical characteristics (weather and topography), as well as human created influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall and topography all affect the accumulation and/or dispersion of

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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pollutants throughout the Basin area. In general, air pollution potential of the coastal areas is relatively low due to persistent winds. The Basin is, however, subject to temperature inversions that restrict vertical mixing of pollutants and the warmer inland valleys of the Basin have a high pollution potential.

Global Climate Change Gases

The natural process through which heat is retained in the troposphere is called the “greenhouse effect.” The greenhouse effect traps heat in the troposphere through a three fold process as follows: shortwave radiation emitted by the sun is absorbed by the earth; the earth emits a portion of this energy in the form of longwave radiation; and greenhouse gases in the upper atmosphere absorb this longwave radiation and emit this longwave radiation both into space and back toward earth. This “trapping” of the longwave (thermal) radiation emitted back toward the earth is the underlying process of the greenhouse effect.

The most abundant greenhouse gases are water vapor and carbon dioxide. While many other trace gases have greater ability to absorb and re-radiate longwave radiation, these gases are not as plentiful in the atmosphere. For this reason, and to gauge the potency of greenhouse gases, scientists have established a Global Warming Potential for each greenhouse gas based on its ability to absorb and re-radiate long-wave radiation. The Global Warming Potential of a gas is determined using carbon dioxide as the reference gas with a Global Warming Potential of 1. The principal greenhouse gases that enter the atmosphere because of human activities are:

- **Carbon Dioxide (CO₂):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle. This gas has a global warming potential of 1.
- **Methane (CH₄):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. This gas has a global warming potential of 21.
- **Nitrous Oxide (N₂O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. This gas has a global warming potential of 310.
- **Fluorinated Gases:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases (“High GWP gases”) (U.S. EPA 2010). These gases

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have global warming potentials as high as 23,900.

IMPACTS

Thresholds of Significance

For the purposes of this Initial Study, a global climate change impact is considered significant if the project would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Greenhouse Gas Emissions Discussion

Various life cycle assessments (LCAs) of single-use carryout bags have been completed in support of bag regulation policies worldwide. Most LCAs try to account for greenhouse gas emissions that result from all stages of product life, from product creation to disposal. LCAs do not have consistent methodologies, and frequently use assumptions that differ from each other, and from local conditions. One example is the assumption that some percentage of single-use bags in the waste stream would be incinerated in a waste-to-energy system. Other than wood chips sold as fuel, waste in the County of Santa Cruz is never incinerated because there is no municipal solid waste incinerator in the area. Including it in a discussion of paper and plastic bags is, therefore, not relevant. This discussion of impacts does not, therefore, rely on the various LCAs for any purpose other than as a point of comparison.

According to some LCAs prepared by consultants to the plastic bag industry, single-use paper bags generally result in greater greenhouse gas emissions when compared to single-use plastic bags and reusable bags. This is attributed to several factors, including the manufacturing process and the effect of paper bag weight and bulk on the transportation process, plus the eventual degradation of paper bags in landfills. The findings from other LCAs seem to differ depending on the study, and no comprehensive comparison of the studies has been made by a neutral third party. In addition, no LCA was found that looked at the emissions associated with the manufacture of 40% or 100% recycled content paper bags.

Additionally, heavier single-use plastic bags made of LDPE, which are often used by clothing and boutique stores, were found by some studies to result in greater greenhouse gas emissions than both single-use paper bags and single-use plastic bags made of HDPE, which are most typically used by grocery stores and large format retail stores.

There is a quantity of energy required to deliver all types of single-use bags to the stores where they are given away, and further energy use associated with picking up those that end up as litter, and with removing those that are discarded as solid waste. Because the county was unable to identify any delivery system dedicated only to distribution to users of plastic (or paper) single-use bags, the exact increment of energy use, and the resulting greenhouse gas emissions, associated with their delivery

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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to the location where they are given to the public is unknown.

For the purposes of this Initial Study, the County of Santa Cruz is assuming that single-use plastic bags currently distributed to the customers of businesses in the unincorporated areas of Santa Cruz County total approximately 138,000 plastic bags per day (see Attachment 2). Under the proposed Ordinance (§5.48.015(2)), single-use plastic carryout bags would be reduced to zero.

Greenhouse Gas Emissions Impacts

It has been suggested by opponents that ordinances proposing the ban of single-use plastic carryout bags would lead to an increase in single-use paper bag use, because consumers would be willing to pay the store charge to use paper bags. An increase in single-use paper bag use could then lead to incremental increases in gas emissions associated with their manufacture and delivery. Of course, a substantial decrease in greenhouse gas emissions associated with the elimination of plastic bag manufacturing and delivery to the county would be occurring simultaneously. Based on available information, it cannot be definitively determined what the net increases or decreases in greenhouse gas emissions would be from the proposed ordinance.

Although programs to eliminate or reduce single-use disposable bags have been implemented all over the world, there are variations in the programs. The most well known example is the country of Ireland, which placed a charge on single-use plastic carryout bags in 2002. As a result of the charge, the use of single-use plastic bags was reduced by 90% almost immediately. Additionally, surveys completed in 2003 indicated that approximately 90% of consumers were using reusable bags, so it does not appear that there was a dramatic shift to paper bag use. Individual stores in Australia and Canada that charge for single-use plastic bags have experienced reductions of 83 and 97%, respectively. In recent follow-up to a charge on single-use carryout bags enacted in the District of Columbia, a \$0.05 charge for all single-use bags resulted in an immediate substantial reduction in their use during the first month. District staff estimates that the reduction is in the 50-80% range for both paper and plastic single-use carryout bags (Weise 2010).

Taiwan introduced its "Restricted Use Policy on Plastic Shopping Bags" in 2002. The policy does not mandate a particular level of levy. Retailers have the ability to set and retain the levy per plastic bag. Before the introduction of the levy, the plastic shopping bag usage in Taiwan was about 2.5 bags/person/day. After the introduction of the levy, the plastic shopping bag usage dropped by 80% in the first year, but slightly rebounded subsequently (Hong Kong Legislative Council, 2009).

A survey of residents of the City of San Jose, California conducted in the spring/summer of 2010 did indeed verify that a higher charge on single-use paper bags and a ban on single-use plastic bags would increase customers' use of reusable bags. But the survey also identified a very high level of initial participation even with a \$0.10 charge. Of those responding to the survey, 81% indicated they would bring reusable bags for shopping if plastic bags were banned and recycled content paper bags cost \$0.10. With a \$0.25 charge on paper bags, 90% of the survey respondents would bring reusable bags (City of San Jose, 2010). This supports the County's assumptions

	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Potentially Significant Impact			

in drafting the proposed ordinance that the environmentally aware citizens of Santa Cruz County would respond positively to the proposed ordinance. Based on these results, it is anticipated that the number of single-use paper bags used in the unincorporated County may be substantially reduced when a store charge is imposed.

Since single-use paper bags sold to consumers would be required to have at least 40% recycled content under the proposed ordinance, the total quantity of greenhouse gas emissions resulting from a change from a plastic to a paper bag may not increase substantially because manufacture of paper using recycled content results in less greenhouse gas emissions than bags manufactured using virgin material (Environmental Defense Fund, 2010). In addition, paper bags used in grocery stores are larger than the HDPE plastic bags and would require fewer bags for more merchandise.

To arrive at estimates of potential impacts, three pieces of information are needed: (1) the current number of single-use paper and plastic bags used in unincorporated areas of Santa Cruz county; (2) the future number of single-use paper and plastic bags used as a result of the proposed ordinance; and (3) the per-bag impacts as reported in the Boustead LCA (2007). It is estimated that currently there are approximately 50 million single-use plastic bags and approximately 12 million single-use paper bags used in the unincorporated areas of Santa Cruz county every year. Using the behavior change estimates described above and in the Herrera report, it is estimated that with the ban on plastic bags and a \$0.10 charge on paper bags, 65% of people would use reusable bags or no bag, and 35% of people would use paper bags. Using these percentages, it is possible to estimate the number of bags that would be used in the unincorporated areas of the county.

For paper bags, the size ratio compared to plastic bags is important to consider when estimating the effect of consumers switching from plastic bags to paper bags. There are a variety of bag sizes for both types of single-use carryout bags. The most commonly used of each type are summarized in Table 4 as small plastic, large plastic, small Kraft paper and large Kraft paper. All of these bags are currently used in the unincorporated areas of Santa Cruz county. For example: the small paper and small plastic bags are presently distributed by Safeway and Home Depot; the large paper bags are distributed by Deluxe Foods and New Leaf Community Markets; and the large plastic bags are distributed at Toys R Us. The size ratio of all for sizes of bags is summarized in Table 4.

The bags evaluated in the Boustead LCA were the large plastic and Large Kraft paper bags. Boustead assumed that everyone used the same size bags. It becomes very difficult to estimate the number and size plastic bags that would be replaced by the number and size paper bags. Since the larger grocery store chains use the smaller plastic bags. It is likely that most of the estimated 50 million plastic carryout bags currently used annually in the County are the smaller size since most of the grocery stores that provide the larger capacity paper bags do not currently offer single-use plastic carryout bags as an option.

Since it is not possible to predict how many of which size paper bags might be

Potentially Significant Impact Less than Significant with Mitigation Incorporated Less than Significant Impact No Impact

purchased in the future, this discussion assumes that any additional number of single-use carryout paper bags would replace single-use plastic bags at a conservative ratio of 1.5:1 rather than 2:1, compared to the number of single-use plastic carryout bags presently used by the same customers. However, it should also be noted that when customers are paying for bags, they may insist on the larger Kraft paper bags, which could also influence their willingness to pay for the smaller bags, making the larger ratio (2:1) more appropriate. Therefore, an increase of approximately 5 million additional single-use paper carryout bags annually within the unincorporated County would be a conservative estimate.

Bag	Tennis Balls	Capacity ¹
Small Plastic: HDPE ² Plastic (Safeway and Home Depot)	57	1
Large Plastic: LDPE ³ Plastic (Toys R Us)	70	1.2
Small Paper: Kraft Paper 14x12x7 (Safeway)	86	1.5
Large Paper: Kraft Paper 17x12x7 (Deluxe Market)	114	2
Notes: 1. Capacities are relative to that of the Small Plastic Bag, which is considered to have a baseline capacity of one. 2. HDPE = High-density Polyethylene 3. LDPE = Low-density Polyethylene Sources: City of San Jose 2010 and County of Santa Cruz 2010.		

In addition, Table 2 summarizes the findings of the streamlined environmental assessment of shopping bag alternatives conducted by Hyder (2007). A rating of one to five was used to show the diversity of impacts for each of the criteria, with one being the lowest impact. Table 2 shows that the life cycle of single-use HDPE bags result in slightly higher greenhouse gas emissions than reusable cloth bags, and substantially fewer than single-use Kraft paper and single-use LDPE plastic bags (Hyder 2007).

However, using the methodology described earlier, the data from Boustead (2007) shows that there would be an annual reduction in greenhouse gas emissions of 372 tons of CO₂ equivalent compared to existing conditions with the elimination of carryout plastic bag use and the anticipated minor increase of Kraft paper bag use combined with reusable bag use (see Table 5). With the inclusion of the "Optional" language exempting approximately 85 food establishments from the store charge on paper bags, the annual reduction in greenhouse gas emissions would be reduced to approximately 205 tons of CO₂ equivalent compared to existing conditions. The subsequent increase from \$0.10 to \$0.25 proposed by the ordinance would likely result in the further reduction of single-use paper bag use, which would further reduce CO₂ equivalent emissions. In addition, the proposed ordinance would require that retail establishments keep annual records of paper bag distribution to be made available to the Director of Public Works, or designee upon request. The records would be evaluated annually for the first five years by the County to ensure the effectiveness of the ordinance. If it is determined that single-use paper bag use has increased beyond the anticipated levels, the Board of Supervisors may consider increasing the store

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charge to improve the effectiveness of the ordinance.

Type of Single-use Shopping Bag	Estimated Number of Shopping Bags Used Annually Under Existing Conditions	Estimated Number of Shopping Bags Used Annually Under Proposed Ordinance	Estimated Number of Shopping Bags Used Annually Under Proposed Ordinance "Optional"	Change in Annual CO ₂ Equivalent Emissions Under Proposed Ordinance	Change in Annual CO ₂ Equivalent Emissions Under Proposed Ordinance "Optional"
High-density Polyethylene (HDPE) Plastic Bag	50,000,000	(50,000,000) ²	(50,000,000) ²	(1,175 tons) ³	(1,175 tons) ³
Kraft Paper Bag	12,000,000	17,000,000	23,000,000	719 tons ³	929 tons ³
Reusable Bag	19,000 ⁴	356,000	356,000	41 tons ⁵	41 tons ⁵
Total Paper and Plastic	62,000,000	(33,000,000)	(27,000,000)	(372 tons)	(205 tons)

Notes:

- Annual change in greenhouse gas emissions (shown as CO₂ equivalent) is based on the entire lifecycle of the bags beginning with the raw materials for production through the product's end of life.
- Approximately 50,000,000 polyethylene plastic bags provide the equivalent capacity of 37,500,000 Kraft paper bags. This assumes that paper bags would replace plastic bags at a ratio of 1 paper bag for every 1.5 plastic bags based on their capacity.
- Tons calculated using methodology provided by Boustead (2007).
- The actual number of reusable shopping bags is unknown and greater than zero. Therefore, a 5% figure has been used as a conservative estimate.
- This number assumes that each reusable shopping bag is reused a total of 100 times annually, or twice per week prior to recycling or disposal. Total CO₂ equivalent per 1,000 reusable shopping bags used is 0.1146 tons (AEA Technology 2005)

Source: County of Santa Cruz 2011.

It should also be noted that a methane gas collection system currently in place at the Buena Vista landfill has been designed to capture a minimum of 75% of all landfill gas (a CO₂ equivalent of 21) generated through decomposition (ICLEI 2008). The collected landfill gas (composed of approximately 50-55% methane and 40-45% carbon dioxide; U.S. EPA 2000) is then burned at the cogeneration plant to produce electricity, releasing only CO₂. As a result, those single-use Kraft paper bags that do become landfilled at the Buena Vista Landfill would result in the release of much lower levels of CO₂ equivalents than suggested in the 2007 Boustead study.

The elimination of single-use plastic carryout bags used daily in the unincorporated County would result in a decrease in the shipping capacity needed to transport those bags to their regional distribution centers and eventually to stores. Since the bags are generally transported to users in mixed loads (groceries and non-food items, etc.), there may be no reduction in trips. Capacity in the trucks may be used to transport reusable bags offered for sale in the stores, or other commodities handled by the distributor.

Even if it were assumed that bags would be transported in discrete truckloads, it would require approximately 22 truck trips (each carrying 24 pallets x 48 cases) to transport 50,000,000 HDPE shopping bags. Under the proposed ordinance, these trips would be eliminated. However, there would be an estimated annual demand for an additional 5,000,000 Kraft paper bags from existing conditions. This would require an additional

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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23 truck trips (each carrying 23 pallets x 18 cases) to transport the estimated 5,000,000 Kraft paper shopping bags. This would result in one additional truck trips annually under the proposed ordinance.

Under the "Optional" scenario exempting food establishments from the store charge on paper bags, there would be an estimated annual demand for an additional 13,000,000 Kraft paper bags from existing conditions. This would require an additional 60 truck trips (each carrying 23 pallets x 18 cases) to transport the estimated 13,000,000 Kraft paper shopping bags. This would result in 38 additional truck trips annually under the "Optional" scenario.

To ensure a reduction in greenhouse gasses is the result following adoption and implementation of the ordinance, it is vital that reusable carryout bags are made available and used at County of Santa Cruz retailers. To ensure this reduction, the following mitigation shall be implemented: *The County will work with retailers and members of the community to increase the availability and use of reusable carryout bags. The County is currently a member of the Central Coast Recycling Media Coalition (CCRMC), which coordinates education and outreach for numerous cities and counties in the Monterey Bay Area. The County of Santa Cruz Department of Public Works will continue to contribute a minimum of \$10,000 per year to CCRMC in support of ongoing programs promoting the use of reusable shopping bags. Bag use would be reduced even further when the store charge for single-use paper bags is raised to \$0.25 one year after implementation.*

Project impacts from greenhouse gas emissions would be less than significant with the implementation of the required mitigation.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion:

The proposed County of Santa Cruz Single-use Bag Ordinance would be consistent with the following policies and regulations adopted for the purposes of reducing greenhouse gas emissions.

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. Recognizing that California is particularly vulnerable to the impacts of climate change, Executive Order S-3-05 establishes statewide climate change emission reduction targets to reduce CO₂ equivalent (CO₂e) to the 2000 level (473 million metric tons) by 2010, to the 1990 level (427 million metric tons of CO₂e) by 2020, and to 80% below the 1990 level (85 million metric tons of CO₂e) by 2050, California Business-as-usual Greenhouse Gas Emissions and Targets; Climate Action Team 2006a). The proposed ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 372 tons (see Table 5). Under the "Optional" scenario exempting the store charge on

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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paper bags for food establishments, the ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 205 tons annually (see Table 5).

AB 32 – Global Warming Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed into law the Global Warming Solutions Act, or Assembly Bill 32 (AB 32), which requires a statewide commitment and effort to reduce GHG emissions to 1990 levels by 2020 (25% below business-as-usual). This intended reduction in GHG emissions will be accomplished with an enforceable statewide cap on GHG emissions, which will be phased in 2012. The proposed Ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 372 tons (see Table 5). Under the “Optional” scenario exempting the store charge on paper bags for food establishments, the ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 205 tons annually (see Table 5).

Monterey Bay Unified APCD (Rule 437)

Rule 437 (Municipal Solid Waste Landfills) intended to control emissions from existing municipal solid waste landfills as required under the provisions of the Federal Clean Air Act and regulations promulgated by USEPA at 40 CFR Part 60 Subpart Cc. Although the proposed ordinance may result in a slight increase in greenhouse gas emissions resulting from the anticipated minor increase in paper bag use (approximately 5.5 million bags annually), the net annual reduction of greenhouse gas emissions (CO₂ equivalent) would be 372 tons (see Table 5). Under the “Optional” scenario exempting the store charge on paper bags for food establishments, the ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 205 tons annually (see Table 5).

County of Santa Cruz General Plan

- **Objective 5.18:** “To improve air quality of Santa Cruz County by meeting or exceeding state and federal ambient air quality standards, protect county residents from the health hazards of air pollution, protect agriculture from air pollution induced crop losses and prevent degradation of the scenic character of the area.” The proposed Ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 372 tons (see Table 5). Under the “Optional” scenario exempting the store charge on paper bags for food establishments, the ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 205 tons annually (see Table 5).
- **Policy 5.18.9:** “Greenhouse Gas Reduction – Implement state and federal legislation promoting the national goal of 35% reduction of carbon dioxide and other greenhouse gases by 2000.” The proposed Ordinance would reduce greenhouse gas emissions (CO₂ equivalent) by a minimum of 372 tons (see Table 5). Under the “Optional” scenario exempting the store charge on paper bags for food establishments, the ordinance would reduce greenhouse gas

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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emissions (CO₂ equivalent) by a minimum of 205 tons annually (see Table 5).

County of Santa Cruz Zero Waste Goal (Resolution No. 440.99)

The County of Santa Cruz Board of Supervisors passed Resolution No. 440.99 on November 2, 1999. The resolution states, "The County of Santa Cruz hereby encourages the pursuit of zero waste as a long-term goal in order to eliminate waste and pollution in the manufacture, use, storage, and recycling of materials. This goal can be achieved through action plans and measures that significantly reduce waste and pollution. These measures will include encouragement of residents, businesses and agencies to judiciously use, reuse, and recycle materials, and motivation of businesses to manufacture and market less toxic and more durable, repairable, reusable, recycled, and recyclable products." The proposed Ordinance would be consistent with this resolution by encouraging the use of reusable shopping bags, eliminating the distribution of single-use plastic carryout bags, and placing a store charge on single-use paper carryout bags to discourage their use.

County of Santa Cruz Climate Action Planning

The proposed Ordinance, unlike most development projects, would result in the reduction of greenhouse gas emissions through the ban on distributing an estimated 50,000,000 HDPE plastic shopping bags annually within the unincorporated County of Santa Cruz. At this time, Santa Cruz County is in the process of developing a Climate Action Plan (CAP) intended to establish specific emission reduction goals and necessary actions to reduce greenhouse gas levels to pre-1990 levels as required under AB 32 legislation. Until the CAP is completed, there are no specific standards or criteria to apply to this proposal. However, only beneficial effects to green house gas emissions would be expected from this proposal.

M. PUBLIC SERVICES

Would the project:

1. 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:

- | | | | | |
|-----------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Parks or other recreational activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Other public facilities; including the maintenance of roads?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion (a through e): The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an impact to public services. Therefore, no impact is anticipated from project implementation.

N. RECREATION

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Would the project 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an increase in the use of parks or other recreational facilities. Therefore, no impact is anticipated from project implementation.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not require the construction or expansion of recreational facilities. Therefore, no impact is anticipated from project implementation.

O. UTILITIES AND SERVICE SYSTEMS

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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significant environmental effects?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not require the construction or expansion of storm water drainage facilities. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. | 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not require the construction or expansion of water or wastewater facilities. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. | Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in an exceedance of wastewater treatment requirements. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 4. | Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not require additional water supplies or expanded entitlements. Therefore, no impact is anticipated from project implementation.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 5. | Result in 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not generate additional wastewater requiring additional capacity. Therefore, no impact is anticipated from project implementation.

6. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not generate additional solid waste necessitating an increase in landfill capacity. Therefore, no impact is anticipated from project implementation.

7. Comply with federal, state, and local statutes and regulations related to solid waste?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not generate additional solid waste necessitating an increase in landfill capacity. The proposed project may actually reduce the amount of solid waste generated in the county through the increased use of reusable carryout bags and the reduction of disposable paper and plastic carryout bags. Therefore, no adverse impact is anticipated from project implementation.

P. LAND USE AND PLANNING

Would the project:

1. 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, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not conflict with any regulations or policies adopted for the purpose of avoiding or mitigating an environmental effect. The proposed project would be consistent with the following General Plan Policies.

Policy 5.3.1: Support the Monterey Bay Sanctuary (LCP)

"Support the mission of the Monterey Bay National Marine Sanctuary to facilitate the long-term management, protection, understanding and awareness of its resources and

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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qualities.”

Policy 5.4.1: Protecting the Monterey Bay National Marine Sanctuary from Adverse Impacts (LCP)

“Prohibit activities which could adversely impact sensitive habitats of the Monterey Bay National Marine Sanctuary, including the discharge of wastes and hazardous materials. The main sources of concern are wastewater discharge, urban runoff, and toxic agricultural drainage water, including that originating outside of Santa Cruz County, and the accidental release of oil or other hazardous material from coastal tanker traffic.”

Monterey Bay National Marine Sanctuary

The MBNMS, designated in 1992, is a federally protected marine area offshore of California’s central coast (see Figure 6). Stretching from Marin County to Cambria, the MBNMS encompasses a shoreline length of 276 miles and 5,322 square miles of ocean, extending an average distance of 25 miles from shore. At its deepest point, the MBNMS reaches down 10,663 feet (more than two miles). The MBNMS encompasses a range of habitats from sandy beaches to rocky intertidal areas to open ocean, as well as the nation’s largest kelp forest and submarine canyon. Its highly productive biological communities host one of the highest levels of marine biodiversity in the world, including twenty-six threatened and endangered species. The MBNMS is adjacent to one of the largest urban concentrations in North America with several population centers of approximately eight million people living within 50 miles of its shoreline, many who rely on MBNMS resources for pleasure or work.

The National Marine Sanctuaries Act

The National Marine Sanctuaries Act, as amended, (NMSA) (16 U.S.C. §1431 et seq.) is the law that governs the National Marine Sanctuaries Program (NMSP). The NMSA authorizes the Secretary of Commerce to designate as national marine sanctuaries areas of the marine environment or Great Lakes with special national significance due to their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or aesthetic qualities. Additionally, the NMSA established the NMSP as the federal program charged with managing national marine sanctuaries. The primary objective of the NMSA is to protect marine resources. The NMSA also directs the NMSP to facilitate all public and private uses of those resources compatible with the primary objective of resource protection.

The purposes and policies of the Monterey Bay National Marine Sanctuary Act are:

1. To identify and designate as national marine sanctuaries areas of the marine environment which are of special national significance and to manage these areas as the National Marine Sanctuaries Program;
2. To provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner that complements existing regulatory authorities;
3. To maintain the natural biological communities in the national marine sanctuaries, and to protect, and, where appropriate, restore and enhance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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natural habitats, populations, and ecological processes;

4. To enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural, and archeological resources of the National Marine Sanctuaries Program;
5. To support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas;
6. To facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities;
7. To develop and implement coordinated plans for the protection and management of these areas with appropriate federal agencies, state and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas;
8. To create models of, and incentives for, ways to conserve and manage these areas, including the application of innovative management techniques; and
9. To cooperate with global programs encouraging conservation of marine resources.

The proposed project would contribute to the protection of both aesthetic and aquatic resources, resulting in fewer plastic and paper carryout bags collecting in wetland and riparian areas, and within the marine environment. Therefore, the proposed project would be consistent with both the County of Santa Cruz General Plan policies and the National Marine Sanctuaries Act. As a result, no impact is anticipated from project implementation.

- | | | | | | |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. | Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not conflict with any applicable conservation plan. A reduction of single use paper and plastic bags released into the environment would be considered a beneficial effect of the proposed project. Therefore, no adverse impact is anticipated from project implementation.

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. | Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not physically divide an established community. Therefore, no impact is anticipated from project implementation.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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Q. POPULATION AND HOUSING

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags and would not induce population growth within the unincorporated county. The proposed project does not propose any physical or regulatory change that would remove a restriction to or encourage population growth in the area including, but not limited to the following: new or extended infrastructure or public facilities; new commercial or industrial facilities; large-scale residential development; accelerated conversion of homes to commercial or multi-family use; or regulatory changes including General Plan amendments, specific plan amendments, zone reclassifications, sewer or water annexations; or Local Agency Formation Commission annexation actions. Therefore, no impact is anticipated from project implementation.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not displace any existing housing. Therefore, no impact is anticipated from project implementation.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Discussion: The proposed Ordinance regulates single-use plastic and paper bags. No physical or land use changes are proposed; and therefore, the proposed project would not result in the displacement of people. Therefore, no impact is anticipated from project implementation.

R. MANDATORY FINDINGS OF SIGNIFICANCE

- | | Potentially Significant Impact | Less than Significant with Mitigation | Less than Significant Impact | No Impact |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| 1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion: The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in Section III-C of this Initial Study. No biological resources would be impacted by implementation of the proposed Ordinance. The proposed Ordinance would result in beneficial effects from the reduction of single-use plastic bags being released into the environment. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

- | | Potentially Significant Impact | Less than Significant with Mitigation | Less than Significant Impact | No Impact |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| 2. Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion: In addition to project specific impacts, this evaluation considered the projects potential for incremental effects that are cumulatively considerable. Although the potential exists for significant cumulative impacts from greenhouse gas emissions following project approval and implementation, proposed mitigation measures to track and report paper bag use at the retail level and increase public education and outreach would ensure that paper bag use is reduced below anticipated levels, resulting in an

overall reduction of greenhouse gas emissions. As a result of this evaluation, there were determined to be no significant cumulative effects, and no substantial evidence that there are cumulative effects associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in contained within Section III. As a result of this evaluation, there is no substantial evidence that there would be adverse effects to human beings associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

IV. TECHNICAL REVIEW CHECKLIST

	<u>REQUIRED</u>	<u>DATE COMPLETED</u>
Agricultural Policy Advisory Commission (APAC) Review	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Archaeological Review	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Biotic Report/Assessment	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Geologic Hazards Assessment (GHA)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Geologic Report	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Geotechnical (Soils) Report	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Riparian Pre-Site	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Septic Lot Check	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____
Other:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	_____

V. REFERENCES USED IN THE COMPLETION OF THIS ENVIRONMENTAL REVIEW INITIAL STUDY

AB 2449, 2006

California State Assembly Bill 2449, Chapter 845, Statutes of 2006, an act to add and repeal Chapter 5.1 (commencing with Section 42250 to Part 3 of Division 30) of the Public Resources Code. www.zerowaste.ca.gov/PlasticBags/default.htm

AEA Technology. 2009

Single Use Bag Study. Final report prepared for the Welsh Assembly Government, August 2009.

AEA Technology 2005

Proposed Plastic Bag Levy - Extended Impact Assessment Final Report. Prepared by AEA Technology Environment. 2005.

American Chemistry Council, 2009.

In Wake of Global Recession, U.S. Plastic Resins Industry Struggled to Regain Ground During 2009.

http://www.americanchemistry.com/s_acc/sec_policyissues.asp?CID=996&DID=9827

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 Alliance.

Cadman, J., S. Evans, M. Holland, and R. Boyd. 2005.

Proposed Plastic Bag Levy – Extended Impact Assessment Final Report. Prepared for Scottish Executive 2005.

California Climate Action Team 2006a.

Climate Action Team Report to Governor Schwarzenegger and the California Legislature. Sacramento, California on April 3, 2006.

California Climate Action Team 2006b.

Final Draft of Chapter 8 on Economic Assessment of the Draft Climate Action Team Report to the Governor and Legislature. Sacramento, California on January 12, 2006.

CDFG 2009.

California Department of Fish and Game, Natural Diversity Database Special Animals List, July 2009.

California Governor's Office of Planning and Research 2008.

CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. Technical Advisory. Sacramento, California, June 19, 2008

City and County of San Francisco 2010.

Department of the Environment. Memo from Jack Macy, Commercial Zero Waste Coordinator. January 2010.

City of San Jose, 2010.

Single-use Carryout Bag Ordinance, Prepared for the City of San Jose by David J. Powers & Associates, Inc., July 2010.

CIWMB 2007

California Integrated Waste Management Board. Resolution, Agenda Item 14, June 12, 2007 Board Meeting.

CIWMB 2008

California Integrated Waste Management Board. The Facts About Compostable Plastics.

CIWMB 2009

California Integrated waste Management Board. California 2008 Statewide Waste Characterization Study. Prepared by Cascadia Consulting Group. August 2009.

County of Santa Cruz 1994.

1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

Derraik, J.B., and M.R. Gregory. 2009.

Environmental implications of plastic debris in marine settings- entanglement, ingestion, smotherings, hangers-on, hitchhiking, and alien invasions. *Phil. Trans. R. Soc. B.* 364.

Ecobilan 2004

Évaluation des impacts environnementaux des sacs de caisse Carrefour. Analyse du cycle de vie de sacs de caisse en plastique, papier et matériau biodégradable', Report prepared for Carrefour, Ecobilan, February 2004.

Environmental Defense Fund 2010

Environmental Defense Fund Paper Calculator. <http://www.edf.org/papercalculator>

Environmental Paper Network. 2007.

The State of the Paper Industry. Monitoring the Indicators of Environmental Performance. A collaborative report by the Steering Committee of the Environmental Paper Network.

EPIC 2009

Environmental and Plastics Industry Council (EPIC). A Microbiological Study of Reusable Bags and 'First or single-use' Plastic Bags. May 2009.

ExcelPlas Australia (2004).

ExcelPlas Australia, Centre for Design at RMIT, and NOLAN-ITU. 2004. The Impacts of Degradable Plastic Bags in Australia.

FRIDGE 2002

Fund for Research into Industrial Development, Growth and Equity (FRIDGE). 2002. "Socio-Economic Impact of the Proposed Plastic Bag Regulations."

Greene, Joseph. 2007.

Biodegradation of Compostable Plastics in Green Yard-Waste Compost Environment. *Journal of Polymers and the Environment* 2007(15):269-273.

Herrera et al. 2008.

Alternatives to Disposable Shopping Bags and Food Service Items Volume I and II.
Prepared for Seattle Public Utilities. January 2008.

Hong Kong Legislative Council, 2009.

Hong Kong Legislative Council Panel on Environmental Affairs. Overseas
Experience on Plastic Shopping Bag Reduction. April 30, 2009.

Hyder Consulting. 2007.

Comparison of existing life cycle analyses of plastic bag alternatives. Final Report
prepared by Hyder Consulting Pty Ltd., dated April 18, 2007.

ICF International, 2010.

Master Environmental Assessment on Single-Use and Reusable Bags. Prepared for
Green Cities California by ICF International, March 2010.

ICLEI 2008.

ICLEI-Local Governments for Sustainability USA, prepared the Fugitive Emissions
from Government Owned Landfills for the County of Santa Cruz Department of
General Services. 2008.

James and Grant. 2005.

Lifecycle Assessment of Compostable Plastic Bags. Centre for Design, Melbourne
Institute of Technology.

Laist, D.W. 1997.

*Impacts of marine debris: entanglement of marine life in marine debris including a
comprehensive list of species with entanglement and ingestion records.* In Marine
Debris :sources, impacts and solutions (eds J.M. Coe & B.D. Rogers), pp.99-141.
Berlin, Germany: Springer.

McClure, Nick. 1996.

The Biodegradation of Mater-Bi Starch-Based Polymer in Freshwater and Seawater.
Project Report. December 1996.

Mohee et al. 2006.

Determining biodegradability of plastic materials under controlled and natural
composting environments.

NOAA 2010.

National Oceanic and Atmospheric Administration, MBNMS color map including
bathymetry and hillshade. <http://montereybay.noaa.gov/intro/maps.html#elkhorn>.

Office of Attorney General 2008.

California Department of Justice, Office of the Attorney General. The California
Environmental Quality Act Addressing Global Warming Impacts at the Local Agency
Level. Sacramento, California, May 21, 2008.

Ocean Conservancy. 2009.

International Coastal Cleanup Day: The International Coastal Cleanup Marine Debris
Index. Available at: http://www.oceanconservancy.org/site/PageServer?pagename=icc_report.

Proctor, Charles. 2007.

Compostable bags no solution for L.A. area. Los Angeles Times April 10, 2007.

SWRCB 2010.

State Water Resources Control Board. 2010. Website: "Preproduction Plastic Debris Program." Available at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/plasticdebris.shtml.

StopWaste 2010

Comments provided to Green Cities California on Draft Master Environmental Assessment on Single-use and Reusable Bags.

Ruiz, Frank. 2007.

A New Class of High-Performance Compostable Plastic Bags and Can Liners. *Journal of Plastic Film and Sheeting* 2007(23):109.

U.S. EPA 1996.

"Approval and Promulgation of Implementation Plans and Redesignation of Puget Sound, Washington for Air Quality Planning Purposes: Ozone." In *Federal Register*, 61 (188), September 26, 1996.

U.S. EPA 2000

Facts About Landfill Gas, prepared by the U.S. Environmental Protection Agency. January 2000.

U.S. EPA 2005

Characterization of Municipal Solid Waste, Table 7, as reported by the County of Los Angeles (2007). The Life Cycle Assessment Analysis conducted by Boustead Associates (2007) assumes a 5.2 percent rate of recycling for plastic bags, based on 2005 EPA data.

U.S. EPA 2008

Municipal Solid Waste in the United States, 2007 Facts and Figures. November 2008.

U.S. EPA 2010.

Greenhouse Gas Emissions. Available at:
<http://www.epa.gov/climatechange/emissions/index.html>

Weise, Barry J.D. 2010.

Personal communication with Barry Weise, J.D., Legislative & Regulatory Analyst for the District of Columbia Department of the Environment, by the City of San Jose. June 2, 2010.

VI. ATTACHMENTS

1. County of Santa Cruz Board Letter dated, April 1, 2010 to *Consider Proposed Addition of Chapter 5.48 to the Santa Cruz County Code Regarding Reducing the Consumption of Single-use Plastic Bags within the County.*
2. Estimated Daily Single-use Bag Demand for the Unincorporated County of Santa Cruz, October 2010. Prepared by the County of Santa Cruz Planning Department.

ATTACHMENT 1

SINGLE-USE BAG REDUCTON ORDINANCE

**ORDINANCE ADDING CHAPTER 5.48 TO SANTA CRUZ COUNTY CODE
RELATING TO THE REDUCTION OF SINGLE-USE PLASTIC AND PAPER
CARRYOUT BAGS**

ORDINANCE NO. _____

**ORDINANCE ADDING CHAPTER 5.48 TO SANTA CRUZ COUNTY CODE
RELATING TO THE REDUCTION OF SINGLE USE PLASTIC AND PAPER
CARRYOUT BAGS**

The Board of Supervisors of the County of Santa Cruz ordains as follows:

SECTION I

Chapter 5.48 of the Santa Cruz County Code is enacted to read as follows:

SINGLE-USE BAG REDUCTION ORDINANCE

Sections:

- 5.48.010 Purpose and Findings.**
- 5.48.015 Definitions.**
- 5.48.020 Ban on Plastic Carryout Bags and Store Charge for Other Single-Use Carryout Bags.**
- 5.48.025 Implementation.**
- 5.48.030 Exemptions Allowing Single Use Bags.**
- 5.48.035 Enforcement.**
- 5.48.040 Violations.**
- 5.48.045 Severability.**
- 5.48.050 Effective Date.**
- 5.48.055 No Conflict with Federal or State Law.**
- 5.48.060 Preemption.**
- 5.48.010 PURPOSE AND FINDINGS.**

A. It is the intent of the County of Santa Cruz, in enacting Chapter 5.48 to eliminate the common use of plastic single-use carryout bags, encourage the use of reusable bags by consumers and retailers, and to reduce the consumption of single-use bags in general.

B. Whereas the County of Santa Cruz has an obligation to protect the environment, the economy and public health, and the County of Santa Cruz has a 75 percent waste reduction goal by 2010, which is to be reached by waste reduction, reuse, recycling, and composting, the County of Santa Cruz makes the following findings:

1. Globally, and estimated 500 billion to 1 trillion petroleum-based plastic bags are used each year, which equals over one million per minute, the production and use of which uses over 12 million barrels of oil. The California Integrated Waste Management Board estimates that Californians use nearly 20 billion single-use plastic bags per year and discard over 100 plastic bags per second. Further, the Environmental Protection Agency estimates that only 5 percent of the plastic bags in California and nationwide are currently recycled.

2. The production and disposal of plastic bags have caused significant environmental impacts, including contamination of the environment, the deaths of thousands of marine animals through ingestion and entanglement, widespread litter and debasement of the urban environment, and increased waste disposal costs.
3. Most plastic carryout bags do not biodegrade, but instead persist in the environment for hundreds of years. Rather than breaking down, they slowly break up through abrasion, tearing, and photo degradation into toxic plastic bits that contaminate soil and water, while entering the food web when animals inadvertently ingest these materials. Toxic substances present in plastics are known to cause death or reproductive failure in fish, shellfish, wildlife, and in the humans ingesting the fish.
4. Plastic bits absorb dangerous compounds such as dichlorodiphenyldichloroethylene (DDE), Polychlorinated Biphenyl (PCB), and other toxic materials present in ocean water. Plastics have been found to concentrate these toxic chemicals at levels of up to one million times the levels found in seawater. Plastic bits have displaced plankton in the Pacific Gyre.
5. The U.S. Marine Mammal Commission estimates that 257 marine species have been reported entangled in or having ingested marine debris. Plastic can constrict the animals' movements or block their digestive system, killing the animals through starvation, exhaustion, or infection from deep wounds caused by tightening material.
6. According to Save Our Shores, a Santa Cruz based marine conservation nonprofit that conducts beach, river, and inland cleanups in the coastal regions of Santa Cruz, San Mateo, and Monterey County; from June 2007 to March 2010 they conducted 395 cleanups where volunteers removed a total of 19,080 plastic bags. Unchecked, this material would have likely entered the marine environment of the Monterey Bay National Marine Sanctuary.
7. Plastic bags returned to supermarkets may be recycled into plastic lumber; however, a very low percentage of bags are actually returned. Recycling bags into lumber does not reduce the impact of making new plastic carryout bags.
8. Compostable plastic carryout bags, are currently manufactured, do not solve the problems of wildlife damage, litter, or resource use addressed by the proposed ordinance. Compostable carryout are designed to remain intact until placed in a professional compost facility, so they do not degrade quickly as litter or in a marine

environment. Producing compostable bags consumes nearly as much fossil fuel as non-compostable bags. Mixing compostable bags with regular plastic bags prevents recycling or composting either of them. Therefore, there is no exemption in the proposed ordinance for compostable carryout bags.

9. According to Californians Against Waste, Californians pay up to \$200 per household each year in state and federal taxes to clean up litter and waste associated with single-use bags, on top of the \$40 per household per year in hidden grocery costs to offset the expense to nearly 1,000 "free" bags received from grocers.
10. Reusable bags are readily available from numerous sources and vendors. Many grocery and other retail establishments throughout the County of Santa Cruz already offer reusable bags for sale at a price as low as 25 cents.
11. The proposed ordinance recognizes that there are energy and environmental consequences of using paper bags. While paper bags do not have the end of use impacts of plastic bags, they may use comparable or more energy and resources to manufacture. For this reason, a store charge on paper bags is indicated, as an incentive to reduce their use and encourage reusable bags. Paper bags that contain a minimum of 40% post consumer recycled content have fewer negative impacts than virgin paper bags.
12. Paper shopping bags with 40% post consumer recycled content are easily available, and such bags are widely used by County of Santa Cruz merchants.
13. State law currently prohibits local jurisdictions from charging for single-use carryout plastic bags. Therefore, several California Cities have adopted or are pursuing a ban as the most effective remaining means to eliminate the impacts these plastic bags cause. State law does not prohibit jurisdictions from charging for paper bags.

5.48.015 DEFINITIONS.

A. For the purposes of this Chapter, the following definitions apply:

1. "Carryout bags" means bags provided by retailers to customers at the point of sale to hold customers' purchases. "Carryout bags" do not include bags used to contain loose items prior to checkout, such as meat, produce and bulk goods, and does not include prepackaged products.
2. "Single-use plastic bag" or "single-use plastic carryout bag" means a single-use carryout bag of any size that is made from plastic and

provided at point of sale to customers by a retail establishment and is not reusable. Single-use plastic carryout bags include both compostable and non-compostable carryout bags.

3. "Single-use paper bag" means a checkout bag provided by a retail establishment at the point of sale that is made from paper and is not a reusable bag.
4. "Recyclable" means material that can be sorted, cleansed, and reconstituted using the County's available recycling collection programs for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating, converting, or otherwise thermally destroying solid waste.
5. "Reusable bag" means any bag with handles that is specifically designed and manufactured for multiple reuse, and is either: 1) made of cloth or other washable fabric, 2) made of durable material that is at least 2.25 mils thick and is specifically designed to carry a minimum of 22 pounds for at least 125 times over a distance of 175 feet (A "reusable bag" may be made of plastic), 3) Have printed on the bag, or on a tag attached to the bag that is not intended to be removed, and in a manner visible to the consumer the following information: (A) The name of the manufacturer, (B) The location (country) where the bag was manufactured, (C) A recycling symbol or end-of-life management instructions, and (D) The percentage of postconsumer recycled material, if any; and 4) It shall not contain lead, cadmium, or any other heavy metal in toxic amounts.
6. "Retail establishment" or "retail store" means all sales outlets, stores, shops, restaurants, vehicles or other places of business located within the County of Santa Cruz which operate primarily to sell or convey goods, including "to go" food, directly to the ultimate consumer.
7. "Exempted uses" means those point-of-purchase or delivery sales, which have received an exemption, under Section 5.48.030 that allows the use of single-use bags.
8. "Prepared food" means foods or beverages which are prepared on vendor's premises by cooking, chopping, slicing, mixing, freezing or squeezing, and which require no further preparation to be consumed. "Prepared food" does not include any raw uncooked meat product or fruits or vegetables, which are not chopped, squeezed, or mixed.
9. "Take-out food" means prepared food or beverages requiring no further preparation to be consumed, and which are generally

purchased in order to be consumed off restaurant or retail food vendor's premises.

5.48.020 BAN ON PLASTIC CARRYOUT BAGS AND STORE CHARGE FOR OTHER SINGLE-USE CARRYOUT BAGS.

- A. No retail establishment shall provide single-use plastic carryout bags to customers at the point of sale, except as permitted in Section 5.48.030 of this chapter.
- B. Single-use paper carryout bags provided to customers shall contain a minimum of 40 percent post consumer recycled paper fiber, and be recyclable in the County of Santa Cruz's curbside recycling program. In addition, all retail stores subject to this ordinance shall provide independent certification (e.g., Forest Stewardship Council; Rainforest Alliance) that paper carryout bags being distributed originate from 40 percent post-consumer recycled fiber. Proof of certification shall be provided once annually to the Director of Public Works, or designee.
- C. During the period of time starting on the date that this chapter takes effect and continuing for one year thereafter, retail establishments shall charge 10-cents for each single-use paper checkout bag provided to customers at the point of sale. At the completion of the initial one-year period established by this subdivision, the charge shall increase to 25 cents per bag provided. There shall be a rebuttal presumption that this amount shall not be less than 10 cents for the first year and 25 cents thereafter. A store may charge a lesser amount if it submits a full accounting to the Director of Public Works, signed by a responsible manager under penalty of perjury, that identifies all costs including bag purchase, shipping handling and storage, showing a lesser actual cost to the store for each bag. Any such accounting shall expire one year from the date of original submission and must be resubmitted. Retail establishments shall keep annual records of paper bag distribution to be made available to the Director of Public Works, or designee upon request. The records shall be evaluated annually for the first five years by the County to ensure the effectiveness of the ordinance. If it is determined that single-use paper bag use has increased beyond anticipated levels, the Board of Supervisors shall consider increasing the minimum store charge to improve the effectiveness of the ordinance.
- D. The store charge imposed pursuant to this section shall not apply to customers participating in the California Special Supplemental Food Program for Women, Infants, and Children, the State Department of Social Services Food Stamp program, or other government-subsidized purchase programs for low-income residents.
- E. The ban on single-use plastic bags and the store charge on single-use paper bags would not apply to plastic or paper bags used to protect produce, meat, or otherwise used to protect items as they are put into a carryout bag at checkout. Other examples include: paper bags to

protect bottles, plastic bags around ice cream or other wet items, paper bags used to weigh candy, pharmacy bags or bags to protect greeting cards.

- F. Retail establishments are strongly encouraged to make reusable bags available for sale to customers at a reasonable price.
- G. Retail establishments shall indicate on the customer transaction receipt the number of paper carryout bags provided, and the total amount charged for those bags.
- H. County of Santa Cruz contractors and special events promoters, and their vendors, shall not provide plastic carryout bags to participants while performing under a County of Santa Cruz contract or permit.
- I. Notwithstanding the store charge in Section 5.48.020(C) on single-use paper carryout bags, single-use paper carryout bags may be distributed by food vendors for the transportation of prepared take-out food intended for consumption off the food vendor's premises without a store charge.

5.48.025 IMPLEMENTATION

- A. Sixty days before this ordinance takes effect, the County of Santa Cruz shall mail or deliver a copy of it to every retail establishment within the unincorporated County of Santa Cruz.
- B. The County of Santa Cruz will distribute to each store a reproducible placard designed to inform shoppers of the County of Santa Cruz policy for carryout bags.

5.48.030 EXEMPTIONS ALLOWING SINGLE-USE PLASTIC CARRYOUT BAGS

- A. The Director of Public Works, or the Director's designee, may exempt a retail establishment from the requirement set forth in Section 5.48.020(A) of this chapter for a one-year period upon the retail establishment showing, in writing, that this chapter would create an undue hardship or practical difficulty not generally applicable to other persons in similar circumstances. The decision to grant or deny an exemption shall be in writing, and the Director's or the designee's decision shall be final.
- B. An exemption application shall include all information necessary for the Director of Public Works or the designee to make a decision, including but not limited to documentation showing factual support for the claimed exemption. The Director or the Director's designee may require the applicant to provide additional information.
- C. The Director of Public Works or designee may approve the exemption application in whole or in part, with or without conditions.

5.48.035 ENFORCEMENT

Enforcement of this ordinance shall be as follows:

- A. The Director of Public Works, or designee, shall have primary responsibility for enforcement of this ordinance and shall have authority to issue citations for violation of this chapter. The director, or designee, is authorized to establish regulations or administrative procedures to ensure compliance with this chapter.
- B. A person or entity violating or failing to comply with any of the requirements of this chapter shall be guilty of an infraction.
- C. The County of Santa Cruz may seek legal, injunctive, or any other relief to enforce the provisions of this chapter and any regulation or administrative procedure authorized by it.
- D. The remedies and penalties provided in this chapter are cumulative and not exclusive of one another.
- E. The Director of Public Works, or designee, may inspect any retail establishment's premises to verify compliance with this ordinance.

5.48.040 VIOLATIONS

Violations of this ordinance shall be enforced as follows:

- A. Violation of this chapter is hereby declared to be a public nuisance. Any violation described in the preceding paragraph shall be subject to abatement by the County of Santa Cruz, as well as any other remedies that may be permitted by law for public nuisances, and may be enforced by injunction upon a showing of violation.
- B. Upon a first violation by a retail establishment, the Director of Public Works, or designee, shall mail a written warning to the retail establishment. The warning shall recite the violation, and advise that future violations may result in fines.
- C. Upon a second or subsequent violation by a retail establishment, the following penalties will apply:
 - 1. A fine not exceeding one hundred dollars (\$100) for the first violation that occurs 30 days or more after the first warning.
 - 2. A fine not exceeding two hundred dollars (\$200) for the second violation that occurs 60 or more days after the first warning.
- D. Special Events promoters and their vendors who violate this ordinance in connection with commercial or noncommercial special events shall be assessed fines as follows:
 - 1. A fine not exceeding two hundred dollars (\$200) for an event of 1 to 200 persons.
 - 2. A fine not exceeding four hundred dollars (\$400) for an event of 201 to 400 persons.
 - 3. A fine not exceeding six hundred dollars (\$600) for an event of 401 to 600 persons.

4. A fine not exceeding one thousand dollars (\$1,000) for an event of 601 or more persons.

E. Remedies and fines under this Section are cumulative.

5.48.45 SEVERABILITY.

If any word, phrase, sentence, part, section, subsection, or other portion of this chapter, or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such work, phrase, sentence part, section, subsection, or other portion, or the proscribed application thereof, shall be severable, and the remaining provisions of this chapter, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The County of Santa Cruz hereby declares that it would have passed this title, and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases had been declared invalid or unconstitutional.

5.48.50 EFFECTIVE DATE

This ordinance shall become effective six (6) months after the date of final passage by the County of Santa Cruz Board of Supervisors.

5.48.55 NO CONFLICT WITH FEDERAL OR STATE LAW.

Nothing in this ordinance shall be interpreted or applied so as to create any requirement, power or duty in conflict with any federal or state law.

5.48.60 PREEMPTION.

The provisions of this chapter shall be null and void if state or federal legislation, or administrative regulation, takes effect with the same or substantially similar provisions as contained in this chapter. The Board of Supervisors shall determine whether or not identical or substantially similar statewide legislation has been enacted or regulations issued.

SECTION II

This ordinance shall take effect and be in force six months from the date of adoption.

PASSED AND ADOPTED this _____ day of, _____ 2010, by the Board of Supervisors of the County of Santa Cruz by the following vote:

AYES: SUPERVISORS
NOES: SUPERVISORS

ABSENT: SUPERVISORS
ABSTAIN: SUPERVISORS

Chair of the Board of Supervisors

ATTEST: _____
Clerk of the Board

Approved as to form:

Office of County Counsel

DISTRIBUTION:

California Public Interest Group
Clerk of the Board
County Administrative Office
County Counsel
County Environmental Health Services
Public Works, Solid Waste Division
Each City Manager
Save Our Shores of Santa Cruz
Integrated Waste Management Local Task Force
Santa Cruz Area Chamber of Commerce
Santa Cruz Area Restaurant Association
Unincorporated Area Chambers of Commerce

ATTACHMENT 2

Estimated Daily Single-use Bag Demand for the Unincorporated County of Santa Cruz, October 2010

Methodology

The County of Santa Cruz Planning Department contracted with InfoUSA.com to conduct a database search to determine who, and how many retail establishments currently exist in the unincorporated County. InfoUSA.com's databases include 210 million U.S. consumers, 14 million U.S. businesses, 13 million executives and professionals. A total of 672 potential businesses were identified based on the search criteria entered into their system. The search parameters included identification by zip codes, and by Standard Industrial Classification (SIC) Codes and Ranges. The zip codes and SIC Codes search are provided below. The results were provided to the County Planning Department in an Excel spreadsheet format. The spreadsheet was closely evaluated for accuracy and modified further to eliminate defunct or non-applicable businesses and/or to add new businesses that were not included in the database. Google Maps were reviewed in an effort to include other missing businesses that were not included in the database search. Ultimately, a conservative total of 485 businesses that may be affected by the proposed ordinance were identified. Each business identified was assigned a value for paper or plastic bag use on a per day basis. It was assumed for the purposes of this study that no reusable bags are in used in the unincorporated County due to lack of data. These assigned values are subjective and very conservative. A daily total of 32,800 paper bags were identified for the unincorporated County of Santa Cruz, compared to 137,675 plastic bags used daily. These two numbers were then multiplied by "a conservative" 365 days to determine the total annual paper and plastic bag use. Using the annual bag use numbers for both paper and plastic calculates out to a annual per capita use of 465 bags for the unincorporated County of Santa Cruz. The statewide average annual bag use per person is roughly 552. Please see the attached Excel spreadsheet for a list of businesses and their estimated single-use bag use.

InfoUSA.com database Search Criteria

Dear Customer,
Attached is your Market Research Report.
Report Name: Bag Ordinance 1 (this has been saved in your account).
Number of leads: 672

Tally by ZIP Code

City	State	ZIP Code	Number of Leads
Aptos	CA	95001	5
Aptos	CA	95003	185
Ben Lomond	CA	95005	42
Boulder Creek	CA	95006	58
Brookdale	CA	95007	2
Corralitos	CA	95076	3
Davenport	CA	95017	11
Felton	CA	95018	61
Freedom	CA	95019	64
La Selva Beach	CA	95076	5
Los Gatos	CA	95033	31
MT Hermon	CA	95041	1
Royal Oaks	CA	95076	46
Soquel	CA	95073	158
Total			672

Selection Criteria

SIC Codes and Ranges: General Merchandise Stores (53)
SIC Codes and Ranges: Food Stores (54)
SIC Codes and Ranges: Apparel & Accessory Stores (56)
SIC Codes and Ranges: Home Furniture & Furnishings Stores (57)
SIC Codes and Ranges: Eating & Drinking Places (58)
SIC Codes and Ranges: Gasoline Service Stations (5541)
SIC Codes and Ranges: Lumber & Other Building Materials (5211)
SIC Codes and Ranges: Paint Glass & Wallpaper Stores (5231)
SIC Codes and Ranges: Hardware Stores (5251)
SIC Codes and Ranges: Retail Nurseries & Lawn Supply Stores (5261)
SIC Codes and Ranges: Auto & Home Supply Stores (5531)
SIC Codes and Ranges: Department Stores (5311)
SIC Codes and Ranges: Variety Stores (5331)
SIC Codes and Ranges: Misc General Merchandise Stores (5399)
SIC Codes and Ranges: Grocery Stores (5411)
SIC Codes and Ranges: Meat & Fish Markets (5421)
SIC Codes and Ranges: Fruit & Vegetable Markets (5431)
SIC Codes and Ranges: Candy Nut & Confectionery Stores (5441)
SIC Codes and Ranges: Dairy Products Stores (5451)
SIC Codes and Ranges: Retail Bakeries (5461)
SIC Codes and Ranges: Miscellaneous Food Stores (5499)
SIC Codes and Ranges: Mens & Boys Clothing Stores (5611)
SIC Codes and Ranges: Womens Clothing Stores (5621)
SIC Codes and Ranges: Womens Accessory & Specialty Stores (5632)
SIC Codes and Ranges: Childrens & Infants Wear Stores (5641)
SIC Codes and Ranges: Family Clothing Stores (5651)
SIC Codes and Ranges: Shoe Stores (5661)
SIC Codes and Ranges: Misc Apparel & Accessory Stores (5699)
SIC Codes and Ranges: Furniture Stores (5712)
SIC Codes and Ranges: Floor Covering Stores (5713)
SIC Codes and Ranges: Drapery Curtain & Upholstery Stores (5714)
SIC Codes and Ranges: Miscellaneous Homefurnishings Stores (5719)
SIC Codes and Ranges: Household Appliance Stores (5722)
SIC Codes and Ranges: Radio Tv & Electronics Stores (5731)
SIC Codes and Ranges: Computer & Computer Software Stores (5734)
SIC Codes and Ranges: Record & Prerecorded Tape Stores (5735)
SIC Codes and Ranges: Musical Instrument Stores (5736)
SIC Codes and Ranges: Eating Places (5812)
SIC Codes and Ranges: Drinking Places (5813)
SIC Codes and Ranges: Drug Stores & Proprietary Stores (5912)
SIC Codes and Ranges: Liquor Stores (5921)
SIC Codes and Ranges: Used Merchandise Stores (5932)
SIC Codes and Ranges: Sporting Goods & Bicycle Shops (5941)
SIC Codes and Ranges: Book Stores (5942)
SIC Codes and Ranges: Stationery Stores (5943)
SIC Codes and Ranges: Jewelry Stores (5944)
SIC Codes and Ranges: Hobby Toy & Game Shops (5945)
SIC Codes and Ranges: Camera & Photographic Supply Stores (5946)
SIC Codes and Ranges: Gift Novelty & Souvenir Shops (5947)
SIC Codes and Ranges: Luggage & Leather Goods Stores (5948)
SIC Codes and Ranges: Sewing Needlework & Piece Goods (5949)
SIC Codes and Ranges: Florists (5992)
SIC Codes and Ranges: Tobacco Stores & Stands (5993)
SIC Codes and Ranges: News Dealers & Newsstands (5994)
SIC Codes and Ranges: Optical Goods Stores (5995)
SIC Codes and Ranges: Miscellaneous Retail Stores Nec (5999)
ZIP Code: 95001
ZIP Code: 95005
ZIP Code: 95007
ZIP Code: 95018
ZIP Code: 95033
ZIP Code: 95003
ZIP Code: 95006
ZIP Code: 95017
ZIP Code: 95019

ZIP Code: 95041
ZIP Code: 95073
ZIP Code: 95076
Omit City: Watsonville, CA
Omit City: Santa Cruz, CA
Omit City: Capitola, CA
Omit City: Scotts Valley, CA

Report request ID: 91833a89-7b7d-df11-9c52-005056bf65df
Report job ID: 92833a89-7b7d-df11-9c52-005056bf65df

List of Businesses and Their Estimated Daily Single-use Bag Demand

**Prepared by
The County of Santa Cruz Planning Department**

October 2010