

4.4 HYDROLOGY and WATER QUALITY

This section analyzes the proposed Single-Use Carryout Bag Ordinance's potential to adversely affect hydrology and water quality.

4.4.1 Setting

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

a. Surface Water Drainage and Carryout Bags. Huntington Beach is located within the Santa Ana River Basin (SARB), a 2,800 square mile area located roughly between Los Angeles and San Diego. The SARB is a group of connected inland basins and open coastal basins drained by surface streams flowing generally southwestward to the Pacific Ocean. The Santa Ana River Watershed is the largest in Orange County, covering 153.2 square miles. The river begins almost 75 miles away in the San Bernardino Mountains, crossing central Orange County before emptying into the Pacific Ocean.

There are three major watersheds encompassing the City of Huntington Beach: Talbert/Greenville Banning Channel Watershed, Westminster Watershed, and the Lower Santa Ana River Watershed. The receiving waters in Huntington Beach include the Pacific Ocean, Huntington Harbor, Anaheim Bay, Bolsa Chica Wetlands, Huntington Beach Wetlands, Huntington Lake, Talbert Lake, Sully Miller Lake, Greer Park Lake, Blackbird Pond, as well as flood control channels. These receiving waters support numerous beneficial uses for people and wildlife. The beneficial uses include marine habitat; water contact recreation; non-contact water recreation; wildlife habitat; commercial and sport fishing; shellfish harvesting; rare, threatened or endangered species; spawning, reproduction, and development; and estuarine habitat (Huntington Beach General Plan Environmental Resources/Conservation Element, 1996).

Urban runoff consists of both dry and wet weather runoff that may flow untreated from the City's developed urban areas into gutters, storm drains, and ultimately into receiving waters. Runoff comes from streets, parking lots, residential areas, commercial and industrial businesses, and private yards.

Carryout bags that enter the storm drain system may affect storm water flow by clogging drains and redirecting flow. As described in Section 4.2, *Biological Resources*, typical single-use plastic bags weigh approximately five to nine grams and are made of thin (less than 2.25 mils thick) high density polyethylene (HDPE) (Hyder Consulting, 2007). Post-use from a retail store, a customer may reuse a single-use plastic bag at home, but eventually the bags are disposed in the landfill or recycling facility or discarded as litter. Although some recycling facilities handle plastic bags, most reject them because they get caught in the machinery and cause malfunctioning, or are contaminated after use. Only about 5% of the plastic bags in California and nationwide are currently recycled (Green Cities California MEA, 2010; and Boustead, 2007).



The majority of single-use plastic bags end up as litter or in the landfill. Even those collected by recycling and solid waste trucks and handled at transfer stations and landfills may blow away as litter due to their light weight (Green Cities California MEA, 2010). Single-Use plastic bags that become litter can enter storm drains and may clog catch basins or be transported to the local watershed, the Huntington Harbor, Anaheim Bay, or the Pacific Ocean.

Single-Use paper grocery bags also have the potential to enter the storm drains as litter. However, as described in Section 4.2, *Biological Resources*, because of the weight, biodegradability of the materials, and recyclability, single-use paper bags are less likely to become litter compared to single-use plastic bags (Green Cities California MEA, 2010). In addition, because single-use paper bags are not as resistant to breakdown, there is less potential to clog catch basins compared to single-use plastic bags. Thus, although single-use paper bag litter may enter storm drains and affect hydrologic flow of surface water runoff, the potential to enter storm drains and cause hydrologic affects is less than with single-use plastic bags.

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

b. Water Quality and Carryout Bags. The City of Huntington Beach conducts an extensive water quality monitoring program as required by and to document compliance with all applicable State and Federal requirements. Water quality testing programs are carried out by the Orange County Water District (OCWD) for groundwater, the Metropolitan Water District of Southern California (MWDSC) for treated surface water, the Huntington Beach Public Works Utilities Division for water production and distribution systems, and Orange County Watersheds for water quality in channels.

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

While single-use plastic bags are more likely to affect water quality as a result of litter, the manufacturing process utilizes “pre-production plastic,” which may degrade water quality if released either directly to a surface water body or indirectly through storm water runoff. Single-Use paper carryout bags have less litter-related effect on water quality than single-use plastic bags; however, the manufacturing process for paper bags may utilize various chemicals



and materials and may also require the use of fertilizers, pesticides and other chemicals for production of resources (such as pulp). This may increase the potential for higher natural concentrations of trace metals, biodegradable wastes (which affect dissolved oxygen levels), and excessive major nutrients such as nitrogen and phosphorus if discharged into water bodies, either directly or indirectly through storm water runoff. If released into the environment, these potential pollutants can degrade water quality in local water bodies.

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

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

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

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

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



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

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

Local Regulatory Setting. The Santa Ana Regional Water Quality Control Board (RWQCB) Region 8 has jurisdiction over the Santa Ana River Basin. The Santa Ana RWQCB (SARWQCB) is required, by law, to develop, adopt, and implement a Basin Plan for the entire region. The principal elements of the Basin Plan are a statement of beneficial water uses that the SARWQCB will protect; water quality objectives needed to protect the designated beneficial water uses; and, strategies and time schedules for achieving the water quality objectives. The water quality objectives are achieved primarily through the establishment and enforcement of waste discharge requirements (WDRs). Both beneficial uses and water quality objectives comprise the relevant water quality standards.

Stormwater discharges from the City are also currently regulated under the fourth-term regional individual permit – Santa Ana Region Waste Discharge Requirements for the County of Orange, Orange County Flood Control District, and The Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Stormwater Runoff Orange County (Order No. R8-2009-0030, NPDES No. CAS618030) (Municipal NPDES Permit). The permittees of this Municipal NPDES Permit are responsible for the management of storm drain systems within their jurisdictions and are required to implement management programs, monitoring programs, implementation plans and all best management practices (BMPs) outlined in the Drainage Area Master Plan (DAMP) within each respective jurisdiction, and take any other actions as may be necessary to meet the Maximum Extent Practicable (MEP) standard. The Municipal NPDES Permit differs from the Construction General NPDES Permit in that it regulates stormwater runoff from sites and activities following construction, as opposed to during construction activities.

The purpose of the Orange County Drainage Area Management Plan (DAMP) is to satisfy Municipal NPDES Permit conditions for creating and implementing an Urban Runoff Management Plan (URMP) to reduce pollutant discharges to the maximum extent practicable (MEP) for protection of receiving waterbody water quality and support of designated beneficial uses. The DAMP contains guidance on both structural and nonstructural BMPs for meeting these goals. The current specific water pollution control program elements are documented in



the DAMP and the corresponding City of Huntington Beach Municipal NPDES Permit Local Implementation Plan of 2011 (City of Huntington Beach LIP). The City has developed the City of Huntington Beach LIP using the DAMP as its basis. The City of Huntington Beach LIP provides a written account of activities that the City has undertaken, or is undertaking, to meet the requirements of the fourth-term NPDES Permit. As with the DAMP, the City of Huntington Beach LIP proposes a wide range of continuing and enhanced BMPs and control techniques that will be implemented and reported as part of the fourth-term Permit reports. The DAMP will be modified to comply with the fourth-term Municipal NPDES Permit.

The Citywide Urban Runoff Management Plan (CURMP) provides a broad framework for managing the quantity and quality of all urban runoff that reaches receiving waters from the land surfaces and through the storm drain system within the City. The Water Quality Element of the CURMP focuses primarily on managing runoff quality, while the Drainage Element addresses flood hazards and inconveniences. The CURMP identifies potential common solutions that can address both water quality and quantity concerns.

4.4.2 Impact Analysis

a. Methodology and Significance Thresholds. The proposed Ordinance would create a significant hydrology or water quality impact if it would:

1. *Violate any water quality standards or waste discharge requirements*
2. *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?)*
3. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?*
4. *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 or surface runoff in a manner which would result in flooding on or off-site?*
5. *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*
6. *Otherwise substantially degrade water quality?*
7. *Place housing 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?*
8. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*
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?*
10. *Inundation by seiche, tsunami, or mudflow?*
11. *Potentially impact stormwater runoff from construction activities?*
12. *Potentially impact stormwater runoff from post-construction activities?*
13. *Result in a potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste*



handling, hazardous materials handling or storage, delivery areas, loading docks or other outdoor work areas?

14. *Result in the potential for discharge of stormwater to affect the beneficial uses of the receiving waters?*

The Initial Study (see Appendix A) concluded that only the first, fifth, sixth, thirteenth and fourteenth criteria could potentially result in a significant impact, while the proposed Single-Use Carryout Bag Ordinance would result in no impact with respect to the other criteria. Hence, only the first, fifth, sixth, thirteenth and fourteenth criteria are addressed in this section.

b. Project Impacts and Mitigation Measures.

Impact HWQ-1 Although the proposed Single-Use Carryout Bag Ordinance would incrementally increase the number of single-use paper and reusable bags used in Huntington Beach, the overall reduction in the total amount of carryout bags would incrementally reduce the amount of litter and waste entering storm drains, water ways and receiving waters such as the Pacific Ocean, improving water quality. This would be a Class IV, *beneficial*, effect.

As a result of the proposed Ordinance, existing plastic bags used in Huntington Beach (102.2 million annually) would be replaced by an estimated 46 million single-use paper bags and one million reusable bags; an estimated five million single-use plastic bags would remain in circulation (refer to Table 4.1-4 in Section 4.1, *Air Quality*). This represents a 95% reduction in single-use plastic bags and a 49% reduction in all types of carryout bags (including plastic, single-use paper, and reusable).

Each type of carryout bag's potential to become litter is based on the bag's weight, material and quantity of bags used within Huntington Beach. As described in Impact BIO-1 in Section 4.2, *Biological Resources*, the majority of single-use plastic bags end up as litter or in the landfill. Even those collected by recycling and solid waste trucks and handled at transfer stations and landfills may blow away as litter due to their light weight (Green Cities California MEA, 2010). Single-use plastic bags that become litter may enter storm drains from surface water runoff or may be blown directly into local waterways by the wind. Single-use plastic bag litter that enters the storm drain system can block or clog drains resulting in contamination (Green Cities California MEA, 2010). Based on the statewide data that currently almost 20 billion plastic grocery bags (or approximately 533 bags per person) are consumed annually in California (Green Cities California MEA, 2010), retail customers in Huntington Beach currently use an estimated 102,198,343 plastic bags per year.

Similarly, single-use paper grocery bags also have the potential to enter storm drains and local waterways as litter. However, as described in Impact BIO-1 in Section 4.2, *Biological Resources*, due to the weight, biodegradability of the materials, and recyclability, single-use paper bags are less likely to become litter compared to single-use plastic bags (Green Cities California MEA, 2010). In addition, because single-use paper bags are not as resistant to breakdown, it would be less likely for single-use paper bags to block or clog drains compared to single-use plastic bags and they would therefore be less likely to result in storm drain blockage or contamination



compared to single-use plastic bags.

Due to the weight and sturdiness of reusable bags made for multiple uses, reusable bags are less likely to be littered or carried from landfills by wind as litter compared to both single-use plastic and paper bags (Green Cities California MEA, 2010). Reusable bags are less likely to become litter compared to single-use plastic and paper carryout bags. Therefore, shifting toward greater use of reusable bags would not degrade water quality compared to existing conditions as a result of litter, nor would it increase the potential for storm drain blockage.

As described in Section 4.1, *Air Quality*, and Section 4.3, *Greenhouse Gas Emissions*, the proposed Ordinance is anticipated to reduce the overall amount of carryout bags used in Huntington Beach per year by approximately 50.1 million bags. Therefore, the proposed Single-Use Carryout Bag Ordinance would reduce the amount of litter associated with single-use plastic carryout bags. Consequently, water quality would benefit from the proposed Single-Use Carryout Bag Ordinance, which would be expected to reduce the amount of litter that could enter storm drains and local waterways as well as the receiving waters such as the Pacific Ocean, thus improving water quality and reducing the potential for storm drain blockage.

Mitigation Measures. Water quality and storm drains would benefit from the proposed Single-Use Carryout Bag Ordinance because the proposed Ordinance would be expected to incrementally reduce the amount of litter that enters the storm drain system and local waterways and the Pacific Ocean. Therefore, mitigation is not required.

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

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

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



environment, these pollutant materials from the processing activities for carryout bags could degrade water quality.

The intent of the proposed Single-Use Carryout Bag Ordinance is to reduce the amount of single-use carryout bags and promote the use of reusable bags by Huntington Beach retail customers. The Ordinance is anticipated to reduce single-use plastic bags in Huntington Beach by 95% and reduce the use of all types of bags (including plastic, single-use paper, and reusable) by 49%. These shifts in the types and amounts of carryout bags used could potentially alter processing activities related to bag production. The manufacturing impacts of each bag type and the anticipated changes in use are described below.

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

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

Single-Use Paper Bags. The majority of single-use paper bags are made from Kraft paper bags, which are manufactured from a pulp that is produced by digesting a material into its fibrous constituents via chemical and/or mechanical means. Kraft pulp is produced by chemical separation of cellulose from lignin. Chemicals used in this process include caustic sodas, sodium hydroxide, sodium sulfide, and chlorine compounds (Green Cities California MEA, 2010). Processed and then dried and shaped into large rolls, the paper is then printed, formed into bags, baled, and then distributed to grocery stores. Although it does not directly discharge pollutants, the paper bag manufacturing process may utilize fertilizers, pesticides and other chemicals in the production of resources such as pulp. These pollutants may increase the potential for higher concentrations of trace metals, biodegradable wastes (which affect dissolved oxygen levels), and excessive major nutrients such as nitrogen and phosphorus,



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

Single-use paper bag manufacturers are required to comply with the local plans and policies of the SWRCB and the RWQCB, which regulate discharges to surface and groundwater, regulate waste disposal sites, and require clean up of discharges of hazardous materials and other pollutants. For example, in the City of Huntington Beach, single-use paper bag manufacturers would be required to adhere to the Huntington Beach Citywide Urban Runoff Management Plan (CURMP) and other applicable requirements. It should be noted, however, there are no known single-use bag manufacturers in the City of Huntington Beach or Orange County.

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

As with other types of carryout bags, reusable bag manufacturers would not be allowed to directly discharge pollutants into waters of the United States, except in accordance with the NPDES program established in Section 402 of the CWA. Reusable bag manufacturers may be required to obtain an “Individual” NPDES Permit and/or would need to adhere to an existing “General” NPDES Permit of the local area. An Individual NPDES permit regulates and limits the particular discharge at the manufacturing facility. The permit limits are based on the type of activity, nature of discharge and receiving water quality. Manufacturing facilities would need to apply for and obtain a permit prior to the start of manufacturing operations. In addition, as part of the Individual Permit, a manufacturing facility would be required to monitor and report its discharges to the local Regional Water Quality Control Board to demonstrate that the facility’s discharges are not in violation of any water quality standards.



Manufacturing facilities would also be required to adhere to existing General Permits that specify local discharge requirements for municipal storm water and urban runoff discharges. For example, in the City of Huntington Beach, single-use paper bag manufacturers would be required to adhere to the Huntington Beach Citywide Urban Runoff Management Plan (CURMP).

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

Anticipated Changes in Bag Use. Based on a cost requirement of \$0.10 per bag, as outlined in Section 4.1, *Air Quality*, it is assumed in this analysis that the total volume of plastic bags currently used in Huntington Beach (approximately 102,198,343 plastic bags per year) would be replaced by approximately 45% paper bags and 50% reusable bags as a result of the Single-Use Carryout Bag Ordinance. It is assumed that 5% of the existing total of single-use plastic bags used in Huntington Beach would remain in use since the Ordinance does not apply to some retailers who distribute plastic bags (e.g. restaurants) and these retailers would continue to distribute plastic bags after the Ordinance is implemented. Even though the volume of a single paper carryout bag (20.48 liters) is generally equal to approximately 150% of the volume of a plastic bag (14 liters¹), for this analysis it is conservatively assumed that 45,989,254 plastic bags (45% of those currently used) would be replaced by the same number of paper bags. It is estimated that the remaining 45,989,254 plastic bags eliminated by the Ordinance would be replaced by 982,676 reusable bags annually (refer to Table 4.1-4 in Section 4.1, *Air Quality*).

Although the proposed Ordinance would be expected to incrementally increase the manufacturing of single-use paper bags and reusable bags for use in Huntington Beach, it would also eliminate approximately 97.08 million single-use plastic bags per year. With implementation of the proposed Ordinance, approximately 52 million carryout bags (including single-use paper, single-use plastic, and reusable bags) would be manufactured for use in Huntington Beach – a decrease of 49% compared to existing conditions. Because the proposed Ordinance would reduce the overall number of carryout bags manufactured, it would reduce the overall impacts to water quality associated with bag manufacturing. Furthermore, any existing or potential manufacturing facilities would be required to adhere to existing federal, state and local regulations which are intended to protect water quality, as described above. Therefore, impacts to water quality related to the potential change of processing activities as a

¹ *The Ordinances to Ban Plastic Carryout Bags in Los Angeles County Final Environmental Impact Report (SCH #2009111104). Adopted by the County of Los Angeles Board of Supervisors on November 16, 2010.*



result of the proposed Huntington Beach Single-Use Carryout Bag Ordinance would not be significant.

Mitigation Measures. Because the impact would not be significant, mitigation is not required.

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

c. Cumulative Impacts. Adopted and pending carryout bag ordinances, as described in Table 3-1 in Section 3.0, *Environmental Setting*, would continue to reduce the amount of single-use carryout bags, and promote a shift toward reusable carryout bags. As discussed above, the hydrology and water quality impacts associated with the proposed Huntington Beach Single-Use Carryout Bag Ordinance are not considered significant and are generally considered beneficial. At least six other agencies in southern California region (County of Los Angeles and the cities of Long Beach, Los Angeles, Malibu, Manhattan Beach, and Santa Monica) have either adopted or are considering such ordinances. These ordinances would be expected to result in similar reductions in the amount of litter entering storm drains, local creeks or watersheds, thereby improving water quality. In addition, the overall reduction in bag manufacturing expected to occur as a result of implementation of these ordinances would be expected to generally reduce water quality impacts associated with bag manufacturing. In addition, all single-use paper and reusable bag manufacturing facilities would be required to comply with applicable regulatory requirements pertaining to preservation of water quality, including AB 258 and the California Health and Safety Code, as discussed in Impact HWQ-2. For these reasons, cumulative significant impacts associated with implementation of carryout bag ordinances throughout the state are not anticipated.

