INITIAL STUDY CHECKLIST

1. Project Title/Project number: Polystyrene Ordinance.

2. Lead agency name and address: City of San Diego, Planning Department, 9485 Aero Drive, MS 413, San Diego, California 92123-1801.

3. Contact person and phone number: Tara Ash-Reynolds, Junior Planner, (619) 533-6492.

4. Project location: The project is a Citywide ordinance covering the City of San Diego.

5. Project Applicant/Sponsor's name and address: Lisa Wood, Principal Planner, City of San Diego, Environmental Services Department, MS 1102A, San Diego, CA 92123, (858) 573-1236.

6. General Plan designation: NA.

7. Zoning: NA.

8. Description of project (Describe the whole action involved, including but not limited to, later phases of the project, and any secondary, support, or off-site features necessary for its implementation.): CITY COUNCIL APPROVAL to enact an ordinance restricting the use of polystyrene products.

   The City is proposing an ordinance that would amend the San Diego Municipal Code (SDMC) to restrict the use of polystyrene products throughout the City. The proposed ordinance includes a ban of the distribution of egg cartons, food service ware, or food trays that are made, in whole or in part, from polystyrene foam. Items that are made, in whole or in part, from polystyrene foam that is not wholly encapsulated or encased within a non-polystyrene foam material (e.g., coolers, ice chests, or similar containers; pool or beach toys; or dock floats, mooring buoys, or anchor or navigation markers) will also be banned from distribution. Products that are made, in whole or in part, from polystyrene foam will be banned from distribution in or at facilities within the City. The proposed ordinance will allow the distribution of prepared food that is packaged in food service ware or that uses food trays made, in whole or in part, from polystyrene foam, if the prepared food is packaged outside of the City and is provided to the consumer as originally packaged. The proposed ordinance would limit the distribution of food service ware products such as, utensils and straws, for takeout orders of prepared food, and will only allow the provision of utensils upon the request of the person ordering the prepared food.

   The ordinance will also include a process for obtaining a waiver of the provisions regarding food service ware and food trays if the applicant or City official seeking the waiver demonstrates that adherence to the ordinance would result in the following: 1) a feasibility-based hardship; 2) a financial hardship; and/or 3) a violation of a contractual requirement.

   Polystyrene Characteristics: Polystyrene is one of the most widely used forms of plastic. Plastics, including polystyrene, are made by distilling hydrocarbons into lighter groups, which are then combined with catalysts to make plastic. Polystyrene is inexpensive and it can be formed, glued, sanded, cut, and painted. There are three major types of polystyrene: foam, plastic, and film. Polystyrene foam usually occurs in one of two forms, expanded polystyrene (EPS) foam and extruded polystyrene (XPS) foam, both of which are often referred to by the trademarked name Styrofoam. Food and beverage containers and packing peanuts are generally made from EPS foam, while XPS foam is a higher density foam, which is typically used in applications such as architectural

moldings[1]. According to a study conducted in 2004 by the State of California, 377,580 tons of polystyrene were produced that year in California[2].

Existing Polystyrene Use: This initial study estimates that 4.4 pounds of polystyrene per person per year is used, given that the national average ranges from 1.8 to 7 pounds per person per year[3,4]. The population of San Diego was estimated at 1,425,976 using the Quick Facts Website[5]. This initial study assumes that the number of City of San Diego residents that patronize retailers outside the City is comparable to customers of City retailers who reside outside of San Diego (i.e., visitors who live outside San Diego but travel to shop or eat within the City). Using these data, it is estimated that approximately 6,270,000 pounds of polystyrene are used per year in San Diego.

Anticipated Changes as a Result of the Proposed Ordinance: The overall goal for consumer behavior change is a shift away from single-use products altogether. This approach, referred to in the California Public Resources Code as "source reduction," was given a boost with enactment in 2019 of Assembly Bill 619. This law provides that consumer-owned containers may be used for food take-away purposes. To ensure safety, the food facility must isolate the consumer-owned containers from the serving surface or sanitize the serving surface after each filling. Although encouraged by City and allowed pursuant to AB (619), it is expected that the transition to re-usable containers will result in a reduction of less than five percent of the current use rate of take-out containers. Therefore, source reduction is not quantified for purposes of this analysis. Similarly, utensils and other polystyrene products covered by the ordinance that are not for food take-away purposes are also expected to be a relatively insignificant component of the expected change resulting from ordinance implementation.

It is anticipated that the proposed ordinance could result in an increase in the weight of products used by the public. Both plastic replacements and paper products are generally heavier than polystyrene. While each individual item is generally a lightweight item, when talking about the transport of many thousands of single use products, small increases in weight could have associated, indirect and/or cumulative impacts.

For the purposes of this analysis, to estimate the potential increase in weight, the data from Franklin Associates life cycle study of foam polystyrene was used[6]. According to the Franklin study, a polystyrene 32-ounce cold cups weighs 8.8 grams, whereas a low-density polyethylene (LDPE)-coated paperboard cup weighs 19.8 grams. Similarly, a polystyrene sandwich-sized clamshell weighs 4.8 grams, a paperboard clamshell weighs 10.2 grams, and a solid polylactic acid (biomass-derived alternative) clamshell weighs 23.3 grams. While these data can be used to estimate the increase that could result from a shift to paper, more common plastic replacements were not included in that study. GoCermaic Cup compared a paper cup and a plastic cup that weighed the same amount[7], but plastic alternatives vary widely in weight. Paper and plastic alternatives to polystyrene in these studies range from 1.0 to three times as heavy, with 2.4x representing a rough, conservative estimate of the weight of paper alternative, and 2.5x being a rough, conservative estimate of weight of the plastic alternative. As shown in Table 1, if 70 percent of

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[1] Creative Mechanisms, 2015. Everything You Need to Know about Polystyrene. https://www.creativemechanisms.com/blog/polystyrene-ps-plastic. Accessed May 2020.

[2] Clean Water Action California. April 21, 2009. Facts about Styrofoam Litter (Expanded Polystyrene Foam). http://www.cleanwateraction.org/files/publications/ca/Polystyrene_Litter_Fact_Sheet.pdf. Accessed May 2020.

[3] The Resin Review, 2012 Edition

[4] For the purpose of this initial study, it is assumed that all polystyrene is EPS foam because there are no other reasonable polystyrene (rigid or film) data available. This is a conservative approach because the basis of the analysis is in part weight-based and EPS foam is generally lighter than rigid polystyrene. Although EPS foam is not necessarily lighter than EPS film, EPS film is likely not widely used by food service providers in the City. Instead, it would be more likely that polystyrene film would be found on pre-packaged food items.

[5] Quick Facts. https://www.census.gov/quickfacts/fact/table/sandiegocitycalifornia/PST045218#PST045218. Accessed May 2020.

[6] Franklin Associates, A Division of ERG, 2011. Life Cycle Inventory of Foam Polystyrene, Paper-based, and PLA Foodservice Products. https://www.plasticfoodservicefacts.com/wp-content/uploads/2017/12/Peer_Reviewed_Foodservice_LCA_Study-2011.pdf. Accessed May 2020.

[7] GoCermaic Cup, 2018. https://gramcup.com/grams-a-cup-weighs-paper-plastic-ceramic-glass-cups/. Accessed May 2020.

the existing polystyrene use became paper products, and 30 percent became plastic alternative products, an increase of 8,966,100 pounds (4,483 tons) of material could occur.

TABLE 1: POTENTIAL INCREASED PRODUCT WEIGHT ASSOCIATED WITH ORDINANCE

	Existing Conditions	Proposed Ordinance		
Material Type	Polystyrene	Paper	Plastic	Total
Weight (lb)	6,270,000	10,533,600	4,702,500	15,236,100

Table assumes 70 percent of the baseline polystyrene use will be replaced by paper, 30 percent by plastic, and that paper alternatives are 2.4 times as heavy as polystyrene and plastic alternatives are 2.5 times as heavy as polystyrene.

9. Surrounding land uses and setting:

Geographical Setting: The City of San Diego is the largest (geographically and by population) of the 18 cities within the County of San Diego. It is located approximately 120 miles south of Los Angeles and adjacent to the border with Mexico. With an estimated population of more than 1.4 million, San Diego is the eighth-largest city in the United States and second-largest in California. The City is known for its mild year-round climate, deep-water harbor, extensive beaches, long association with the United States Navy, and recent emergence as a healthcare and biotechnology development center. The City is the seat of San Diego County and is the economic center of the region as well as the San Diego–Tijuana metropolitan area. San Diego's main economic engines are military and defense-related activities, tourism, international trade, and manufacturing. The presence of the University of California, San Diego (UCSD), with the affiliated UCSD Medical Center, has helped make the area a center of research in biotechnology.

Existing Polystyrene Disposal: The national average of polystyrene use ranges from 1.8 to 7 pounds per person per year. A waste characterization analysis completed in 2010 by the cities of Mountain View and Sunnyvale determined the per capita disposal rate of polystyrene materials to be 6.4 pounds per person per year, which is comparable with New York City's 2015 polystyrene disposal rate estimated to be 6.0 pounds per person per year[8]. In 1999, approximately 300,000 tons of EPS foam was landfilled in California, which represents approximately 0.8 percent of total waste and translates to a total disposal cost of $30 million per year[9]. Although the weight-based percentage is small, EPS foam is light, so it represents a larger percentage of the total waste stream by volume. Although the technology to recycle polystyrene exists, EPS foam food containers are rarely recycled because the items are not clean enough for recyclable processing and/or the recycled material is not profitable enough to sell to waste traders. Likewise, polystyrene is non-biodegradable.

Polystyrene food and beverage containers are odorless, lightweight, insulated, sturdy packages, but are intended for one-time use before disposal. Californians use approximately 165,000 tons of polystyrene each year for packaging and food service purposes; however, only 0.2 percent is recycled[10].

Polystyrene in Litter: Littered polystyrene food packaging clogs storm drains and pollutes beaches, which results in millions of dollars in clean-up costs[11]. Once littered, polystyrene entangles in brush, collects along roadways, blows into storm drains, and washes up on beaches. It breaks apart and is carried downstream into waterways,

[8] Resource Recycling. 2017. The Rise of EPS Ordinances. https://resource-recycling.com/recycling/2017/02/06/rise-eps-ordinances/. Accessed May 2020.
[9] Equinox Project. March 2017. Recommendations for Reducing or Banning Foam Food Service Containers: An Analysis of Economic and Environmental Impacts of Polystyrene Policies. https://energycenter.org/sites/default/files/Guide_for_Polystyrene_Reduction_Policies.pdf. Accessed May 2020.
[10] Gardner, Michael and Lee, Mike. December 1, 2008. State panel floats 'litter tax' to curb debris along coast. http://www.sandiegouniontribune.com/sdut-1n1oceans94953-state-panel-floats-litter-tax-curb--2008dec01-htmlstory.html. Accessed May 2020.
[11] Clean Water Action California. April 21, 2009. Facts about Styrofoam Litter (Expanded Polystyrene Foam). http://www.cleanwateraction.org/files/publications/ca/Polystyrene_Litter_Fact_Sheet.pdf. Accessed May 2020.

impacting the environment, including wildlife. EPS foam crumbles and can be difficult to collect. It is often a more visible source of litter compared to other littered materials. In addition to impacts on wildlife, littering impacts recreational areas and the quality of life for residents. One study of beach debris surveyed 43 sites along the Orange County coast. It found that EPS foam was the second most abundant form of beach debris[12]. Additionally, the 'Two Rivers' study in Los Angeles found that over 1.6 billion pieces of plastic foam were headed to the ocean over a three-day period during surveys in 2004/5. Likewise, the study determined that 71 percent of the 2.3 billion plastic items in the survey were foam items and that made up 11 percent of the overall weight of plastic pollution collected during the surveys[13]. In 2017, the Surfrider Foundation's San Diego Chapter removed 20,883 pieces of polystyrene foam from City beaches[14].

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.): None.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun? NA.

    Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

[12] Clean Water Action California. April 21, 2009. Facts about Styrofoam Litter (Expanded Polystyrene Foam). http://www.cleanwateraction.org/files/publications/ca/Polystyrene_Litter_Fact_Sheet.pdf. Accessed May 2020.
[13] C.J. Moore, G.L. Lattin and A.F. Zellers. Journal of Integrated Coastal Zone Management 11(1):65-73 (2011)
[14] Surfrider Foundation San Diego County. 2019. Victory! San Diego Passes Strong Plastics Reduction Ordinance. https://sandiego.surfrider.org/victory-san-diego-passes-strong-plastics-reduction-ordinance/. Accessed May 2020.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture and Forestry Resources	☐ Hazards & Hazardous Materials	☐ Recreation
☒ Air Quality	☐ Hydrology/Water Quality	☐ Transportation
☐ Biological Resources	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Cultural Resources	☐ Mineral Resources	☐ Utilities/Service Systems
☐ Energy	☐ Noise	☐ Wildfire
☐ Geology/Soils	☐ Population/Housing	
☒ Mandatory Findings of Significance		

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial evaluation:

☐ The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ 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 by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ The proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required.

☐ 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 (MITIGATED) NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or (MITIGATED) NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

I. AESTHETICS: Would the project:

a) Have a substantial adverse effect on a scenic vista? ☐ ☐ ☐ ☒

The project does not propose any construction, alternation of landform, or other modification to the land. It would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict applicable zoning and other regulations governing scenic quality. ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

II. AGRICULTURAL 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:

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Would the project:

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

Please see I(a). No construction is proposed. The project would have no impact on any applicable plan or on the local air quality.

b) 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? ☒ ☐ ☐ ☐

The proposed ordinance would not involve any physical development that would directly increase air quality emissions. However, implementation of the proposed ordinance would increase the use of polystyrene alternatives. The transportation of potentially heavier products to retailers in San Diego could contribute increased air emissions locally and regionally. As explained in section XVII, the anticipated change in consumer behavior could result in additional vehicles trips per year. The emissions associated with this potential increase warrants further investigation.

c) Expose sensitive receptors to substantial pollutant concentrations? ☐ ☐ ☐ ☒

Please see III(a). No manufacturing facilities are proposed. The project would have no impact on sensitive receptors in the region.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? ☐ ☐ ☐ ☒

Please see III(a). No manufacturing facilities are proposed. The project would have no impact substantial numbers of people.

IV. BIOLOGICAL RESOURCES: Would the project:

a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or ☐ ☐ ☐ ☒

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

V. CULTURAL RESOURCES: Would the project:

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

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

VI. ENERGY: Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒

Please see I(a). No manufacturing facilities construction or operation are proposed.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

As explained in VI(a), no construction and no facilities are proposed. The project would not conflict with any state or local plan for renewable energy or energy efficiency.

VII. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no geology impacts within the region. Greenhouse-gas-related geology and soils impacts may be associated with raw material production, such as the mining of petroleum products for polystyrene production. However, the greenhouse gas impacts associated with polystyrene source material production are a baseline condition, and impacts associated with alternative products are anticipated to be comparable or less.

ii) Strong seismic ground shaking?	☐	☐	☐	☒

Please see VI(a). No construction is proposed. The project would have no impact.

iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒

Please see VI(a). No construction is proposed. The project would have no impact.

iv) Landslides?	☐	☐	☐	☒

Please see VI(a). No construction is proposed. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒

Please see VI(a). No construction is proposed. The project would have no impact.

c) 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?	☐	☐	☐	☒

Please see VI(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

VIII. GREENHOUSE GAS EMISSIONS: Would the project:

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

The City of San Diego, as of July 2016, uses the Climate Action Plan Consistency Checklist (Checklist) to provide a streamlined review process for projects that are subject to discretionary review and trigger environmental review pursuant to CEQA. The first step in determining CAP consistency is to assess a project's consistency with the land use assumptions used in the CAP. Specifically, in Step 1, the proposed projects must be determined to be consistent with the existing General Plan and Community Plan land use and zoning designations. The proposed ordinance does not entail construction activities or changes to the physical or built environment, therefore the project would be consistent with the City's General Plan land use and zoning designations. Step 2 of the Checklist evaluates a project's consistency with the applicable strategies and actions of the CAP. However, Step 2

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

only applies to development projects that involve permits that would require a certificate of occupancy. The project would not require a certificate of occupancy since no construction activities are proposed. Thus, by the checklist approach, the project would have no impacts. However, the checklist approach does not include a life-cycle analysis.

The primary sources of GHG emissions include: transportation; energy consumption associated with both electricity purchased from utilities and on-site combustion of natural gas, propane or other fuels used in buildings or other facilities; emissions associated with solid waste management, including decomposition at existing landfills; wastewater management including both emissions and energy use; water-related category emissions from energy usage for the conveyance, treatment and distribution of water; agricultural emissions, including manure and enteric fermentation in livestock, application of fertilizers, and equipment; and, emissions from specific industrial-sector or commercial activities. Emissions inventories are typically focused on activities that occur within a community's boundaries or nearby in the surrounding region, and for activities and sources over which the local agencies have jurisdictional control or substantial jurisdictional influence. Consistent with long-standing CEQA analysis practice, local government climate actions plans typically do not use consumption-based or life-cycle scopes of analysis for calculating GHG emissions because: 1) many emissions estimated in such analyses are outside of local jurisdictional control or substantial jurisdictional influence, and 2) such scopes of analysis result in double-counting of emissions in other California communities' inventories or in other jurisdictions' inventories elsewhere in the nation or the world. Many communities in California and across the world are already calculating and reducing emissions under other federal or international agreements or protocols, and thus the framework for emissions analysis in a CAP needs to recognize that a local agency is not responsible for reducing all consumption-based or life-cycle emissions. However, the proposed ordinance targets consumer behavior, and therefore a more comprehensive global consumption-based or life-cycle emissions analysis may be appropriate. Because the ordinance could result in a shift to products that are heavier, an increase in emissions associated with product transportation is possible, and further GHG analysis may be warranted.

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

Please see the first paragraph of VIII(a). It is anticipated that the proposed project would not conflict with any applicable plans, policies, or regulations related to greenhouse gases; specifically, the project is consistent with the City of San Diego Zero Waste Plan. The project would have no impact on any existing plan, policy, or regulation adopted for the purpose of reducing greenhouse gases.

IX. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

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

Expected use of polystyrene and alternative products does not include heating on a stove or in a microwave, or treatment other than the intended use. Heating or other treatment of polystyrene and alternative products could release hazardous materials, but this is not the intended use of the products. No hazards associated with product use, above and beyond the baseline conditions, are anticipated.

Neither polystyrene products nor the alternative products are considered hazardous materials. The transportation of these products does not pose a hazard. No transportation-related hazards are anticipated.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

Polystyrene is not a hazardous material and can be disposed of in a landfill, or, in some cases recycled, and does not require handling as a hazardous material. The same is true for the common replacement products. Therefore, no hazardous material disposal impacts are associated with the project.

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

Please see IX(a). The project would have no impact.

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

Please see IX(a). The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

e) 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? ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) 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?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

X. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☐	☒

The proposed ordinance would not involve physical development regulated by water quality standards or water quality or require the development of waste discharge requirements. Effects on manufacturing could pose an indirect effect, which is discussed below. Additionally, effects on littering could also pose an indirect effect, also discussed below. To facilitate the analysis in this initial study, a brief overview of existing conditions is also provided. Thus, the following answer provides three categories of discussion: Existing Conditions; Manufacturing (with a comparison of before-the-ordinance and after-the-ordinance impacts); and Littering (with a comparison of before-the-ordinance and after-the-ordinance impacts).

EXISTING CONDITIONS.

Surface Water. There are seven major watersheds located in the City of San Diego: San Dieguito, Los Peñasquitos, San Diego, Pueblo, Sweetwater, Otay, and Tijuana. Much of the City is urbanized with modifications to the natural hydrology, in the form of a stormwater conveyance system developed to direct stormwater into natural, man-made, or partially modified features in response to flood risks. This system of drainage is referred to as the Multiple Separate Storm Sewer System (MS4). It carries water from rain events within the City to drain into receiving waters such as rivers, reservoirs, or bays, and/or the Pacific Ocean. The City's existing storm drain system and flood control facilities generally have sufficient capacity to provide developed areas

with adequate protection from flooding. The major receiving waters for the system include the Pacific Ocean, San Diego Bay, Mission Bay, San Dieguito River, Los Peñasquitos Creek, San Diego River, Otay River, and Tijuana River. There are several major reservoirs within or managed by the City (Barrett, El Capitan, San Vincente, Hodges, Miramar, Murray, Lower Otay, Upper Otay, and Sutherland) in addition to minor receiving waters that consist of creeks, channels, streams, and lagoons.

Water quality can be greatly affected by pollution carried in contaminated surface runoff. Pollutants from unidentified sources are washed from streets, construction sites, parking lots, and other exposed surfaces into storm drains. Runoff may contain contaminants such as oil, grease, and other pollutants from vehicles; plant and animal debris (e.g. leaves, twigs, dust, and animal feces); pesticides; litter; and heavy metals. These pollutants have been found to adversely affect the aquatic habitats[15].

Groundwater. There are several groundwater basins underlying the region occupied by the City of San Diego (Peñasquitos, San Dieguito, San Diego, Pueblo San Diego, Sweetwater, Otay, and Tijuana basins)[16]. In 2018, the City started receiving an estimated 2,600 acre-feet per year (AFY) of desalinated groundwater from the Sweetwater Authority in addition to the 500 AFY from existing production wells in the San Diego River Valley Groundwater Basin[17]. These groundwater sources are a permanent addition to the City's diversified water supply, a majority of which (80 to 90 percent) is imported from Northern California and the Colorado River.

Manufacturing. There are two polystyrene manufacturers located in the City of San Diego and one distributor located in the City of Encinitas[18]. Additionally, there are paper mills and plastic and polystyrene manufacturers throughout the greater southern California region and in Mexico. Polystyrene food packaging products and likely alternatives are also manufactured and/or used elsewhere in California. Therefore, impacts to hydrology and water quality are not limited to the local watershed. 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 food packaging.

The proposed ordinance would result in a reduction in polystyrene products and is anticipated to result in an increase in the manufacture and use of plastic and paper substitute materials. There are currently fiber and plastic containers manufactured in the state and nationally and internationally. In discussing the expected effect of the ordinance in question 8, above, it is estimated that paper alternatives would comprise 70 percent of products used after ordinance implementation and 30 percent plastic products.

Impacts Associated with Plastic/Polystyrene. Most of the baseline impacts to hydrology and water quality associated with the manufacture of polystyrene are similar to impacts that are associated with potential replacement plastic products. These impacts occur when crude oil is mined and refined as raw materials for plastics manufacture. Both mining and refining processes are potential major contributors to ground water and surface water contamination. Extraction processes vary in potential impacts, with the drilling method of "fracking" best known for contaminating drinking water sources with chemicals that lead to cancer, birth defects, and liver damage. The controversial method injects a mixture of water and chemicals into rock formations to release oil and gas. As a result, it generates huge volumes of wastewater with dangerous chemicals that can leak into surface water and underground aquifers. Refineries are another potential source of contamination. Some refineries use deep-injection wells to dispose of wastewater generated inside the plants, and some of these wastes end up in aquifers. Wastewater in refineries may be highly contaminated given the number of sources it can come into contact with during the refinery process (such as equipment leaks and spills and the desalting of crude oil). This contaminated water may be process wastewaters from desalting, water from cooling towers, stormwater, or other wastewater source. It may contain oil residuals and other hazardous wastes. This water is recycled through many stages during the refining process and goes through several treatment processes, including a wastewater treatment plant, before being released into surface waters. The wastes discharged

[15] City of San Diego stormwater website. https://www.sandiego.gov/stormwater/about/background. Accessed May 2020.
[16] San Diego County. 2007. San Diego County Watersheds and Groundwater Basins. http://www.sdirwmp.org/pdf/sdirwm_groundwater_map.pdf. Accessed March 2020. Accessed May 2020.
[17] City of San Diego. 2020. Water Supply. https://www.sandiego.gov/public-utilities/sustainability/water-supply. Accessed May 2020.
[18] Thomas Register. 2020. Expanded Polystyrene (EPS) Foam Suppliers serving Southern California. https://www.thomasnet.com/southern-california/expanded-polystyrene-eps-foam-30682090-1.html. Accessed May 2020. Jarrett Industries – distributor, Encinitas; Flexy Foam & Packaging – manufacturer, San Diego; KB Foam, Inc – manufacturer, San Diego.

into surface waters are subject to state discharge regulations and are regulated under the Clean Water Act (CWA). These discharge guidelines limit the amounts of sulfides, ammonia, suspended solids and other compounds that may be present in the wastewater[19]. When plastics are manufactured from recycled plastic, the impacts associated with virgin materials mining are avoided.

Impacts Associated with Paper. The acquisition of raw material for the manufacture of paper alternatives is not associated with as much water contamination as is the acquisition of crude oil for plastic manufacture. While timber harvest does promote erosion[20], which contaminates surface water, many paper replacement products may be made from recycled paper, which is not associated with this impact. However, the manufacturing process of most paper products generates wastewater that includes nitrogen and phosphorus, which can cause eutrophication, and hydrogen sulfides and dioxins, which can cause toxicological effects on aquatic ecosystems if left untreated. Paper manufactured using recycled content generally results in reduced water quality impacts, compared to virgin materials. Paper manufacture in the United States is regulated under the National Pollution Discharge Elimination System under the Industrial Discharge Program[21]. Any manufacturing facility, including plastic and paper manufacturers, must comply with the applicable regulations at the point of release.

Comparison of Impacts. The transition to alternative products resulting from the ordinance is anticipated to be the same or slightly reduced compared to baseline conditions, and to be in compliance with regulations. Therefore, the ordinance would not result in impacts.

Litter. Litter has the potential to end up on streets, in stormwater systems, and in waterways. In addition to illegal disposal of trash, which is also known as litter, improper disposal of waste can be attributed to a lack of infrastructure to capture debris such as trash cans without lids, overfilled trashcans, public parks, recreational areas, and beaches. One of the primary sources of marine debris is urban runoff[22].

The City conducts activities to collect and cleanup litter including street sweeping, collecting trash from public trash containers, and organizing, publicizing, and facilitating local cleanups of waterways. These events are held throughout the year (e.g. street-sweeping and routing maintenance of parks/public trash collection) as well as on a single-day basis (e.g. clean up days and illegal dumping response). Across the state, municipalities spend approximately $428 million annually related to waterway and beach cleanups, street sweeping, stormwater capture devices, storm drain cleaning and maintenance, manual litter cleanup, and public anti-littering campaigns. Additionally, Caltrans estimates that it spends $52 million annually to clean up litter from roads and highways[23]. The City spent nearly $14 million on cleanup in 2012: approximately $342,000 for beach and waterway cleanup; $6.4 million for storm drain cleaning and maintenance; and $556,000 for stormwater capture devices[24].

[19] Environmental Impact of the Petroleum Industry, Update #12, June 2003. Published by the Hazardous Substance Centers/South & Southwest Outreach Program. https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.files/fileID/14522. Accessed May 2020.

[20] Johnny Boggs, Ge Sun, Steven McNulty. Effects of Timber Harvest on Water Quantity and Quality in Small Watersheds in the Piedmont of North Carolina. *Journal of Forestry*, Volume 114, Issue 1, January 2016, Pages 27–40. https://academic.oup.com/jof/article/114/1/27/4571804. Accessed May 2020.

[21] United States Environmental Protection Agency (U.S. EPA). 1990. Paper Industry. https://nepis.epa.gov/Exe/ZyNET.exe/10001AI8.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1986+Thru+1990&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C86thru90%5CTxt%5C00000004%5C10001AI8.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL#. Accessed May 2020.

[22] Midbust et al. Reducing Plastic Debris in the Los Angeles and San Gabriel River Watersheds. April 2014. http://www.bren.ucsb.edu/research/2014Group_Projects/documents/Bren-Group-Project-Thesis-Reducing-Plastic-Debris-in-the-Los-Angeles-and-San-Gabriel-Riv_000.pdf. Accessed May 2020.

[23] Midbust et al. Reducing Plastic Debris in the Los Angeles and San Gabriel River Watersheds. April 2014. http://www.bren.ucsb.edu/research/2014Group_Projects/documents/Bren-Group-Project-Thesis-Reducing-Plastic-Debris-in-the-Los-Angeles-and-San-Gabriel-Riv_000.pdf. Accessed May 2020.

[24] Kier Associates. 2012. The Cost to West Coast Communities of Dealing with Trash, Reducing Marine Debris. https://www.coastal.ca.gov/publiced/coordinators/WestCoastCommsCost-MngMarineDebris.pdf. Accessed May 2020.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

Polystyrene as Litter. Polystyrene products that enter the storm drain system as litter may affect stormwater flow by clogging drains and redirecting flow. After a single use, the containers are disposed of in a landfill or recycling facility, or alternatively intentionally or accidentally discarded as litter. Although some recycling facilities accept polystyrene food and beverage containers, most reject the material because it is contaminated after use and/or the recycled material is not profitable (there is a negative market value). Of the 377,580 tons of polystyrene produced in California in 2004, less than one percent was recycled[25]. Most polystyrene food and beverage containers end up in the landfill or as litter[26]. Even what is collected by recycling and solid waste trucks and handled at transfer stations and landfills may escape as litter because the light-weight material becomes airborne at low wind speeds. Single-use polystyrene containers that become litter can enter storm drains and may clog catch basins or be transported to the Pacific Ocean. This especially harmful because it is common for polystyrene to break down into small pieces that can pass through the five-millimeter mesh screens used to trap and hold debris. A study completed in Los Angeles County found that polystyrene comprised approximately 6-23 percent of plastic debris found in the Los Angeles and San Gabriel River Watersheds[27]. This is likely an underestimation because the study did not include foamed food containers unless the item was specifically labeled as polystyrene[28]. In 2017, the Surfrider Foundation's San Diego Chapter removed 20,883 pieces of polystyrene foam from City beaches[29]. In 2018, polystyrene waste materials accounted for 11.6 percent of the total waste materials collected during beach cleanup events held throughout the County[30].

Other Plastics as Litter. Similar to polystyrene, plastic food and beverage products have the potential to enter the storm drains as litter. Although potentially similar in weight to polystyrene containers, plastic containers are less likely to break apart and are therefore more apt to be removed during street sweeping or maintenance activities.

Paper as Litter. Paper food packaging also has the potential to enter the storm drains as litter. However, because of the potential weight and breakdown of paper, these food and beverage containers are less likely to become persistent litter compared to single-use polystyrene containers. In addition, because paper food containers are not as resistant to biodegradation, there is less potential for paper alternatives to clog catch basins compared to polystyrene food products. Although paper food and beverage product litter may enter storm drains and temporarily affect hydrologic flow of surface water runoff, the potential for paper products to result in long-term hydrologic effects is less than with polystyrene products.

Comparison of Impacts. A study conducted in the City of San Francisco measured EPS foam in litter after adoption of an ordinance restricting polystyrene use. The study included a street litter audit, with 132 sites studied from April 7 to 18, 2008. Litter was classified as "large" (more than four square inches) or "small" (less than four square inches). To understand the change in litter, a baseline audit was also completed prior to the adoption of the ordinance. In the first sample year after the ordinance was adopted, the relative composition of litter appeared to shift from EPS foam to the substitute container types. According to the study's findings, the ordinance changed the composition of urban litter, reducing the proportion comprised of polystyrene, but not the total amount of litter[31]. However, even if the ordinance does not reduce the amount of litter, reducing the

[25] Clean Water Action California. April 21, 2009. Facts about Styrofoam Litter (Expanded Polystyrene Foam). http://www.cleanwateraction.org/files/publications/ca/Polystyrene_Litter_Fact_Sheet.pdf. Accessed May 2020.
[26] Equinox Project. March 2017. Recommendations for Reducing or Banning Foam Food Service Containers: An Analysis of Economic and Environmental Impacts of Polystyrene Policies. https://energycenter.org/sites/default/files/Guide_for_Polystyrene_Reduction_Policies.pdf. Accessed May 2020.
[27] Midbust et al. Reducing Plastic Debris in the Los Angeles and San Gabriel River Watersheds. April 2014. http://www.bren.ucsb.edu/research/2014Group_Projects/documents/Bren-Group-Project-Thesis-Reducing-Plastic-Debris-in-the-Los-Angeles-and-San-Gabriel-Riv_000.pdf. Accessed May 2020.
[28] Midbust et al. Reducing Plastic Debris in the Los Angeles and San Gabriel River Watersheds. April 2014. http://www.bren.ucsb.edu/research/2014Group_Projects/documents/Bren-Group-Project-Thesis-Reducing-Plastic-Debris-in-the-Los-Angeles-and-San-Gabriel-Riv_000.pdf. Accessed May 2020.
[29] Surfrider Foundation San Diego County. 2019. Victory! San Diego Passes Strong Plastics Reduction Ordinance. https://sandiego.surfrider.org/victory-san-diego-passes-strong-plastics-reduction-ordinance/. Accessed May 2020.
[30] Surfrider Foundation San Diego County. 2018. San Diego County Beach Cleanup Data Report 2018. https://sandiego.surfrider.org/wp-content/uploads/2019/05/2018-Coastkeeper_Surfrider-BCU-Data-Analysis-Mitch-copy.pdf. Accessed May 2020.
[31] HDR, BVA Inc. and MGM Management. July 4, 2008. The City of San Francisco Streets Litter Re-Audi 2008. https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/MRP/02-2012/Comments/Dart/Staff_Exhibits.pdf. Accessed May 2020.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

proportion of litter comprised of polystyrene would in itself be a benefit. Because polystyrene easily breaks down into smaller particles yet does not decompose, and then more easily blow around yet cannot be captured in screening devices or other maintenance methods, it is more difficult to control than alternatives. The conclusion of the report was that, while the overall volume of litter from food and beverage containers may be similar, the replacement materials are less likely to reach waterways. If paper materials do end up reaching waterways, they are likely to naturally biodegrade. The breakage of plastic alternatives into small, harmful pieces would be similar to that of polystyrene, but slower because polystyrene generally breaks into pieces sooner than other hard, non-foam plastic resin products.

The proposed ordinance would target litter reduction, but even if there is no substantial change in the number, volume, or weight of litter items or trash in waterways, the changed nature of the litter may be beneficial. Such a shift would not interfere with implementation of regional plans or programs including National Pollutant Discharge Elimination System (NPDES) municipal stormwater permits designed to protect beneficial uses and improve water quality. The proposed polystyrene ordinance would not violate water quality standards, waste discharge requirements, or otherwise substantially degrade water quality. Therefore, the project would not be anticipated to have any negative impacts.

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

Water use associated with product manufacture, such as water use associated with concrete used for most project development, is beyond the scope of CEQA analysis. In this case, the ordinance proposes no manufacture of products, and therefore entails no water consumption. However, the project requires a shift in products, therefore global groundwater issues associated with raw materials will be considered. As explained in Section X(a), crude oil extraction and refining for plastic/polystyrene manufacture is more strongly associated with groundwater use and contamination compared to the production of raw materials for paper manufacture. Because the specific manufacturing facilities that would be involved are not known, a precise comparison is not possible, but overall it is anticipated that the potential for ground water depletion would be similar with and without the proposed ordinance, and potentially less. It is anticipated that the project would have no impact.

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

Please see I(a). No construction is proposed. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or impeded or redirect flood flows?	☐	☐	☐	☒

Please see I(a). No construction is proposed. As explained in X(a), the effect on drainage systems is expected to be beneficial, shifting littered materials to a type that is easier to control. The project would have no negative impact.

f) In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

Please see I(a). No construction is proposed. During flood and other extreme events, more litter would be expected to be washed into waterways. However, as explained in X(a), the effect on drainage systems is expected to be beneficial. The project would have no negative impact.

g) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Please see I(a). No construction is proposed. As explained in X(a), the effect on groundwater is anticipated to be neutral or potentially beneficial, and the effect on drainage systems is expected to be beneficial, shifting littered materials to a type that is easier to control. The project would have no negative impact.

XI. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	☐	☐	☐	☒

Please see I(a). No construction, and no land uses, are proposed. There would be no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Please see I(a). No construction is proposed. There would be no impact.

XII. MINERAL RESOURCES: Would the project:

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

Please see I(a). No construction and no manufacture or use of mineral raw materials is proposed. The project would have no impact. The project would have an effect on the consumption of materials, such as polystyrene, that are made from mineral materials, with potentially a very minor reduction in such consumption. The project is not anticipated to have any measurable impact on the global production of crude oil.

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

Please see I(a). No construction is proposed. The project would have no impact.

XIII. NOISE: Would the project result in:

a) Generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒

San Diego Municipal Code Section 59.5.0401 regulates noise by land use and time of day. The project is a Citywide ordinance that would regulate polystyrene use; no land use is proposed. Therefore, the project would normally be considered not to have any impact. However, polystyrene products are part of the commerce that occurs within the City, and thus are included in the existing traffic, which generates noise. As explained in section XVII, the distribution of polystyrene products within the City accounts for approximately 130 truck trips per year. Based on the potential change in consumption described in 8, above, the additional weight associated with alternatives products could result in a net increase of up to 187 truck trips per year. However,

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

these trips would not be confined to any one area. Thus, the resulting noise would be imperceptible. Therefore, the project would have no noise impacts.

b) Generate excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☐	☒

Please see XIII(a). The potential addition of up to 187 trucks per year across the entire City would not generate perceptible vibration or ground-borne noise. The project would have no impact.

c) For a project located in the vicinity of a private airstrip or 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?	☐	☐	☐	☒

Please see I(a). The project is a Citywide ordinance that would not include any construction, and it would not result in anyone residing or working near an airport. The project would have no impact.

XIV. POPULATION AND HOUSING: Would the project:

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

Please see I(a). No construction is proposed. The project would have no impact.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

XV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provisions 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 rations, response times or other performance objectives for any of the public services:

i) Fire Protection ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

ii) Police Protection ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

iii) Schools ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

iv) Parks ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

v) Other public facilities ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

XVI. RECREATION:

a) 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? ☐ ☐ ☐ ☒

Please see I(a). No construction is proposed. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) 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?	☐	☐	☐	☒

Please see I(a). No construction is proposed. The project would have no impact.

XVII. TRANSPORTATION/TRAFFIC: Would the project:

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

The City of San Diego participates in the San Diego Association of Government's (SANDAG) Regional Transportation Plan and Congestion Management Plan. The City's General Plan Mobility Element is part of SANDAG's long-range mobility plan[32]. The four components of the plan are Land Use, Demand Management, Systems Development, and Systems Management. The impact of the proposed ordinance on demand management is discussed below.

Assuming that food and beverage containers are transported via a standard 53-foot delivery truck, which have a maximum load capacity of approximately 48,000 pounds, approximately 130 annual truck trips (an average of about 0.36 trips per day) are needed under existing conditions to deliver the approximately 6,270,000 pounds (or 4,438 tons) of polystyrene used per year in San Diego, as explained in the description of the project, question 8, above. In question 8, paper was assumed to replace 70 percent of the existing polystyrene food ware products, and the rest (approximately 30 percent) would be replaced with ordinance-approved plastic food and beverage containers. Given the additional weight associated with the replacement products, approximately 187 truck trips would be needed per year to deliver 4,702,500 pounds of plastic and 10,533,600 pounds of paper products. This is a net increase of five truck trips per year compared to existing conditions. An increase of five truck trips annually would be negligible and would not conflict with any established programs, plans, ordinances, or policies. Therefore, the project would have a less than significant impact on implementation of existing City or SANDAG programs, plans, or policies pertaining to the City's circulation system.

[32]Mobility 2030. https://www.sandag.org/index.asp?classid=13&projectid=197&fuseaction=projects.detail. Accessed May 2020.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?	☐	☐	☒	☐

Please see XVII(a). The project may result in an increase of approximately five trips annually within the City. Section 15064.3 of the CEQA Guidelines allows each lead agency to determine its own methodology to evaluate a project's vehicle miles traveled. This particular project requires a unique methodology, since there is no specific land use generating the truck trips; instead, the trips would merely be existing trips, but with different materials on them, and potentially, if every trip had maximized loads, resulting in an increase in single digits in the number of actual vehicles somewhere within the City. Although this potential impact would not be zero, it would be several miles per trip, it would be an unmeasurable increase and would have a less than significant impact.

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

Please see I(a). The project would involve no facility that would generate vehicle miles or alter local traffic infrastructure. The project would have no impact.

d) Result in inadequate emergency access?	☐	☐	☐	☒

Please see I(a). The project would involve no facility that would generate vehicle miles or impede local emergency access. The project would have no impact.

XVIII. TRIBAL CULTURAL RESOURCES:

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒

Please see I(a). The project does not propose any construction, alternation of landform, or other modification to the land. The project would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Please see I(a). No construction or disturbance to land that could impacts such resources is proposed. The project would have no impact.

XIV. UTILITIES AND SERVICE SYSTEMS: Would the project:

a) Require or result in the relocation construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

The project is a Citywide ordinance restricting the use of polystyrene. No construction or other modification to the physical and built environments is proposed. The project would not create new residences, businesses, or infrastructure that would induce population growth, relocation, or require new or expanded water, wastewater treatment or utilities. Therefore, the project would have no impact on water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒

Studies from the European plastics industry show that the production of plastic resins ranges in water use (not including cooling) from 3,378 grams of water per kilogram of high-density polyethylene (HDPE) to 4,828 grams of water per kilogram of

polyethyleneterephthalate (PET)[33,34]. The production of one kilogram of polystyrene resin requires approximately 6,000 grams (13 pounds, or 8.4 pounds) of water[35]. Using these data, production of substitute plastic products uses 33 to 53 percent less water than production of polystyrene. Likewise, less water is used to manufacture paper replacements when compared to manufacturing polystyrene. However, it is anticipated that the project will increase the weight of products used. As shown in Table 2, it is anticipated that the project would result in an increase in the weight of alternative products, which would result in an increase in water use of up to 18 percent during manufacturing; however, existing manufacturing facilities are expected to have sufficient water supplies.

TABLE 2: POTENTIAL WATER USE ASSOCIATED WITH ORDINANCE

Material Type	Amount Estimated (pounds)	Water Use (gallons/pound)	Total Water Use (gallons)
Polystyrene	6,270,000	20.54	$1.3x10^8$
Paper	10,533,600	12.38	$1.3x10^8$
Alternative Plastic	4,702,500	5.12	$2.4x10^7$

Further, implementation of the project would not create new residences, businesses, infrastructure, or any new water consuming facility that would induce population growth and demand for water. The potential modifications to the materials use, as described in question 8, above, would result in a significant increase in paper product use. Paper is not washable, and thus would reduce water consumption associated with washing a polystyrene or plastic product. With implementation of the ordinance, overall the quantity of washable product would be reduced, and thus the amount of water for washing would also be reduced. Therefore, the project would have no impact on local water supplies.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

The potential modifications to the materials use, as described in question 8, above, would result in a significant increase in paper product use. Paper is not washable, and thus would not generate wastewater from San Diego residences that might otherwise be washing a polystyrene or plastic product. With implementation of the ordinance, overall the quantity of washable product would be reduced, and thus the amount of wastewater from washing would also be reduced. There would be no negative impact on the City's wastewater systems.

[33] PlasticsEurope: Association of Plastics Manufacturers. November 2008a. Environmental Product Declarations of the European Plastics Manufacturers. High density polyethylene (HDPE). https://www.academia.edu/6913217/Environmental_Product_Declarations_of_the_European_Plastics_Manufacturers. Accessed May 2020.

[34] PlasticsEurope: Association of Plastics Manufacturers. November 2008b. Environmental Product Declarations of the European Plastics Manufacturers. Polyethyleneterephthalate (PET): Bottle grade. http://uni-obuda.hu/users/grollerg/LCA/italcsomagolas/20100312112214-FINAL_EPD_PET.pdf.. Accessed May 2020.

[35] PlasticsEurope: Association of Plastics Manufacturers. March 2005. Eco-Profiles of European Plastics Industry: Polystyrene (Expandable) (EPS). http://www.inference.org.uk/sustainable/LCA/elcd/external_docs/eps_31116f05-fabd-11da-974d-0800200c9a66.pdf. Accessed May 2020.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste management or waste reduction goals?	☐	☐	☒	☐

Because the alternative products may be heavier than polystyrene, using data from WorldCentric, the proposed ordinance could result in an increase of approximately 570 percent in the amount of solid waste disposed as a result of manufacturing, as shown in Table 3. It is expected that existing facilities would be used for this shift in manufacturing and that the existing facilities would be consistent with local planning and would not have an impact on goal attainment. Additionally, as shown in Table 3, the additional weight of the alternative materials (8,966,100 pounds) could require local landfilling[36].

TABLE 3: POTENTIAL INCREASE IN SOLID WASTE PRODUCTION

Material Type	Amount Estimated (pounds)	Manufacturing Waste Rate (pounds of waste per pound of product)	Total Manufacturing Waste (pounds)	Total Waste (pounds)
Polystyrene	6,270,000	0.113	708,510	6,978,510
Paper	10,533,600	2.33	24,543,288	35,076,888
Alternative Plastic	4,702,500	0.029	136,372.5	4,838,872.5

However, it is anticipated that the recycling and/or composting rate of the alternatives will be significantly higher than for polystyrene, and at least a small amount of source reduction (estimated to be less than five percent) would occur. Additionally, consistent with planning for the Zero Waste Plan, which is a component of the City's enforceable Climate Action Plan, moving to more recyclable and/or compostable options is necessary. Promoting recyclability and recycled content in consumer products is a primary motivation for ordinance enactment and is expected to facilitate plan achievement. A significant proportion of the plastic and paper alternatives (estimated, consistent with the Zero Waste Plan projections, to be approximately 75 percent) is anticipated to be recycled or composted. Attainment of the recycling target would not be possible with continued use of polystyrene; therefore, the project would assist with compliance with State solid waste management goals and mandates. Therefore, the project would have a less than significant impact on solid waste management.

e) Comply with federal, state, and local management and reduction statutes and regulation related to solid waste?	☐	☐	☐	☒

As explained above in answer XIV(d), replacement of polystyrene with more recyclable options would be consistent with the primary goals of state laws such as Assembly Bill (AB) 939 and AB 341, which aim to increase waste diversion by means of source reduction, recycling, and composting, with even a small concession made to some transformation processes. The City currently exceeds AB 939 requirements of solid waste diversion[37] and is close to meeting AB 341 requirements of diverting 75 percent of solid waste by December 31, 2020. The project would result in a shift to more easily diverted products; therefore, it would facilitate compliance with solid waste regulations. The ordinance would have no negative impact on solid waste management.

[36] WorldCentric. 2013. Energy Savings. http://www.worldcentric.org/sustainability/energy-savings.
[37] The City currently has a diversion rate of 66 percent. https://www.sandiego.gov/environmental-services/miramar

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

XV. WILDFIRE: Would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? ☐ ☐ ☐ ☒

As explained in I(a), there are no proposed construction activities, or other modification to the physical or built environment. Implementation of the proposed ordinance would not impair the execution of emergency response or evacuation plans and would have no impact.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? ☐ ☐ ☐ ☒

As explained in I(a), there are no proposed construction activities, or other modification to the physical or built environment. Implementation of the proposed ordinance would not produce any buildings or occupants and associated fire hazards. The ordinance would have no impact.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? ☐ ☐ ☐ ☒

As explained in I(a), there are no proposed construction activities, or other modification to the physical or built environment. Implementation of the proposed ordinance would not produce any buildings that would require fire breaks, water sources, or public utilities. The ordinance would have no impact.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? ☐ ☐ ☐ ☒

As explained in I(a), there are no proposed construction activities, or other modification to the physical or built environment. Implementation of the proposed ordinance would not produce any buildings or alter any drainage or runoff patterns, nor promote ground instability. The ordinance would have no impact.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒

No construction or ground disturbing activities, or other modification to the physical or built environment are proposed. Implementation of the proposed ordinance is anticipated to reduce polystyrene litter in the urban area and in habitat areas and waterways, potentially reducing harm associated with this type of litter. The project would have no impact on historic, archaeological, cultural, or tribal cultural resources because no construction or ground disturbing activities are proposed. Therefore, the project would have no impacts on wildlife habitat, wildlife species, or historic resources.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable futures projects)?	☒	☐	☐	☐

The project proposes no physical alteration to the environment, and therefore would typically not be considered to have any cumulatively significant impacts. Cumulative impact analyses typically look at the physical effects of a project together with anticipated similar developments in the same region. However, in the case of this project, the scale is broadened within the category of air quality and greenhouse gas impacts, because the scale at which such impacts occur may be global. Thus, although no development impacts would occur within the region as a result of the project, the air quality and greenhouse gas life-cycle analysis are, in effect, potential cumulative impacts. Furthermore, several government agencies have imposed similar ordinances restricting the sale and distribution of polystyrene and single-use plastic products; in this aspect also, the project may have cumulative impacts. The project is therefore considered to have a potentially significant cumulative air quality and greenhouse gas impacts.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Implementation of the project would be expected to result in a shift in consumer behavior. However, alternative materials that are equally convenient would be allowed as replacement products, and the replacement products are anticipated to be more readily recyclable or compostable than polystyrene, and thus more compatible with waste reduction environmental goals. Product modification is not anticipated to have a long-term adverse impact on human beings. Therefore, the project would have no impact.

INITIAL STUDY CHECKLIST

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