4.10 WATER QUALITY

This section discusses Project-related impacts to water quality at John Wayne Airport ("JWA" or "the Airport"). The term "water quality" is used to denote issues of surface water pollution and associated regulations and practices to manage surface water quality.

The Project does not propose any construction or change to the nature of Airport operations. Therefore, the Project would not alter the existing drainage pattern or groundwater supplies; it would not subject structures or housing to a 100-year flood hazard; it would not result in exposure to flooding as a result of failure of a levee or dam; and it would not be subject to inundation by seiche, tsunami, or mudflow. These topics are not discussed in this section (refer to the Notice of Preparation ["NOP"]/Initial Study in Appendix A)).

4.10.1 REGULATORY SETTING

FEDERAL

Clean Water Act

In 1972, the Federal Water Pollution Control Act ("Clean Water Act") was amended to require National Pollutant Discharge Elimination System ("NPDES") permits for the discharge of pollutants to "Waters of the U.S."[1] from any point source.[2] Final regulations regarding storm water discharges were issued on November 16, 1990, and require that municipal separate storm sewer system ("MS4") discharges and industrial (including construction) storm water discharges to surface waters be regulated by an NPDES permit. MS4s are a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), and are owned or operated by a public body that has jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes. The MS4s are designated or used for collecting or conveying storm water only (i.e., not wastewater or combined sewage). NPDES permit requirements relevant to the Project are discussed later in this section.

Clean Water Act Section 303(d)

Water bodies not meeting water quality standards are deemed "impaired" and, under Clean Water Act Section 303(d), are placed on a list of impaired waters for which a total maximum daily load ("TMDL") must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (with a "factor of safety" included). Once established, the TMDL allocates the loads (or concentrations) among current and future pollutant sources to the water body.

According to the current (2010) Clean Water Act Section 303(d) list approved by the State Water Resources Control Board ("SWRCB"), receiving waters downstream of JWA (specifically Santa Ana Delhi Channel and Upper Newport Bay) are on the 303(d) list. Table 4.10-1 below

[1] "Waters of the U.S." include all waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide and all interstate waters, including interstate wetlands (33 *Code of Federal Regulations* 328.3).

[2] Point sources are discrete water conveyances, such as pipes or man-made ditches.

summarizes the pollutants affecting the water quality limited segments downstream of JWA, their TMDL requirement status, and potential pollutant sources, as provided on the current 303(d) list.

TABLE 4.10-1
SUMMARY OF 303(D) LIST FOR JWA RECEIVING WATER BODIES

Water Body	Pollutant	TMDL Requirement Status[a]	Potential Pollutant Sources (Where Identified)
Upper Newport Bay	Chlordane (Pesticide)	5A (2019)	N/A
	DDT (Pesticide)	5A (2019)	N/A
	Pesticides	5B	Agriculture; Unknown Nonpoint Source
	Copper	5A (2007)	N/A
	Metals	5A (2019)	Urban Runoff/Storm Sewers
	Nutrients	5B	N/A
	Polychlorinated biphenyls ("PCBs"; Other Organics)	5A (2019)	N/A
	Indicator Bacteria	5B	N/A
	Sediment Toxicity	5A (2019)	N/A
	Sedimentation/Siltation	5B	Land Development; Habitat Modification; Hydromodification; Agriculture
Santa Ana Delhi Channel	Indicator Bacteria	5A (2021)	N/A

TMDL: total maximum daily load; N/A- source is unknown; DDT: Dichlorodiphenyltrichloroethane; PCBs: Polychlorinated Biphenyls.

[a] 5A – TMDL required (expected completion date reported in 303[d] list in parentheses); 5B – pollutant being addressed by U.S. Environmental Protection Agency-approved TMDL.

Source: 2010 California 303(d) List of Water Quality Limited Segments, SWRCB 2011.

STATE/REGIONAL

California Porter-Cologne Act

California's Porter-Cologne Water Quality Control Act of 1970 ("Porter-Cologne Act") grants the SWRCB and the Regional Water Quality Control Boards ("RWQCBs") the power to protect surface water and groundwater quality and is the primary vehicle for implementing California's responsibilities under the Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies; to regulate discharges of waste to surface and groundwater; to regulate waste disposal sites; and to require cleanup of discharges of hazardous materials and other pollutants.

Each RWQCB must formulate and adopt a Water Quality Control Plan ("Basin Plan") for its region. The Basin Plan must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State Water Policy. The Basin Plan establishes beneficial uses for surface and groundwater in the region and sets forth narrative and numeric water quality standards to protect those beneficial uses.

The RWQCBs are also authorized to enforce discharge limitations; to take actions to prevent violations of these limitations from occurring; and to conduct investigations to determine the status of the quality of any of the waters of the state. Civil and criminal penalties are also applicable to persons who violate the requirements of the Porter-Cologne Act or any SWRCB/RWQCB orders.

California Toxics Rule

The Clean Water Act also requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the U.S Environmental Protection Agency ("USEPA"). Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with the water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations, levels of constituents, or narrative statements that represent the quality of water that supports a particular use. Because the State of California was unable to develop these standards for priority toxic pollutants, the USEPA promulgated the California Toxics Rule ("CTR") in 1992 (40 *Code of Federal Regulations* ["CFR"] 131.38), which fills this gap.

It is noted that the objectives of the Basin Plan prepared by each RWQCB under the Porter-Cologne Act and the CTR criteria do not apply directly to discharges of urban runoff, such as from JWA, but rather apply within the specified receiving waters. The NPDES permit requirements applicable to the Project are described below.

National Pollutant Discharge Elimination Program

As discussed above, the NPDES permit program is administered in the State of California by the RWQCBs. There are nine RWQCBs in the State of California. These boards have the mandate to develop and enforce water quality objectives and implementation plans within their regions. If discharges from industrial, municipal, and other facilities go directly to surface waters, those project applicants must obtain permits from the applicable RWQCB. An individual NPDES permit is specifically tailored to a facility. A general NPDES permit covers multiple facilities within a specific activity category such as construction activities. JWA is located within the jurisdiction of the Santa Ana RWQCB.

Industrial General Permit

The airside portion of JWA operates under the State's NPDES Permit for the Discharge of Storm Water Associated with Industrial Activities (Order No. 97-03-DWQ, "Industrial General Permit"), adopted by the SWRCB in 1997. Order 97-03-DWQ has expired but remains in effect until a new industrial general permit is adopted; the effort to develop and adopt a new permit was initiated by the SWRCB in 2003. As of the preparation of this EIR, the SWRCB had prepared and circulated the *Draft Industrial General Permit* for a public comment period that closed on March 4, 2014. Responses to comments were posted on March 28, 2014 and the SWRCB approved the permit on April 1, 2014. The new permit becomes effective on July 1, 2015. The new permit updates the documentation, monitoring and reporting requirements for covered uses.

The current Industrial General Permit does not establish effluent limitations. Rather, in order to comply with the requirements of the permit, it prohibits non-storm water discharges and

requires facilities to implement Best Management Practices ("BMPs"[3]) to reduce or prevent pollutants associated with industrial activity in storm water discharges. The BMPs implemented at JWA pursuant to the Industrial General Permit, until such time as a new Industrial General Permit is adopted, are discussed below under "Existing Conditions".

Municipal Storm Water Permitting

The landside (non-industrial) areas of the Airport are under the jurisdiction of Orange County's MS4 Permit. In 2002, the Santa Ana RWQCB issued NPDES Permit Order No. R8-2002-0010 for discharges of urban runoff from public storm drains in northern Orange County. The Permittees are the County of Orange, the Orange County Flood Control District, and the northern Orange County cities (collectively "the Co-Permittees"). To implement the requirements of the MS4 Permit, the Co-Permittees developed the 2003 Drainage Area Master Plan ("DAMP") that includes a Model New Development and Redevelopment Program. This Model Program provides a framework and a process for following the MS4 Permit requirements to incorporate watershed protection/storm water quality management principles into the Co-Permittees' General Plan process, environmental review process, and development permit approval process. A revised Orange County MS4 Permit was adopted on May 22, 2009 (Order No. R8-2009-0030, Amended by Order No. R8-2010-0062) and applies to ongoing activities at JWA.

COUNTY OF ORANGE

Local Implementation Plan

Per the requirements in the DAMP and the 2002 MS4 Permit, the County of Orange and the Orange County Flood Control District adopted a Local Implementation Plan ("LIP") containing the policy and implementation documents for compliance with the DAMP. Orange County revised its LIP in December 2010 to comply with the updated 2009 MS4 Permit. Section A-7 of the County's LIP contains the new development and redevelopment component based upon the Orange County Model Water Quality Management Plan. Because the Project would not include any development or redevelopment of physical facilities, implementation documents for the DAMP and the County's LIP are not applicable.

4.10.2 METHODOLOGY

The effects of the Project on surface water quality were assessed by comparing the existing operational parameters with those of the Proposed Project and each alternative. This was done by first establishing the existing conditions baseline for water quality parameters currently required in the existing JWA NPDES permit, then characterizing the potential change in surface water quality (i.e., increase, decrease, type of pollutants) due to implementation of the Proposed Project and each alternative; this change was assessed in light of the existing water quality management program in place at JWA.

[3] BMPs are defined as schedules of activities, prohibitions of practices, maintenance procedures or other management practices, treatment measures, operating procedures, and practices to control erosion, facility site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage. BMPs may include any type of pollution prevention and pollution control measures necessary to achieve compliance.

4.10.3 EXISTING CONDITIONS

Most of JWA is located on Newport Mesa, a non-marine terrace deposit of Upper Pleistocene age that marks the coastal terminus of the Tustin Plain. The northern 20 percent of JWA is in the Tustin Plain. Newport Mesa consists of slightly consolidated sand and gravel deposits with minor amounts of clay, and is up to several hundred feet thick. Bedrock is not exposed at the surface within the boundaries of JWA. Surface water runoff at JWA discharges into a storm drain conveyance system that drains to Upper Newport Bay via the Santa Ana Delhi Channel.

SURFACE WATER QUALITY MANAGEMENT

As discussed above, the airside portion of JWA operates under the NPDES Industrial General Permit. As part of the Industrial General Permit requirements, JWA has prepared and operates under the provisions of a Storm Water Pollution Prevention Plan ("SWPPP") and a Monitoring Program Plan ("MPP"), which were submitted for review and comment to the SWRCB. The SWPPP is designed to identify potential sources of storm water quality degradation at the facility and to identify and implement work practices and management procedures to minimize impacts to storm water. All Airport fuelers and Fixed Based Operators ("FBOs") are required to prepare and implement spill and emergency notification and response plans and procedures. These procedures include Mandatory Fueler Safety Training, which includes fuel spill notification and clean up procedures. Likewise, aircraft maintenance and hazardous materials handling procedures are required to be implemented to reduce the possibility of oil, coolant, and solvents from entering the storm drain system.

All washing of aircraft or ground service equipment ("GSE") must be conducted at approved wash racks or be conducted in such a manner as to prevent wash water from flushing into the storm drain system.

In furtherance of the Airport's SWPPP, JWA and its tenants upgraded the Airport's fueling and storm water pollution prevention facilities in 2000. The commercial fuel farm and hydrant fuel systems were upgraded to eliminate all direct discharges into the storm drain system. The storm drain system now includes two clarifiers and six oil/water separators. Five of these are Petro Pack equipped and have associated alarm systems, and four are equipped with automatic storm water samplers and flow meters. This system provides coverage for all drainage areas where industrial activities are performed.

JWA submits an Annual Report to the Santa Ana RWQCB on its Industrial General Permit compliance. This report contains inspection reports, storm water quality analytical results, and a description and evaluation of JWA's storm water pollution preventive measures pursuant to the Industrial General Permit.

As also discussed above, the landside (non-industrial) areas of the Airport are under the jurisdiction of Orange County's MS4 Permit. In 2003, JWA amended its parking lot and landscape maintenance contracts to reflect recent changes in MS4 Permit rules. Contractors are required to implement BMP procedures to reduce runoff and pollution into the storm drain system. Under the new rules, parking lots and sidewalks at JWA are no longer allowed to be washed off into the storm drains. Dirt, trash, leaves, grass-cuttings, and other types of debris must be swept-up and properly disposed of offsite. A self-contained scrubbing machine is used to clean oil and grease from the parking lots. Wash water from this machine is disposed of into the industrial sewer

system. Pesticides, herbicides, fertilizers, industrial cleaning products or other hazardous materials are also tightly regulated and monitored through the requirements imposed by the MS4 Permit.

JWA is a member of a County Task force, which prepares and submits an Annual Report to the Santa Ana RWQCB. This report is an assessment of the Municipal Activities Program's effectiveness. JWA submits data on BMPs implemented, BMP effectiveness and monitoring; documentation of training on the use of hazardous materials, pesticides, herbicides, and fertilizers; documentation on the quantity of fertilizers, herbicides, and fertilizers applied; and the status of required application permits.

REGIONAL WATER QUALITY

The pollutants identified in the 303(d)-listed water bodies summarized in Table 4.10-1 above can be grouped into the following categories: pesticides, metals, pathogens, nutrients and other organics, and sediment. These are typical pollutants generated by an urban area with dense land development and a wide variety of land uses. It is noted that the existing and/or approved TMDLs for the pollutants identified for these water bodies do not apply directly to discharges of urban runoff, such as from JWA, but rather apply within the specified receiving waters. The primary source of pollutants is via surface runoff, both from point (i.e., an outlet) and non-point sources.

In addition, airborne pollution can fall to the ground in precipitation, in dust, or simply due to gravity. This type of pollution is called "atmospheric deposition" or "air deposition." Pollution deposited from the air can reach water bodies in two ways: (1) it can be deposited directly onto the surface of the water (direct deposition) or (2) be deposited onto land and be carried to water bodies through runoff (indirect deposition) (USEPA 2013). Airborne pollutants can travel anywhere from a few yards to thousands of miles before being deposited (USEPA 2001). For example, it is now known that dust from China often reaches the west coast of the U.S. (UCLA 2006)

Human, or anthropogenic, sources of airborne pollutants include the combustion of fossil fuels for power generation and transportation, the release of chemical byproducts from industrial and agricultural processes, and the incineration of waste. Natural processes that can release substantial amounts of pollutants into the air include volcanoes and forest fires (USEPA 2013). Some pollutants in the atmosphere occur naturally, including nitrogen, sulfur, mercury, lead, cadmium, copper, and zinc. The pollutants that are often identified as having significant atmospheric contributions in water bodies are sulfur compounds, nitrogen compounds, mercury compounds, other heavy metals, and a handful of anthropogenic pesticides and industrial by-products, including pesticides and herbicides (USEPA 2001).

The UCLA Institute of the Environment and Sustainability, as part of its 2006 Southern California Environmental Report Card, addressed atmospheric deposition of pollutants in southern California. Specifically, "This article, using the findings of studies conducted over the last ten years at UCLA, in collaboration with the Southern California Coastal Water Research Project (SCCWRP), summarizes the current state of understanding of atmospheric deposition as a contributor to water quality problems." As reported in this article, scientists from UCLA and elsewhere have used air quality computer models to determine the transport and fate of metals in the Los Angeles region. The models indicate about a fourth to a third of the material emitted

into the atmosphere is deposited within the [Los Angeles] region and the rest is carried away by the wind (UCLA 2006).

The pattern of dust and metal concentrations in the atmosphere and the associated deposition on land is relatively uniform spatially in the Los Angeles urban region, although deposition near major sources, such as freeways, is higher than the regional background rate within about 100 meters of the road. In the urban areas, daytime concentration and deposition of metals is greater than nighttime because of the influence of traffic on resuspension of dust from roads by moving vehicles and from other paved and unpaved surfaces by wind, which is the most significant source of metals to the atmosphere, in Los Angeles and elsewhere (UCLA 2006). Although the UCLA report describes local conditions within the Los Angeles region, given the similarity in urban development, the conclusions can be extrapolated to the Orange County region. In summary, some portion of the pollutants identified in the receiving waters of JWA – Santa Ana Delhi Channel and Upper Newport Bay – are likely derived from atmospheric deposition. In addition to these and other inland water bodies in the region, it is noted that the Pacific Ocean is also a receptor for atmospheric pollutants.

The Transportation Research Board relatedly sponsored a study that summarized a series of government-sponsored aircraft emission tests to better understand the gaseous and particulate emissions from aircraft engines. The study cites analysis prepared at several airports that are near and adjacent to communities, including studies in the vicinity of Los Angeles International Airport, Rhode Island's T.F. Green Airport, Boston Logan International Airport, Charlotte/Douglas International Airport, John Wayne Airport, Seattle-Tacoma International Airport, Fort Lauderdale Hollywood International Airport, and Chicago O'Hare International Airport. None of these studies have shown a definitive link between the airports and the deposited material. Rather, these studies commonly find the deposits are typical of the material found throughout urban areas that come from diesel trucks, construction activity, wind-blown dust, pollen, and mold. The Aircraft Particle Emissions eXperiment ("APEX") tests, which were reviewed as part of the study, were the first studies that clearly indicated that particulate matter from aircraft is comprised of fine or ultrafine particles, which are too small to settle gravitationally or to be deposited on stationary surfaces and, thus, remain suspended in the atmosphere. The studies prior to APEX[4] are not conclusive since they used different methodologies and many only sampled dry deposition and did not collect material deposited through rainfall, which is a primary mechanism for scrubbing suspended particles from the atmosphere.

The City of Newport Beach performed a study entitled "Field Measurements of Ambient Particles and Associated Trace Elements and Hydrocarbons" (Boyle 2010). The study indicates that the purpose was to "measure airborne concentrations of particulate pollutants, and to characterize the chemical composition of these particles, at different locations in the City of Newport Beach, California." Data was collected at six locations over approximately five sampling dates (note that data was collected at all sites on every sampling date). The study concludes that the data

[4] The first APEX study was conducted in April 2004 to collect a set of gaseous and particulate emissions data from a DC-8 aircraft with CFM-56-2C1 engines owned by NASA. This test was followed by the Delta Atlanta Hartsfield Study in September 2004 where two MD-88 aircraft with JT8D engines, two B757 aircraft with PW2037 engines, and two B767 aircraft with CF6-80 engines were examined. A third test in August 2005 examined emissions from two B737-700 aircraft with CFM56-7B22 engines and two 737-300 aircraft with CFM56-3B1 engines and a fourth test, conducted in October-November 2005, evaluated emissions from a Learjet25 aircraft with CJ610 engines, an A300-600 aircraft with PW4158 engines, two B757 aircraft with RB211-535E4B Phase 5 engines, an ERJ aircraft with AE3007-A1E engines, an ERJ aircraft with AE3007-A1P engines, and a B737-300 aircraft with CFM56-3B engines. (TRB 2008.)

"indicate that ambient PM2.5 [concentration] at the locations sampled in the City of Newport Beach is well within federal air quality standards" (Boyle 2010, page 4). The study also indicates that it was "designed as a preliminary assessment of the feasibility of using field air sampling to detect differences in the amounts and chemical composition of PM2.5 in relation to various sources. These objectives were met." While the study suggests larger-scale sampling may be useful, no further conclusions were presented.

Operation of JWA involves activities known to generate atmospheric pollutants – mainly combustion of fossil fuels and resuspension of dust on both runways and roadways from airplane/vehicle traffic (see Section 4.1, Air Quality, for a detailed discussion of air emissions associated with the Airport). Accordingly, with rainfall, the operations on the Airport would reasonably contribute an incremental amount of several of the pollutant types through atmospheric deposition that may add to pollutant loads identified in the 303(d)-listed waterways. However, as noted above in Table 4.10-1, with the exception of sediment, and potentially metals, the pollutants of concern for the waterways on the 303(d) list are not the pollutants generally associated with emissions from aviation activities. Oil and grease are generally associated with aviation activities, and Newport Bay is not impacted by those pollutants.

As described, the contaminants of concern for Newport Bay are PCBs, pesticides, bacteria, nutrients, sediment, and metals. No construction is being conducted for this project and therefore very little sediment is being discharged, particularly because all discharges are settled into large clarifiers before stormwater goes off site. JWA may have sources of dissolved metals such as fencing and roofing, or from tires and brakes, however, these same pollutants are also generated along every major freeway in southern California, as well as at the numerous airports of various sizes throughout the South Coast Air Basin, including, but not limited to: JWA, Long Beach Airport, Fullerton Municipal Airport, Ontario International Airport, Chino Airport, Los Angeles International Airport, Bob Hope Airport, and Van Nuys Airport.

4.10.4 THRESHOLDS OF SIGNIFICANCE

In accordance with the County's Environmental Analysis Checklist and Appendix G of the State CEQA Guidelines, the Project would result in a significant water quality impact if it would:

Threshold 4.10-1 Violate any water quality standards or waste discharge requirements.

Threshold 4.10-2 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Threshold 4.10-3 Otherwise substantially degrade water quality.

4.10.5 IMPACT ANALYSIS

Because there is no way to readily or reliably quantify the increment of increased water quality pollutants for each of the various phases (i.e., 2016–2020, 2021–2025, 2026–2030) and because the increment between each Project phase would be nominal, the following analysis is based on the addition of the operational assumptions of the 2026–2030 phase to the existing conditions.

Additionally, because of the interrelated nature of the thresholds, they have been evaluated collectively.

THRESHOLDS EVALUATION

Threshold 4.10-1 Would the project violate any water quality standards or waste discharge requirements?

Threshold 4.10-2 Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Threshold 4.10-3 Would the project otherwise substantially degrade water quality?

Proposed Project

The Proposed Project would result in an increase of up to approximately 13 to 16 percent (depending on 2026–2030 capacity increase) in the number of million annual passengers ("MAP") permitted and a 12 percent increase in the number of permitted Class A average daily noise-regulated passenger flights ("ADDs") relative to existing conditions. The increase in passengers and commercial flights would increase the concentration of oils, grease, and total petroleum hydrocarbons ("TPH") within storm water and other runoff at JWA due to increased passenger jet emissions on runways and increased automobile traffic and associated emissions in parking lots.

These fuel-related pollutants are dominant constituents of the existing runoff stream at JWA; therefore, appropriate BMPs for these petrochemical pollutants are already in place to meet NPDES permit requirements (i.e., the Industrial General Permit and MS4 Permit). For example, there are large oil-water separators and clarifiers located throughout the airfield that treat runoff from each of the aircraft parking aprons. Wastewater and sediment/sludge from the oil-water separators are taken off site for recycling and disposal, as appropriate. Normal Airport maintenance requires high frequency sweeping of all airfield pavement to prevent possible jet engine damage due to foreign objects; this has the added benefit of removing contaminants attached to surficial debris (i.e., dust and sediment that accumulates on paving between storm events). In the parking lots, a self-contained scrubbing machine is used to clean oil and grease from the parking lots, and accumulated wash water is disposed of into the industrial sewer system. Additionally, because the Project does not propose any construction or other change to the nature of the Airport operations that would increase the extent of impervious surfaces, there would be no change in the volume of runoff generated at JWA.

Because water quality BMPs are in place for petrochemical pollutants and because there would be no increase in the volume of runoff generated at JWA, it is anticipated that these and other BMPs in place to minimize impacts to surface water quality would accommodate the increase in the concentration of petrochemicals within the existing runoff flows. For the past 15 years, JWA has provided the Santa Ana RWQCB with stormwater runoff sampling data that demonstrates that the Airport is in compliance with the requirements of the Stormwater Pollution Prevention Plan (JWA 2009). JWA will continue to prepare and submit an Annual Report to the Santa Ana RWQCB that assesses the effectiveness of all NPDES-related BMPs; the Annual Report provides a mechanism to ensure the effectiveness of all NPDES-related BMPs regardless of the intensity of Airport operations

As discussed under Existing Conditions, the fine or ultrafine particles associated with aircraft emissions remain suspended in the atmosphere because they are too small to settle gravitationally or to be deposited on stationary surfaces. However, with rainfall these particles would be scrubbed from the air and deposited on land and in water. The increased number of flights associated with the Proposed Project would result in an increase in the amount of suspended particles associated with the Airport; therefore, reasonably it would add incrementally to the atmospheric pollutant deposition in the receiving waters downstream of JWA. However, it is not reasonable to assume all emissions from JWA operations would be deposited locally because the airstream disperses pollutants and the settling into waterways would predominately occur only when it rains. (TRB 2008). Therefore, quantification of the contribution of the Proposed Project's pollution to downstream receiving waters is not possible.

To provide context, however, aviation emissions represent 0.5 to 2.5 percent of the total air basin emissions, depending on the pollutant evaluated. This includes all airports within the South Coast Air Basin (Appendix D). It also must be noted that the BMPs described above pertaining to runway cleaning reduce the resuspension of metals and dust during airplane landings and takeoffs.

Most of the pollutants identified on the 303(d) for the downstream waterways are associated with agriculture and urban development, not aviation uses (e.g., pesticides, bacteria, nutrients, and pathogens). Based upon available information, the increase in average daily flights and annual passengers under the Proposed Project would not violate water quality standards; would not contribute substantial additional sources of polluted runoff; and would not otherwise substantially degrade water quality. The Proposed Project would result in a less than significant impact and no mitigation is required.

Impact Conclusion: *The Proposed Project would not violate water quality standards or waste discharge requirements; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or otherwise substantially degrade water quality.*

Alternative A

Alternative A would result in an increase of up to approximately 18 percent in the MAP served and a 59 percent increase in the number of noise-regulated ADDs relative to existing conditions. Accordingly, the increase in the concentration of petrochemicals associated with the increased operation of aircraft and automobiles collected in the storm water runoff from JWA would be greater for Alternative A than the Proposed Project. However, while the incremental increases in MAP are similar, the increases in ADDs (and aircraft-related pollutants) would be higher and occur sooner than with the Proposed Project.

As discussed for the Proposed Project, water quality BMPs are in place for petrochemical pollutants, and there would be no increase in the volume of runoff generated at JWA. Therefore, it is anticipated that continued implementation of NPDES-related BMPs would accommodate the increased concentration of petrochemicals within the existing runoff flows. Annual reporting to the Santa Ana RWQCB would ensure the effectiveness of water quality BMPs regardless of the intensity Airport operations. Therefore, the increase in average daily flights and annual passengers under Alternative A would not violate water quality standards; would not contribute

substantial additional sources of polluted runoff; and would not otherwise substantially degrade water quality. Alternative A would result in a less than significant impact and no mitigation is required.

Impact Conclusion: *Alternative A would not violate water quality standards or waste discharge requirements; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or otherwise substantially degrade water quality.*

Alternative B

Alternative B would result in an increase of up to approximately 39 percent of MAP served and 35 percent of noise-regulated ADDs relative to existing conditions. Accordingly, the increase in the concentration of petrochemicals associated with the increased operation of aircraft and automobiles collected in the storm water runoff from JWA would be greater for Alternative B than the Proposed Project. Compared to the Proposed Project, the increases in both MAP and ADDs (and related pollutants) would be higher and would occur sooner.

As discussed for the Proposed Project, water quality BMPs are in place for petrochemical pollutants, and there would be no increase in the volume of runoff generated at JWA. Therefore, it is anticipated that continued implementation of NPDES-related BMPs would accommodate the increased concentration of petrochemicals within the existing runoff flows. Annual reporting to the Santa Ana RWQCB would ensure the effectiveness of water quality BMPs regardless of the intensity of Airport operations. Therefore, the increase in average daily flights and annual passengers under Alternative B would not violate water quality standards; would not contribute substantial additional sources of polluted runoff; and would not otherwise substantially degrade water quality. Alternative B would result in a less than significant impact and no mitigation is required.

Impact Conclusion: *Alternative B would not violate water quality standards or waste discharge requirements; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or otherwise substantially degrade water quality.*

Alternative C

Alternative C would result in an increase of up to approximately 56 percent in the MAP served and 168 percent (i.e., approximately 1.7 times) in the noise-regulated ADDs relative to existing conditions. Accordingly, the increase in concentration of petrochemicals associated with the increased operation of aircraft and automobiles collected in the storm water runoff from JWA would be greater for Alternative C than the Proposed Project. Compared to the Proposed Project, the increases in both MAP and ADDs (and related pollutants) would be higher and occur sooner with Alternative C than with all other alternatives, except the No Project Alternative.

As discussed for the Proposed Project, water quality BMPs are in place for petrochemical pollutants, and there would be no increase in the volume of runoff generated at JWA. Therefore, it is anticipated that continued implementation of NPDES-related BMPs would accommodate the increased concentration of petrochemicals within the existing runoff flows. Annual reporting to

the Santa Ana RWQCB would ensure the effectiveness of water quality BMPs regardless of the intensity Airport operations. Therefore, the increase in average daily flights and annual passengers under Alternative C would not violate water quality standards; would not contribute substantial additional sources of polluted runoff; and would not otherwise substantially degrade water quality. Alternative C would result in a less than significant impact and no mitigation is required.

Impact Conclusion: *Alternative C would not violate water quality standards or waste discharge requirements; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or otherwise substantially degrade water quality.*

No Project Alternative

The No Project Alternative would result in an approximately 1.63 MAP increase and 5 noise-regulated ADDs relative to existing conditions. Accordingly, there would be no increase in the concentration of petrochemicals associated with the increased operation of aircraft and automobiles collected in the storm water runoff from JWA. JWA would continue to implement, monitor, and report on the effectiveness of all NPDES-related BMPs in compliance with permit requirements such that there is no impact to water quality compared to the existing conditions; no mitigation is required.

While there would be no direct impact to water quality associated with the No Project Alternative, this alternative has the potential to indirectly result in increased petrochemical pollutant emissions because the Settlement Agreement would no longer be in effect. Contingent upon additional discretionary action and CEQA compliance by the County's Board of Supervisors, Airport operations under the No Project Alternative in terms of MAP and ADDs could ultimately be similar to, or the same as, Alternative C, which is based on the current physical capacity of JWA's airfield. In addition, other changes may be made to Airport operations in the absence of the Settlement Agreement, and these would require detailed analysis when formulated. As discussed for the Proposed Project, if Airport operations are expanded in the absence of the Settlement Agreement, it is anticipated that continued implementation of NPDES-related BMPs would accommodate the increased concentration of petrochemicals within the existing runoff flows; annual reporting to the Santa Ana RWQCB would ensure the effectiveness of water quality BMPs. Therefore, an increase in Airport operations under the No Project Alternative would not violate water quality standards; would not contribute substantial additional sources of polluted runoff; and would not otherwise substantially degrade water quality. The No Project Alternative would result in a less than significant impact and no mitigation is required.

Impact Conclusion: *The No Project Alternative would not violate water quality standards or waste discharge requirements; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or otherwise substantially degrade water quality*.

4.10.6 MITIGATION PROGRAM

No significant water quality impacts would result from the implementation of any Project scenario. Therefore, no water quality mitigation measures have been identified.

4.10.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Due to the lack of significant project impacts, no mitigation measures were necessary. As a result, there would be no significant unavoidable impacts associated with any Project scenario.

These findings are summarized in Table 4.10-2.

TABLE 4.10-2
SUMMARY OF WATER QUALITY IMPACTS

Threshold	Proposed Project	Alternative A	Alternative B	Alternative C	No Project Alternative
Threshold 4.10-1	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact
Threshold 4.10-2	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact
Threshold 4.10-3	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact

4.10.8 REFERENCES

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