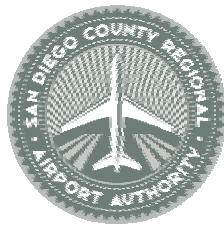


Air Transportation Action Program - ATAP

DRAFT TIER ONE SCREENING ANALYSIS

Appendix F. Hydrology



Prepared for:
San Diego County Regional Airport Authority

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APPENDIX
SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY
AIR TRANSPORTATION ACTION PROGRAM

F. Hydrology

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APPENDIX F - HYDROLOGY

Introduction

In California, the regulation, protection and administration of water quality is carried out by the State Water Quality Control Board (SWQCB) and nine California Regional Water Quality Control Boards (RWQCB). The SWQCB has overall responsibility for setting statewide policy on the administration of water rights and water quality control in California pursuant to federal and state regulatory requirements (e.g., the 1972 federal Clean Water Act and state Port-Cologne Water Quality Act [Division 7 of the California Water Code]).

In addition, the SWQCB determines and maintains the 303(d) list of impaired water bodies. The 303(d) list provides the name of the water body, type of pollutant, area of pollution and level of priority. Impaired waters discussed in this report are derived from the California State Water Resources Control Board Draft 2002 303(d) List Update. Both waters listed as impaired on the adopted 1998 303(d) list as well as waters recommended for listing as part of the 2002 303(d) update are discussed in this report. Definitions of pollutants and level of priority are provided in this Appendix.

In recognition of the regional differences in water quality and quantity, the State is divided into nine regions for the purpose of regional administration of California's water quality control program. Each RWQCB is responsible for adoption and implementation of water quality control plans, issuance of waste discharge requirements and performing other functions concerning water quality control within their respective regions, subject to SWQCB approval.

Each of the nine RWQCBs is required to adopt a Water Quality Control Plan, or Basin Plan, which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's ground and surface waters and local water quality conditions and problems. The Basin Plan facilitates the goal of the RWQCB - to achieve a balance between the competing needs of mankind for water of varying quality. The Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan: 1) designates beneficial uses for surface and ground waters; 2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy; 3) describes implementation programs to protect the beneficial uses of all waters in the Region; and 4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan. Additionally, the Basin Plan incorporates by reference all applicable State and Regional Board plans and policies.

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Offshore areas in California are also subject to the California Ocean Plan (Ocean Plan, 1972 as amended), which is essentially the offshore equivalent of the noted inland Basin Plans. The SWRCB adopts the Ocean Plan and regular amendments, with the state and six coastal regional boards responsible for implementation and interpretation of the plan.

For the purpose of this study, only beneficial uses of surface waters (including ocean waters) are addressed. Beneficial uses are defined as the uses of water necessary for the survival and well being of man, plants and wildlife. These uses of water serve to promote the tangible and intangible economic, social and environmental goals of mankind. The definitions and acronyms of beneficial uses cited throughout this report are provided in this Appendix. Note that cited beneficial use designations apply to all tributaries of the indicated waterbody, if not listed separately. Also, waterbodies may be listed multiple times if they cross hydrologic area or subarea boundaries.

Hydrological Units

Each RWQCB basin is divided into hydrological areas of decreasing size for planning purposes. The largest such unit is the Hydrological Region. The RWQCB covers only one such region. This region is split into Hydrologic Units (HUs), which are divided into Hydrologic Areas (HAs), which may then be further divided into Hydrologic Subareas (HSA). The HSAs may be further divided into progressively smaller units, but will not be addressed in this study. For the purpose of this study, the hydrologic location of each proposed site will be based upon the Region, HU, HA and HSA boundaries it falls within. All sites are within Region 9, San Diego Region, unless otherwise noted within the text.

Flood Hazards

The Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from and mitigating against disaster. Part of this is management of the National Flood Insurance Program (NFIP), which compiles materials such as Digital Flood Insurance Rate Maps (DFIRM), Flood Insurance Rate Maps (FIRMs), Flood Insurance Study reports (FIS reports), Digital Q3 flood data, Community Status Book, Flood Map Status Information Service (FMSIS), Letters of Map Change (LOMCs) and NFIP Insurance Manuals. DFIRM maps were used to determine the flood zone for each proposed site. Definitions of the FEMA codes used on the DFIRM are listed in this Appendix.

Acronyms and Definitions

Acronyms are used throughout this report. A list of acronyms and definitions is provided below.

Acronyms and Term Definitions

Hydrologic Location

SWQCB	State Water Quality Control Board
RWQCB	Regional Water Quality Control Board
HU	Hydrologic Unit
HA	Hydrologic Area
HSA	Hydrologic Subarea

Beneficial Uses

MUN	<p><u>Municipal and Domestic Supply</u> Includes uses of water for community, military or individual water supply systems including, but not limited to, drinking water supply.</p>
AGR	<p><u>Agricultural Supply</u> Includes the uses of water for farming, horticulture or ranching, including but not limited to, irrigation, stock watering, or support of vegetation for range grazing.</p>
PROC	<p><u>Industrial Process Supply</u> Includes the uses of water for industrial activities that depend primarily on water quality.</p>
IND	<p><u>Industrial Service Supply</u> Includes the uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection or oil well re-pressurization.</p>
GWR	<p><u>Ground Water Recharge</u> Includes the uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality or halting intrusion of saltwater into groundwater aquifers.</p>
FRSH	<p><u>Freshwater Replenishment</u> Includes the uses of water for natural or artificial maintenance of surface water quantity or quality (e.g. salinity).</p>
NAV	<p><u>Navigation</u> Includes the uses of water for shipping, travel or other transportation by private, military or commercial vessels.</p>
POW	<p><u>Hydropower Generation</u> Includes uses of water for hydropower generation.</p>

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- REC1 Contact Water Recreation
Includes the uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing or use of natural hot springs.
- REC2 Non-contact Water Recreation
Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sight seeing or aesthetic enjoyment in conjunction with the above activities.
- COMM Commercial and Sport Fishing
Includes the uses of water for commercial or recreational collection of fish, shellfish or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
- AQUA Aquaculture
Includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance or harvesting of aquatic plants and animals for human consumption or bait purposes.
- WARM Warm Freshwater Habitat
Includes the uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including vertebrates.
- COLD Cold Freshwater Habitat
Includes the uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including vertebrates.
- SAL Inland Saline Water Habitat
Includes the uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish or wildlife, including vertebrates.
- EST Estuarine Habitat
Includes the uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish or wildlife (e.g. estuarine mammals, waterfowl and shorebirds).

MAR	<p><u>Marine Habitat</u> Includes the uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish or wildlife (e.g. marine mammals and shorebirds).</p>
WILD	<p><u>Wildlife Habitat</u> Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g. mammals, birds, reptiles, amphibians, invertebrates) or wildlife water and food sources.</p>
BIOL	<p><u>Preservation of Biological Habitats of Special Significance</u> Includes uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection. See the Basin Plan for additional explanation of this definition.</p>
RARE	<p><u>Rare, Threatened or Endangered Species</u> Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.</p>
MIGR	<p><u>Migration of Aquatic Organisms</u> Includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water or temporary activities by aquatic organisms, such as anadromous fish.</p>
SPWN	<p><u>Spawning, Reproduction and/or Early Development</u> Includes uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. This use is applicable only for the protection of anadromous fish.</p>
SHELL	<p><u>Shellfish Harvesting</u> Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g. clams, oysters and mussels) for human consumption, commercial or sport purposes.</p>

“Existing” Beneficial Use An existing beneficial use can be established by demonstrating that: 1) fishing, swimming, or other uses have actually occurred since November 28, 1975 or 2) the water quality and quantity is suitable to allow the use to be attained.

“Potential” Beneficial Use Beneficial uses are determined as “potential” for a variety of reasons, including: 1) plans are proposed to put the water to a future use; 2) potential exists to put the water to a future use; 3) the public desires to put the water to future use; 4) the water is potentially suitable for municipal or domestic water supply under the terms of the *Sources of Drinking Water Policy* (State Board Resolution No. 88-63); or 5) the Regional Board has designated a beneficial use as a regional water quality goal.

“Intermittent Beneficial Uses” Beneficial uses are determined as “intermittent” because water conditions do not allow the beneficial use to exist year-round. The most common example of this is an ephemeral stream.

Ephemeral streams include, at one extreme, those which flow only while it is raining or for a short time afterward, and at the other extreme, established streams which flow through part of the year but also dry up for part of the year. While such ephemeral streams are flowing, beneficial uses are made of the water. Because such uses are made of the water, they are intermittent.

Impaired Waters

Bacterial Indicators	Implies that impairment was due to either coliform, fecal coliform or both. In 2002, impairment may have also been caused by enterococci.
Pacific Ocean	In 1998, unless more information was available, the extent of impairment was assumed to be 0.1 mile for each shoreline impairment due to bacteria. The extents of impairment have been increased to 0.4 mile in 2002. Extents of impairment that were greater than 0.4 mile in 1998 were not changed. See the Basin Plan for rationale.
TMDL	Total Maximum Daily Load
VOC	Volatile Organic Compounds

Flood Hazard

BFE	Base Flood Elevation
DFIRM	Digital Flood Insurance Rate Map
FEMA	Federal Emergency Management Agency

<i>FEMA Code</i>	<i>Definition</i>
152	An area inundated by 100-year flooding, for which no BFEs have been determined.
153	An area inundated by 100-year flooding, for which BFEs have been determined but are expressed in meters for some communities.
158	An area of undetermined but possible flood hazards.

<i>FEMA Code</i>	<i>Definition</i>
160	An area inundated by 500-year flooding.
161	An area that is determined to be outside the 100- and 500-year floodplains.
191	A body of open water that has no defined flood hazard.

** For additional FEMA code definitions and explanations refer to the National Flood Insurance Program Standards for Digital Insurance Rate Flood Maps (FIA-21/October 1993).*

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McClellan-Palomar Airport Area

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Oceanside Area

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Ramona Area

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(MCAS) Miramar

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NAS North Island

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March Air Force Base

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Tijuana Rodriguez International Airport

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National City Bayfront Area

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Off-Shore Floating Airport

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Salt Marsh Naval Communications Station Area

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Silver Strand Area

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Marine Corps Base (MCB) Camp Pendleton

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East Miramar

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Otay Mesa Area

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Warner Springs Area

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Desert Site

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