CHAPTER 1
INTRODUCTION

FIGURES

TABLES

PHOTOS

1. INTRODUCTION

INTRODUCTION

In California, the regulation, protection and administration of water quality are carried out by the State Water Resources Control Board (State Board) and nine California Regional Water Quality Control Boards. The State Board consists of five full-time members appointed by the Governor for four year terms. In general, the State Board has overall responsibility for setting statewide policy on the administration of water rights and water quality control in California. The work of the State Board is carried out by a technical, legal, and administrative staff supervised by an executive director.

In recognition of the regional differences in water quality and quantity, the State is divided into nine regions (see Figure 1-1) for the purposes of regional administration of California's water quality control program. Each of the nine regions has a California Regional Water Quality Control Board (Regional Board) comprised of nine part-time members who are appointed by the Governor for four year terms. The regional boards are 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 State Board review or approval. The work of each regional board is carried out by a technical and administrative staff supervised by an executive officer.

Each of the nine regional boards 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. This document is called the *Water Quality Control Plan for the San Diego Basin (9)*. (The terms Water Quality Control Plan and Basin Plan are used interchangeably throughout this document.)

There are two types of Water Quality Control Plans, Regional Board Basin Plans such as this document and statewide Water Quality Control Plans such as the *Ocean Plan* and *Thermal Plan*. Statewide plans are discussed in Chapter 5, *Plans and Policies*. Key terms and abbreviations used throughout this Basin Plan are included as a glossary and acronyms respectively, in Appendix A.

FUNCTION OF THE BASIN PLAN

The San Diego Regional Board's 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 [California Water Code sections ~~§~~13240 thru 13244, and section ~~§~~13050(j)]. Additionally, the Basin Plan incorporates by reference all applicable State and Regional Board plans and policies.

The goal of the Regional Board is to achieve a balance between the competing needs of mankind for water of varying quality. Often times the constituents and quality of water needed to protect various beneficial uses will be different. The Basin Plan is the Regional Board's plan for achieving the balance between competing uses of surface and ground waters in the San Diego Region. Accordingly, this Basin Plan establishes or designates beneficial uses and water quality objectives for all the ground and surface waters of the Region. Beneficial uses are 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. Water quality objectives are the levels of water quality constituents or characteristics which must be met to protect the beneficial uses. This Basin Plan also establishes an implementation program describing the actions by the Regional Board and others that are necessary to achieve and maintain the designated beneficial uses and water quality objectives of the Region's waters.

The Regional Board regulates waste discharge and reclaimed water use to minimize and control adverse effects on the quality and beneficial uses of the Region's ground and surface waters.

VICINITY MAP, BASIN PLANNING AREAS

Figure 1 - 1.

The Regional Board issues permits, called *"waste discharge requirements"* and "*master reclamation permits*" which require that waste and reclaimed water not be discharged in a manner that would cause an exceedance of applicable water quality objectives or adversely affect beneficial uses designated in the Basin Plan. The Regional Boards enforce these permits through a variety of administrative means.

GEOGRAPHICAL SETTING

The geographical setting of the San Diego Region results in a number of physiographic and environmental characteristics. A discussion of each of the major elements is presented in the following subsections.

PHYSIOGRAPHY

The San Diego Region occurs within the Peninsula Range Physiographic Province of California. One of the most prominent physical features in the region is the northwest-trending Peninsula Range which includes from north to south, the Santa Ana, Agua Tibia, Palomar, Volcan, Cuyamaca and Laguna mountains. The region exhibits a gently sloping dissected western surface and a steep eastern slope and is separated from the West Colorado River area (Region 7A) by abrupt fault scarps of marked relief.

The San Diego Region is divided into a coastal plain area, a central mountain-valley area, and an eastern mountain valley area. The coastal plain area comprises a series of wave cut benches covered by thin terrace deposits. This terraced surface has been deeply dissected by streams draining to the sea, and has been smoothed and rounded by local erosion. The surface of this area ranges from sea level to about 1,200 feet (ft) and extends from the coast inland in a band of about 10 miles in width. The central mountain-valley area is characterized by ridges and intermontane basins which extend from the coastal plain, northeastward to the Elsinore fault zone. The basins or valleys range in elevation from 500 to about 5,000 ft and are generally of fault block origin modified by erosion. The floors of the intermontane valleys are generally underlain by moderate thicknesses of alluvium and residuum; notable examples occur near El Cajon, Escondido and Ramona which range in elevation from about 500 to 1,500 ft above sea level. At higher elevations plateau surfaces have been developed in the central mountain-valley area. These surfaces are probably also of erosional origin; they occur at elevations ranging from 2,000 to 6,000 ft near the Laguna mountains, Santa Ysabel and Valley Center.

To the northeast of the Elsinore fault zone, the region has been designated as the eastern mountain-valley area. The area contains broad, relatively flat valleys which are structurally of block fault origin. Locally, the grabens contain thick sections of alluvial deposits. These valleys generally rise to the southeast from about 1,000 ft elevations near Temecula to the rolling plateaus of Glenoak, Lewis and Reed valleys which range from 3,000 to 3,500 ft in elevation. Surrounding mountains including Red mountain, Cahuilla mountain and Bachelor mountain, attain elevations ranging from 4,000 to 7,500 ft.

CLIMATE

The San Diego Region's coastal climate is generally mild. Temperatures average about 65 degrees Fahrenheit (° F) and precipitation averages 10 to 13 inches. Proceeding inland, as elevations increase, average temperatures decline to 57° F in the Laguna mountain area and precipitation increases to more than 45 inches in the Palomar mountain area. Most of the precipitation falls during November through February. Temperature and rainfall intensity variations are larger in the inland portions. The maximum rainfall intensity was recorded as 11.5 inches in 90 minutes, at Campo on August 12, 1891. Precipitation occurs principally as rain, with snow common only in the high mountains. Runoff in the Region results mainly from rainfall. The melting of snowpack and surfacing ground water springs also contribute small additional amounts of runoff. The flow of surface and ground waters in the Region is in an east to west direction toward the Pacific Ocean.

LAND USE / POPULATION

Land use within the Region varies considerably. The regional growth forecast for various land uses within the Region, for the San Diego Association of Governments', and for the Southern California Association of Governments' sphere of influence are shown in Appendix B-1 and B-2, respectively. The San Diego Association of Governments' regional growth forecast by hydrologic unit (HU) is shown in Appendix B-3.

The Region is experiencing and is expected to continue to experience population growth. Table 1-1 shows population projections for San Diego, Riverside, and Orange counties.

REGIONAL BOUNDARIES


Shorebirds at Tijuana Estuary shoreline

The San Diego Region forms the southwest corner of California and occupies approximately 3,900 square miles of surface area. The western boundary of the Region consists of the Pacific Ocean coastline which extends approximately 85 miles north from the United States and Mexico border. The northern boundary of the Region is formed by the hydrologic divide starting near Laguna Beach and extending inland through El Toro and easterly along the ridge of the Elsinore Mountains into the Cleveland National Forest. The eastern boundary of the Region is formed by the Laguna Mountains and other lesser known mountains located in the Cleveland National Forest. The southern boundary of the Region is formed by the United States and Mexico border.

The San Diego Region encompasses most of San Diego county, parts of southwestern Riverside county and southwestern Orange county. The Region is divided into 11 major hydrologic units (HUs),[1] 54 hydrologic areas (HAs),[2] and 147 hydrologic subareas (HSAs).[3] The geographic boundaries and names of these HUshydrologic units are shown in Table 1-2 and Figure 1-2. [4] A larger scale map of these HAshydrologic areas is contained in the rear pocket of this Basin Plan. The boundaries were initially designated by the State Department of Water Resources (DWR) and described in the report Names and Areal Code Numbers of Hydrologic areas in the Southern District which was published in April, 1964. The HUshydrologic units, HAsareas and HSAssubareas were subsequently enumerated by the State Board in the early 1970's. In accordance with the early DWR definitions, HUshydrologic units are the entire watershed of one or more streams; HAshydrologic areas are major tributaries and/or major groundwater basins within the HUhydrologic unit; and HSAshydrologic subareas are major subdivisions of HAshydrologic areas including both water-bearing and nonwater-bearing formations.

San Juan Hydrologic Unit (1.00)

The San Juan HUHydrologic Unit is a generally trapezoid-shaped area of 500 square miles. Laguna Beach, San Juan Capistrano, Dana Point, and San Clemente are other major population centers. Several smaller towns are scattered along the coast.

The two major natural surface water bodies of the unit are San Juan Creek and San Mateo Creek. San Juan Creek divides the unincorporated communities of Dana Point and Capistrano Beach in Orange county, and enters the Pacific Ocean at Doheny Beach State Park. The mouth of the creek is normally open to the ocean. Usually, the water at the mouth of the creek is essentially the same as that of the adjacent coastal waters. The mouth of San Mateo Creek forms a salt water tidal marsh and is entirely within the Camp Pendleton Naval Reservation.

The San Juan HUHydrologic Unit is comprised of the following five HAshydrologic areas; the Laguna, Mission Viejo, San Clemente, San Mateo, and San Onofre HAsHydrologic Areas.

TABLE 1-1. POPULATION PROJECTIONS FOR THE STATE OF CALIFORNIA AND SAN DIEGO, RIVERSIDE, AND ORANGE COUNTIES

Location	Year 1990	1995	2000	2005	2010	2015
San Diego County	2,421,233	2,677,058	2,915,692	3,143,155	3,373,422	3,618,554
Riverside County	1,195,400	1,493,558	1,771,276	2,076,538	2,402,889	2,759,172
Orange County	2,415,269	2,667,706	2,862,106	2,992,855	3,099,374	3,193,64
Total for California	29,777,448	32,958,921	36,214,623	39,194,880	42,178,903	45,344,961

TABLE 1 –2. HYDROLOGIC UNITS, AREAS ~~(HA)~~ AND SUBAREAS ~~(HSA)~~ OF THE SAN DIEGO REGION

BASIN NUMBER	HYDROLOGIC BASIN		BASIN NUMBER	HYDROLOGIC BASIN	
1.00	SAN JUAN HYDROLOGIC UNIT		2.74	Burnt	HSA
1.10	Laguna	HA	2.80	Aguanga	HA
1.11	San Joaquin Hills	HSA	2.81	Vail	HSA
1.12	Laguna Beach	HSA	2.82	Devils Hole	HSA
1.13	Aliso	HSA	2.83	Redec	HSA
1.14	Dana Point	HSA	2.84	Tule Creek	HSA
1.20	Mission Viejo	HA	2.90	Oakgrove	HA
1.21	Oso	HSA	2.91	Lower Culp	HSA
1.22	Upper Trabuco	HSA	2.92	Previtt Canyon	HSA
1.23	Middle Trabuco	HSA	2.93	Dodge	HSA
1.24	Gobernadora	HSA	2.94	Chihuahua	HSA
1.25	Upper San Juan	HSA			
1.26	Middle San Juan	HSA	3.00	SAN LUIS REY HYDROLOGIC UNIT	
1.27	Lower San Juan	HSA	3.10	Lower San Luis	HA
1.28	Ortega	HSA	3.11	Mission	HSA
1.30	San Clemente	HA	3.12	Bonsall	HSA
1.31	Prima Deshecha	HSA	3.13	Moosa	HSA
1.32	Segunda Deshecha	HSA	3.14	Valley Center	HSA
1.40	San Mateo Canyon	HA	3.15	Woods	HSA
1.50	San Onofre	HA	3.16	Rincon	HSA
1.51	San Onofre Valley	HSA	3.20	Monserate	HA
1.52	Las Pulgas	HSA	3.21	Pala	HSA
1.53	Stuart	HSA	3.22	Pauma	HSA
			3.23	La Jolla Amago	HSA
2.00	SANTA MARGARITA HYDROLOGIC UNIT		3.30	Warner Valley	HA
2.10	Ysidora	HA	3.31	Warner	HSA
2.11	Lower Ysidora	HSA	3.32	Combs	HSA
2.12	Chappo	HSA			
2.13	Upper Ysidora	HSA	4.00	CARLSBAD HYDROLOGIC UNIT	
2.20	DeLuz	HA	4.10	Loma Alta	HA
2.21	DeLuz Creek	HSA	4.20	Buena Vista Creek	HA
2.22	Gavilan	HSA	4.21	El Salto	HSA
2.23	Vallecitos	HSA	4.22	Vista	HSA
2.30	Murrieta	HA	4.30	Agua Hedionda	HA
2.31	Wildomar	HSA	4.31	Los Monos	HSA
2.32	Murrieta	HSA	4.32	Buena	HSA
2.33	French	HSA	4.40	Encinas	HA
2.34	Lower Domenigoni	HSA	4.50	San Marcos	HA
2.35	Domenigoni	HSA	4.51	Batiquitos	HSA
2.36	Diamond	HSA	4.52	Richland	HSA
2.40	Auld	HA	4.53	Twin Oaks	HSA
2.41	Bachelor Mountain	HSA	4.60	Escondido Creek	HA
2.42	Gertrudis	HSA	4.61	San Elijo	HSA
2.43	Lower Tucalota	HSA	4.62	Escondido	HSA
2.44	Tucalota	HSA	4.63	Lake Wohlford	HSA
2.50	Pechanga	HA			
2.51	Pauba	HSA	5.00	SAN DIEGUITO HYDROLOGIC UNIT	
2.52	Wolf	HSA	5.10	Solana Beach	HA
2.60	Wilson	HA	5.11	Rancho Santa Fe	HSA
2.61	Lancaster Valley	HSA	5.12	La Jolla	HSA
2.62	Lewis	HSA	5.20	Hodges	HA
2.63	Reed Valley	HSA	5.21	Del Dios	HSA
2.70	Cave Rocks	HA	5.22	Green	HSA
2.71	Lower Coahuila	HSA	5.23	Felicita	HSA
2.72	Upper Coahuila	HSA	5.24	Bear	HSA
2.73	Anza	HSA			

TABLE 1 –2. HYDROLOGIC UNITS, AREAS ~~(HA)~~ AND SUBAREAS ~~(HSA)~~ OF THE SAN DIEGO REGION

BASIN NUMBER	HYDROLOGIC BASIN		BASIN NUMBER	HYDROLOGIC BASIN	
5.30	San Pasqual	HA	9.00	SWEETWATER HYDROLOGIC UNIT	
5.31	Highland	HSA	9.10	Lower Sweetwater	HA
5.32	Las Lomas Muertas	HSA	9.11	Telegraph	HSA
5.33	Reed	HSA	9.12	La Nacion	HSA
5.34	Hidden	HSA	9.20	Middle Sweetwater	HA
5.35	Guejito	HSA	9.21	Jamacha	HSA
5.36	Vineyard	HSA	9.22	Hillsdale	HSA
5.40	Santa Maria Valley	HA	9.23	Dehesa	HSA
5.41	Ramona	HSA	9.24	Galloway	HSA
5.42	Lower Hatfield	HSA	9.25	Sequan	HSA
5.43	Wash Hollow	HSA	9.26	Alpine Heights	HSA
5.44	Upper Hatfield	HSA	9.30	Upper Sweetwater	HA
5.45	Ballena	HSA	9.31	Loveland	HSA
5.46	East Santa Teresa	HSA	9.32	Japatul	HSA
5.47	West Santa Teresa	HSA	9.33	Viejas	HSA
5.50	Santa Ysabel	HA	9.34	Descanso	HSA
5.51	Boden	HSA	9.35	Garnet	HSA
5.52	Pamo	HSA			
5.53	Sutherland	HSA	10.00	OTAY HYDROLOGIC UNIT	
5.54	Witch Creek	HSA	10.10	Coronado	HA
			10.20	Otay Valley	HA
6.00	PENASQUITOS HYDROLOGIC UNIT		10.30	Dulzura	HA
6.10	Miramar Reservoir	HA	10.31	Savage	HSA
6.20	Poway	HA	10.32	Proctor	HSA
6.30	Scripps	HA	10.33	Jamul	HSA
6.40	Miramar	HA	10.34	Lee	HSA
6.50	Tecolote	HA	10.35	Lyon	HSA
			10.36	Hollenbeck	HSA
7.00	SAN DIEGO HYDROLOGIC UNIT		10.37	Engineer Springs	HSA
7.10	Lower San Diego	HA			
7.11	Mission San Diego	HSA	11.00	TIJUANA HYDROLOGIC UNIT	
7.12	Santee	HSA	11.10	Tijuana Valley	HA
7.13	El Cajon	HSA	11.11	San Ysidro	HSA
7.14	Coches	HSA	11.12	Water Tanks	HSA
7.15	El Monte	HSA	11.20	Potrero	HA
7.20	San Vicente	HA	11.21	Marron	HSA
7.21	Fernbrook	HSA	11.22	Bee Canyon	HSA
7.22	Kimball	HSA	11.23	Barrett	HSA
7.23	Gower	HSA	11.24	Round Potrero	HSA
7.24	Barona	HSA	11.25	Long Potrero	HSA
7.30	El Capitan	HA	11.30	Barrett Lake	HA
7.31	Conejos Creek	HSA	11.40	Monument	HA
7.32	Glen Oaks	HSA	11.41	Pine	HSA
7.33	Alpine	HSA	11.42	Mount Laguna	HSA
7.40	Boulder Creek	HA	11.50	Morena	HA
7.41	Inaja	HSA	11.60	Cottonwood	HA
7.42	Spencer	HSA	11.70	Cameron	HA
7.43	Cuyamaca	HSA	11.80	Campo	HA
			11.81	Tecate	HSA
8.00	PUEBLO SAN DIEGO HYDROLOGIC UNIT		11.82	Canyon City	HSA
8.10	Point Loma	HA	11.83	Clover Flat	HSA
8.20	San Diego Mesa	HA	11.84	Hill	HSA
8.21	Lindbergh	HSA	11.85	Hipass	HSA
8.22	Chollas	HSA			
8.30	National City	HA			
8.31	El Toyan	HSA			
8.32	Paradise	HSA			

Figure 1-2. San Diego Region Hydrologic Units, Areas and Subareas.

Santa Margarita Hydrologic Unit (2.00)


Arroyo chub at Rainbow Creek

The Santa Margarita HU~~Hydrologic Unit~~ is a rectangular area of about 750 square miles. Included in it are portions of Camp Pendleton as well as the civilian population centers of Murrieta, Temecula and part of Fallbrook.

The unit is drained largely by the Santa Margarita River, Murrieta Creek and Temecula River. The only coastal lagoon of the unit is the Santa Margarita Lagoon which lies totally within the Camp Pendleton Naval Reservation of the U.S. Marine Corps. The slough at the mouth of the river is normally closed off from the ocean by a sandbar.

The major surface water storage areas are Vail Lake and O'Neill Lake. Annual precipitation ranges from less than 12 inches near the coast to more than 45 inches inland near Palomar mountain.

The San Margarita HU~~Hydrologic Unit~~ is comprised of the following nine HAs~~hydrologic areas~~; the Ysidora, Deluz, Murrieta, Auld, Pechanga, Wilson, Cave Rocks, Aguanga, and Oak Grove HAs~~Hydrologic Areas~~.

San Luis Rey Hydrologic Unit (3.00)

San Luis Rey HU~~Hydrologic Unit~~ is a rectangular area of about 565 square miles, and includes the population centers of Oceanside, and Valley Center, and portions of Fallbrook and Camp Pendleton. In addition there are several Indian reservations in the unit. The major stream system, the San Luis Rey River, is interrupted by Lake Henshaw, one of the largest water storage areas in the San Diego Region. Annual precipitation is heavier than in other units, ranging from less than 12 inches near the ocean to 45 inches near Palomar mountain.

The San Luis Rey Unit contains two coastal lagoon areas, the mouth of the San Luis Rey River and Loma Alta Slough. The mouth of the San Luis Rey River is entirely within the city of Oceanside and is adjacent to the city's northern boundary. The slough area at the mouth of the river is contiguous with Oceanside H~~h~~arbor. Loma Alta Slough is entirely within the city of Oceanside and is the mouth of Loma Alta Creek. The slough is normally blocked off from the ocean by a sandbar.

The San Luis Rey HU~~Hydrologic Unit~~ is comprised of the following three HAs~~hydrologic areas~~; the Lower San Luis, Monserate and Warner Valley Hydrologic areas.

Carlsbad Hydrologic Unit (4.00)


Shore crab at Scripps Coastal Reserve

Carlsbad HU~~Hydrologic Unit~~ is a roughly triangular-shaped area of about 210 square miles, extending from Lake Wohlford on the east to the Pacific ocean on the west, and from Vista on the north to Cardiff-by-the-Sea on the south. The unit includes the cities of Oceanside, Carlsbad, Leucadia, Encinitas, Cardiff-by-the-Sea, Vista, and Escondido. The area is drained by Buena Vista, Agua Hedionda, San Marcos and Escondido creeks.

The Carlsbad HU~~Unit~~ contains four major coastal lagoons; Buena Vista, Agua Hedionda, Batiquitos and San Elijo. Buena Vista lies between the cities of Carlsbad and Oceanside, and is partially within each city. A sandbar occasionally forms across the mouth forming an ocean beach. The water level in the lagoon is maintained by an inflow of rising groundwater and return irrigation water from the area upstream on Vista Creek. A portion of the lagoon has been designated as a bird sanctuary.

Agua Hedionda Lagoon, at the mouth of Agua Hedionda Creek, is within the city of Carlsbad. The lagoon is routinely dredged to keep it open to the ocean. The lagoon serves as an integral part of a utility's power plant cooling water intake system and also provides a reserve cooling water supply. The easterly portion of the lagoon is used for water oriented recreation.

Batiquitos Lagoon, at the mouth of San Marcos Creek, enters the Pacific Ocean between the city of Carlsbad and the unincorporated community of Leucadia. San Elijo Lagoon is the tidal marsh at the mouth of Escondido Creek. The marsh is normally closed off from the ocean but is subject to tidal fluctuations.

The Carlsbad HUHydrologic Unit is comprised of the following six HAshydrologic areas; the Loma Alta, Buena Vista Creek, Agua Hedionda, Encinas, San Marcos and Escondido Creek HAsHydrologic Areas.

San Dieguito Hydrologic Unit (5.00)

San Dieguito HUHydrologic Unit is a rectangular-shaped area of about 350 square miles. It includes the San Dieguito River and its tributaries, along with Santa Ysabel and Santa Maria creeks.

The unit contains two major reservoirs - Lake Hodges and Sutherland, and a smaller facility, the San Dieguito Reservoir.

The unit contains one coastal lagoon, the San Dieguito Slough, located at the mouth of the San Dieguito River, which forms the northerly edge of the city of Del Mar. The lagoon is normally closed off from the ocean by a sandbar.

The San Dieguito HUHydrologic Unit is divided into five HAshydrologic areas; the Solana Beach, Hodges, San Pasqual, Santa Maria Valley and Santa Ysabel HAsHydrologic Areas.

Penasquitos Hydrologic Unit (6.00)

Penasquitos HUHydrologic Unit is a triangular-shaped area of about 170 square miles, extending from Poway on the east to La Jolla on the west. There are no major streams in this unit although it is drained by numerous creeks. Miramar Reservoir, a major storage facility, contains imported Colorado River water.

The unit contains two coastal lagoons, Sorrento Lagoon and Mission Bay. Sorrento Lagoon is the mouth of Penasquitos Creek and empties into the ocean near the northerly boundary of the city of San Diego. Mission Bay and the mouth of the San Diego River form a 4,000 acre aquatic park. Water quality within Mission Bay generally is lower than that of the coastal ocean water due to the poor flushing characteristics of the bay and the input of nutrient material from storm runoff. Sludge from the city of San Diego's Point Loma plant is piped to an island in Mission Bay (Fiesta Island) for use as a soil conditioner and fertilizer.

Annual precipitation in the unit ranges from less than 8 inches along the ocean to 18 inches inland. Poway, and La Jolla are the major population centers.

The Penasquitos HUHydrologic Unit is comprised of the following five HAshydrologic areas; the Miramar Reservoir, Poway, Scripps, Miramar, and Tecolote HAsHydrologic Areas.

Grunion spawning at Ocean Beach

San Diego Hydrologic Unit (7.00)

San Diego HUHydrologic Unit is a long, triangular-shaped area of about 440 square miles drained by the San Diego River. El Capitan, San Vicente, Cuyamaca, Jennings, and Murray reservoirs are the major storage facilities. San Vicente Reservoir, Murray Reservoir, Jennings, and Murray Reservoir store mainly Colorado River water, whereas, El Capitan mainly stores local runoff and some Colorado River water. Cuyamaca Reservoir stores only local runoff.

Much of the impounded water is used to serve major population centers, including a portion of the San Diego metropolitan area and the communities of El Cajon, Santee, Lakeside, Alpine and Julian. Annual precipitation ranges from less than 11 inches at the coast to about 35 inches around Cuyamaca and El Capitan Reservoir. The San Diego HUHydrologic Unit is comprised of the following four HAshydrologic areas; Lower San Diego, San Vicente, El Capitan and Boulder Creek HAsHydrologic Areas.

Pueblo San Diego Hydrologic Unit (8.00)

Pueblo San Diego HUHydrologic Unit is a triangular-shaped area of about 60 square miles with no major stream system. It is bordered to the north, by the watershed of the San Diego River and on the south, in part, by that of the Sweetwater River. The major population center is the city of San Diego. The unit is relatively dry with an annual precipitation of less than 11 inches to 13 inches. The Pueblo San Diego HUHydrologic Unit is comprised of the following three HAshydrologic areas; the Point Loma, San Diego Mesa and National City HAsHydrologic Areas.

San Diego Bay lies offshore of this unit. The bay is approximately 13 miles long and varies from ½ to 1½ miles in width.

Sweetwater Hydrologic Unit (9.00)

Sweetwater HU~~Hydrologic Unit~~ is an elongated northeasterly trending strip with an area of about 230 square miles. It is traversed along its length by the Sweetwater River. The annual precipitation varies from less than 11 inches at the coast to about 35 inches inland.

The Sweetwater HU~~Hydrologic Unit~~ is comprised of the following three HAs~~hydrologic areas~~; the Lower Sweetwater, Middle Sweetwater, and Upper Sweetwater HAs~~Hydrologic Areas~~.

Otay Hydrologic Unit (10.00)

Otay HU~~Hydrologic Unit~~ is a club-shaped area of about 160 square miles. The major stream system traversing the area is the Otay River and its tributaries. The Lower Otay Reservoir is the terminus of the second San Diego Aqueduct. Major population centers include the communities of Imperial Beach in the coastal area and Dulzura inland. The annual precipitation generally increases landward from the coast and varies from less than 11 to 19 inches.

The Coronado, Otay, and Dulzura HAs~~Hydrologic Areas~~ comprise the Otay HU~~Hydrologic Unit~~. The Coronado HA~~Hydrologic Area~~ is composed of the North Island Naval Air Station, the city of Coronado and the Silver Strand.

Tijuana Hydrologic Unit (11.00)

Tijuana HU~~Hydrologic Unit~~ is a triangular-shaped area that is drained by Cottonwood and Campo creeks, which are tributaries to the Tijuana River. It covers an area of about 470 square miles and lies mainly in the mountain-valley section.

The unit's only coastal lagoon is the Tijuana Estuary which occupies approximately 2,000 acres and is generally open to the ocean. Most of the area can be classified as a salt water marsh with a number of arms of open water. Water quality is generally the same as that of the sea water except during periods of runoff when a variety of wastes, which originate in Mexico, are carried into the lagoon from the surface flow in the Tijuana River.

Willet at Tijuana Estuary shoreline

The unit is sparsely populated with the major population centers at San Ysidro and Campo. Annual precipitation varies from less than 11 inches near the coast to more than 25 inches farther inland near Laguna mountain. Runoff is captured by Morena Reservoir and Barrett Lake on Cottonwood Creek.

The Tijuana HU~~Hydrologic Unit~~ is comprised of the following eight HAs~~hydrologic areas~~; the Tijuana Valley, Potrero, Barrett Lake, Monument, Morena, Cottonwood, Cameron and Campo HAs~~Hydrologic Areas~~. The Tijuana Valley Hydrologic Area (HA) is arbitrarily divided by the United States - Mexico boundary. Surface water quality has been adversely affected by runoff coming across the border from Mexico. Ground water quality has been affected by seawater intrusion and waste discharges in both the United States and Mexico.

WATER RESOURCES

The water resources in the San Diego Region are classified as coastal waters, surface waters, ground waters, imported surface waters, and reclaimed water. Fresh water supplied within the Region is obtained from local surface and ground water development projects and imported surface water programs.

Gray whale

COASTAL WATERS

Coastal waters in the Region include bays, harbors, estuaries, beaches, and open ocean. Deep draft commercial harbors include San Diego Bay and Oceanside Harbor. Shallower small craft harbors include Mission Bay and Dana Point Harbor. Important estuaries are represented by coastal lagoons such as Tijuana Estuary, Sweetwater Marsh, San Diego River flood control channel, Kendall-Frost wildlife reserve, San Dieguito River Estuary, San Elijo Lagoon, Batiquitos Lagoon, Agua Hedionda Lagoon, Buena Vista Lagoon, San Luis Rey River Estuary, and Santa Margarita River Estuary.

SURFACE WATERS

The San Diego Region has thirteen principal stream systems originating in the western highlands which flow to the Pacific Ocean. From north to south these stream systems are Aliso Creek, San Juan Creek, San Mateo Creek, San Onofre Creek, Santa Margarita River, San Luis Rey River, San Marcos Creek, Escondido Creek, San Dieguito River, San Diego River, Sweetwater River, Otay River, and the Tijuana River. Most of the streams of the San Diego Region are interrupted in character having both perennial and ephemeral components due to the rainfall pattern and the development of surface water impoundments. Surface water impoundments capture flow from nearly all the Region's major surface water streams. Many of the major surface water impoundments are a blend of natural runoff and imported water.

GROUND WATERS

All major drainage basins in the San Diego Region contain ground water basins. The basins are relatively small in area and usually shallow. Although these ground water basins are limited in size, the ground water yield from the basins has been historically important to the development of the Region. A number of the larger ground water basins can be of future significance in the Region for storage of both imported waters and reclaimed wastewaters. Nearly all of the local ground waters of the Region have been intensively developed for municipal and agricultural supply purposes.

IMPORTED SURFACE WATERS

The San Diego Region receives all of its imported water supplies from the Metropolitan Water District of Southern California (MWD). The MWD was created by the California State Legislature as a special district in 1928. MWD distributes wholesale water through 27 member agencies (cities and water districts) in portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura Counties. The MWD serves more than one-half of the drinking water supply used by 16 million persons in the coastal plain of Southern California.

The MWD supplies water to the following five member agencies in the San Diego Region: (1) Coastal Municipal Water District, (2) Municipal Water District of Orange County, (3) Western Municipal Water District of Riverside County, (4) Eastern Municipal Water District and (5) San Diego County Water Authority. The San Diego County Water Authority, the largest purveyor of MWD water in the San Diego Region, allocates water supplies to member agencies in San Diego County. The MWD obtains its water supplies from the Colorado River Aqueduct and the State Water Project.

The Colorado River Aqueduct is owned and operated by the MWD. Construction of the aqueduct began in 1931 and the first deliveries of imported water to member agencies took place in 1941. This aqueduct transports water from Lake Havasu on the Colorado River, 242 miles to its terminus at Lake Matthews in Riverside County. The aqueduct has an annual maximum capacity of 1.3 million acre-feet.

In 1964, the United States Supreme Court limited California's annual diversions from the Colorado River on a dependable basis to 4.4 million acre-feet in the case Arizona vs. California. As a result of the Supreme Court's decision, MWD's annual diversions from the Colorado River were limited to approximately 550,000 acre-feet. The United States Department of the Interior has the discretion to allow California to use any water that Arizona and Nevada have available from the Colorado River, but do not use. During declarations of surplus, MWD has the highest priority of any California contractor to divert surplus waters from the Colorado River.

MWD's other primary source of water is the State Water Project (SWP). The SWP is owned by the State of California and operated by the California Department of Water Resources. SWP water originates from Lake Oroville on the Feather River and surplus flows in the Sacramento - San Joaquin Delta in northern California. The project transports water from the Sacramento-San Joaquin Delta via the 444-mile long California Aqueduct to 29 contract agencies in the State.

The MWD has an annual entitlement to SWP water of 2,011,500 acre-feet out of a total maximum contractual entitlement of 4.2 million acre-feet for the 29 contractors. The current firm yield of the SWP, 2.4 million acre-feet, falls below the total SWP contractor requests of approximately

3.6 million acre-feet. The current firm yield of the SWP is based on the average annual water supplies available if the hydrologic conditions during the years 1928 - 1934 reoccurred. The firm yield of the SWP can supply only about one-half of the contract entitlement due to the lack of sufficient SWP water conveyance facilities. The demand for SWP water is expected to increase to 4.2 million acre-feet by the year 2010. MWD water supply from the SWP will be subject to limitations unless SWP supplies are increased.

Steadily increasing demands for water have led to the need to import water from the Colorado River and the State Water Project. In November 1947, construction was completed on the first pipeline of the San Diego Aqueduct to deliver Colorado River water into the Region. The pipeline was constructed by the U.S. Navy to meet the increased demand for water caused by accelerated population and industrial growth during the World War II years of 1941 - 1945. Additional pipelines to convey imported water were constructed in subsequent years. Beginning in 1978, State Water Project water from Lake Oroville on the Feather River and surplus flows in the Sacramento - San Joaquin Delta in northern California were blended with the Colorado River water.

In the recent past the MWD water supplies consisted of approximately seventy percent from the Colorado River and thirty percent from the State Water Project. In 1993, the drought reduced the availability of State Water Project waters during the year and MWD water supplies consisted of approximately ninety-three percent from the Colorado River and seven percent from the State Water Project. The San Diego Region is highly dependent upon imported water supplies to meet the residential, industrial, commercial, agricultural, and public water demand. Imported water (i.e., Colorado River and State Water Project) supplies about ninety percent of the demand; surface runoff into local reservoirs and local ground water supplies the remaining ten percent.

The delivery of the maximum amount of SWP water benefits the Region in the following ways:

- SWP water improves the potential for conjunctive uses of water resources.
- SWP water enhances and maintains designated beneficial uses of the Region's surface and ground waters;
- SWP water improves the potential for attainment of water quality objectives;
- SWP water improves the viability of recharge of ground water basins;
- SWP water increases the potential for water reclamation.

The effective implementation of water reclamation in the Region is contingent on the availability of supply waters with relatively low salinity, or total dissolved solids (TDS) concentration. The Colorado River has a high TDS~~total dissolved solids~~ concentration of 600 - 750 milligrams per liter (mg/l). When this water is used for urban needs the TDS increases by about 300 mg/l to 900 -1050 mg/l. This quality of water is, at best, marginal for agricultural and ground water recharge uses of reclaimed water. In contrast, TDS concentrations in State Water Project ~~(SWP)~~ waters are approximately 250 mg/l except during drought periods. The lower TDS concentrations found in State Water Project waters enables water supply agencies to blend SWP waters with Colorado River water supplies to meet drinking water quality standards and reclaimed water discharge limitations.

Water supply demand is expected to continue to increase as a result of population growth in the Region. To meet the projected water demand, water supply agencies are working to increase both the capacity and flexibility of conveyance systems and to intensify development of local water supplies through wastewater reclamation, ground water management, and desalination of seawater. The increased use of local supplies is expected to meet eighteen percent of the total water supply needed by the year 2010. The remaining eighty-two percent of the demand will have to be met by imported water.

RECLAIMED WATER

Reclaimed water is an important and growing component of the Region's water supply. Reclaimed water is obtained through extensive treatment of municipal wastewater to produce a safe and reliable water supply for non-potable

uses. Reclaimed water is used to irrigate parks, agriculture, planned community greenbelt areas, golf courses and freeway landscaping. Reclaimed water use to the maximum extent feasible is important because it reduces dependence on imported water supply and leaves the Region less vulnerable to imported water supply shortages. The use of reclaimed water in the Region is expanding. For example, the San Diego County Water Authority reported that in Fiscal Year 1993, the total volume of reclaimed water used in the Authority's service area was 9,713 acre-feet; this represented a 24 percent increase in reclaimed water use over the previous year. The Authority estimates that the total reclaimed water use volume in their service area will increase to 50,000 acre-feet per year when currently planned water reclamation projects are completed in the year 2010.

REGIONAL BOARD WATER QUALITY MANAGEMENT POLICY

The five policy statements in this section form the Regional Board's Water Quality Management Policy for the San Diego Region. Following each principle policy statement are interpretations and examples of applications of the policy. In certain instances the Regional Board may find it necessary to exercise discretion in applying these policies within the interpretations presented.

POLICY ONE

Water quality objectives, beneficial uses, and water quality control plans and policies adopted by the State Water Resources Control Board and the Regional Water Quality Control Board shall be an integral part of the basis for water quality management.

★ Whenever the existing water quality exceeds the water quality objectives contained in the *Water Quality Control Plan for the San Diego Basin (9),* such existing high quality shall be maintained until it has been demonstrated to the Regional Board that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in water quality less than that described in the *Water Quality Control Plan for the San Diego Basin (9).*[5]

★ Any waste discharged to existing high quality water will be required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that pollution will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.[5]

POLICY TWO

Water shall be reclaimed and reused to the maximum extent feasible.

★ The Regional Board will encourage and recommend funding for water reclamation projects that meet the following conditions and that do not adversely affect vested water rights, unreasonably impair instream beneficial uses, or place an unreasonable burden on present water supply systems: [6]

- √ Beneficial uses will be made of wastewater that would otherwise be discharged to marine or brackish receiving water or evapotranspiration ponds.
- √ Reclaimed water will be used to replace or supplement the use of fresh water or better quality water.
- √ Reclaimed water will be used to preserve, restore, or enhance instream beneficial uses that include but are not limited to, fish, wildlife, recreation, and aesthetics associated with any surface water body or wetlands.

★ The Regional Board will encourage and promote water reclamation while taking into consideration the Regional Board's responsibility of protecting and enhancing beneficial uses and recognizing the need to protect the public health and environment.

★ The Regional Board will require wastewater treatment facilities to provide for appropriate disposal or storage of surplus reclaimed water.

POLICY THREE

Point sources and nonpoint sources of pollution shall be controlled to protect designated beneficial uses of water.[7]

★ Treatment levels at least as stringent as those defined in the federal Clean Water Act will be required of municipal and industrial point sources which are subject to regulation under the Clean Water Act.[8]

★ Sewage collection agencies shall implement a comprehensive pretreatment program including industrial waste ordinances to control the quality and quantity of pollutants which may adversely affect the operation of a municipal wastewater treatment facility, or which may cause the effluent limitations for the facility to be exceeded, or which may pass through the treatment works or will otherwise be incompatible with such works.

★ Nonpoint sources will be controlled in conformance with the Clean Water Act and the Coastal Zone Act Reauthorization Amendments. Nonpoint source control programs will generally be the responsibility of federal, state, and local agencies, and individuals having land management responsibilities. Such controls will be implemented preferably through best management practices,[9] (BMPs). If BMPs fail, controls will be implemented through waste discharge requirements or other regulatory actions.[7]

POLICY FOUR

Instream beneficial uses shall be maintained, and when practical, restored, and enhanced.

★ Coordination shall be encouraged among local agencies with regard to all aspects of planning and land use control.

★ Plans for future development and management of the State's water resource must assure adequate protection of existing instream beneficial uses, and where feasible, include measures to enhance these uses.

★ Instream uses for recreation, fish, wildlife, and related purposes shall be balanced with other uses.

★ The need for water to be impounded must be demonstrated, taking full account of instream values.

★ Reservoir operations shall involve careful consideration of instream uses, even where such uses satisfy altered or enhanced instream values.

POLICY FIVE

A detailed and comprehensive knowledge of the beneficial uses, water quality and activities affecting water quality throughout the Region shall be maintained.

★ The development of a modern comprehensive information gathering, storing, and retrieval system to effectively aid in evaluating water quality throughout the Region shall be encouraged.

LEGAL BASIS AND AUTHORITY

Federal and state laws have been enacted which establish the requirements for adequate planning, implementation, management and enforcement, for the control of water quality. The principal federal and state laws pertaining to the regulation of water quality are known respectively as, the 1972 Federal Water Pollution Control Act (also known as the Clean Water Act) and Division 7 of the 1969 California Water Code (also known as the Porter-Cologne Water Quality Control Act). The laws are similar in many ways. The fundamental purpose of both laws is to protect the beneficial uses of water. An important distinction between the two is that the Porter-Cologne Water Quality Control Act addresses both ground and surface waters while the Clean Water Act addresses surface water only.

In addition, federal and state regulations and policies have been developed to augment and clarify the laws and to provide detail not included in the law.

FEDERAL LAWS AND REGULATIONS

The basic federal law dealing with surface water quality control is the Federal Water Pollution Control Act of 1972 (Clean Water Act). Certain statutory provisions in two other federal laws, the National Environmental Policy Act of 1969 and the Endangered Species Act, supplement the Clean Water Act. Federal regulations implementing the Clean Water Act provisions for water quality planning and management are contained in 40 CFR 130, *EPA Requirements for Water Quality Planning and Management* and 40 CFR 131, *EPA Procedures for Approving State Water Quality Standards*.

FEDERAL WATER POLLUTION CONTROL ACT ~~(CLEAN WATER ACT)~~

The Federal Water Pollution Control Act was amended in 1972 and is commonly referred to as the Clean Water Act. The objective of the Clean Water Act is to "*restore and maintain the chemical, physical and biological integrity of the Nation's waters*" to make all surface waters "*fishable*" and "*swimmable*". The seven goals set forth in the law to achieve this objective are to:

(1) Eliminate the discharge of pollutants to navigable waters by 1985;

(2) Provide water quality which protects and fosters propagation of fish, shellfish and wildlife and allows recreation in and on the water by 1983;

(3) Prohibit discharge of toxic pollutants in toxic amounts;

(4) Provide financial assistance to construct publicly owned treatment systems;

(5) Develop and implement areawide waste treatment management plans;

(6) Develop technology necessary to carry out these goals; and

(7) Develop and implement programs for control of nonpoint sources of pollution.

In 1972, five titles were added as amendments to the Clean Water Act. Title 1 provides for research and related programs, Title 2 provides grants for construction of treatment works, Title 3 provides for standards and enforcement, Title 4 provides for permits and licenses, and Title 5 provides for general provisions.

Clean Water Act sections 106, 205(j), 205(g), 208, 303 and 305 establish requirements for state water quality planning, management, and implementation in regard to surface waters. The Clean Water Act requires that states adopt water quality standards to protect public health or welfare, enhance the quality of water, and serve the purposes of the Clean Water Act. "*Serve the purposes of the Act*" (as defined in sections ~~§~~101(a), ~~§~~101(a)(2), and ~~§~~303(c) of the Act) means that water quality standards:

- Include provisions for restoring and maintaining the chemical, physical, and biological integrity of state waters;

- Whenever attainable, achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water ("*fishable*" and "*swimmable*"); and

- Consider the use and value of state waters for public water supplies, propagation of fish and wildlife, recreation, agriculture and industrial purposes, and navigation.

The states are also required to have a continuing planning process called the Triennial Review process, which includes public hearings at least once every three years to review the water quality standards and revise them if necessary.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 ~~(NEPA)~~

The National Environmental Policy Act (NEPA) declares a national environmental policy and its goals. The overall objectives of NEPA are: (1) to ensure that environmental factors are considered in the decision making process of any federal action and (2) to provide full public disclosure of any federal action. Accordingly, NEPA requires that an Environmental Impact Statement (EIS) shall be "*included in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment*". Federal actions include the operation of programs; the construction of facilities; the provision of funding to others; and a federal agency's decision on

whether to grant its required permission for activities of others, such as private businesses or state or local governments.

NEPA establishes a continuing policy for all levels of government and concerned public and private organizations to create and maintain conditions under which man and nature can exist in productive harmony and fulfill the social, economic and other requirements of present and future generations. NEPA directs an interdisciplinary approach to ensure integrated use of all talents in planning and decision making having impact on the environment (section ~~§~~102). Each report or recommendation must be accompanied by a detailed statement prepared by the responsible official on:

- The environmental impact of the proposed action;
- Any adverse environmental effects which cannot be avoided if the action is taken;
- Alternatives to the action;
- Relationship between local short-term uses of the environment, and maintenance and enhancement of long-term productivity; and
- Any irreversible and irretrievable commitments of resources if the proposed action is taken.

Appropriate alternatives to proposed actions must be studied and developed when conflicts in use of available resources are encountered.

NEPA directs the preservation of acceptable environments and the restoration of those that have been degraded. The spirit of the Act is also carried into the State reviews of proposed actions upon the environment. (See discussion on the California Environmental Quality Act later in this chapter).

ENDANGERED SPECIES ACT ~~(ESA)~~

The federal Endangered Species Act (ESA) establishes federal policy regarding protection of endangered and threatened species. The ESA is directed specifically at projects subject to the ~~National Environmental Policy Act (~~NEPA~~)~~ which may adversely affect endangered and threatened species. Section 7 of the federal ESA~~Endangered Species Act~~ requires all federal agencies, in consultation with the Fish and Wildlife Service and the National Marine Fisheries Service, ensure that their actions do not jeopardize the existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat. The definition of a federal action is very broad and covers almost every water program administered by the United States Environmental Protection Agency (USEPA). All aspects of the USEPA's surface water quality criteria and standards adoption and implementation process are subject to the consultation process. The overriding goal of the consultation process is to provide for the protection and recovery of

threatened and endangered species and the ecosystems on which they depend.

APPLICABLE FEDERAL REGULATIONS

The federal regulations, promulgated by the USEPA to implement the Clean Water Act provisions for water quality planning and management, are contained in 40 CFR 130, EPA Requirements for Water Quality Planning and Management and 40 CFR 131, EPA Procedures for Approving State Water Quality Standards. The regulations contained in 40 CFR 131 require states to:

- Designate appropriate beneficial uses for surface waters;
- Establish narrative and numeric criteria to protect beneficial uses;
- Establish an antidegradation policy to protect and maintain existing beneficial uses and the water quality necessary to protect those uses; and
- Hold a public hearing to review surface water quality standards at least once every three years and revise them if appropriate.

The regulations contained in 40 CFR 130 require states to also develop and follow a water quality planning and management system consisting of the following elements:

- Monitoring methods and procedures to compile and analyze data on surface waters;
- Identification of surface waters that are "*water quality limited*" or not meeting water quality standards;
- A ranking of surface water bodies based on severity of pollution and beneficial uses of the waters. The surface water body ranking must also include a determination of how best to utilize available resources to solve the water quality problems; and
- Pollutant loading allocations to ensure that water quality standards are not exceeded.

These regulations are discussed in detail in Chapters 2 and 3.

CALIFORNIA LAWS AND REGULATIONS

State of California laws that directly affect water resources planning are contained principally in the California Water Code. Certain statutory provisions in the Water Resources Code, Health and Safety Code, Public Resources Code, Fish and Game Code, Food and Agriculture Code, Government Code, Harbors and Navigation Code, California Environmental Quality Act, and the California Endangered Species Act supplement the water quality provisions of the California Water Code. The chief state regulations in the ~~California Code of Regulations~~CCR pertaining to water quality are contained in Title 22 and Title 23.

CALIFORNIA WATER CODE

The California Water Code contains provisions which control almost every consideration of water and its use. Division 2 of the Water Code provides that the State Board shall consider and act upon all applications for permits to appropriate waters. The State Board's authority includes water quality considerations in granting a water right. Division 3 deals with dams and reservoirs; Division 5 pertains to flood control; Division 6 controls conservation, development and utilization of the state water resources; Division 7, covers water quality protection and management; and Divisions 11 through 21 provide for the organization, operation, and financing of municipal, county and local, water-oriented agencies.

ADJUDICATIONS TO PROTECT THE QUALITY OF GROUND WATER (DIVISION 2 OF THE CALIFORNIA WATER CODE)

California Water Code section 2100 provides that the State Board may make a formal determination or judgment in order to protect ground water quality. Thus, the State Board, upon a finding of existing or threatened irreparable damage, may file an action in the Superior Court to restrict pumping or to impose physical solutions, or both, to the extent necessary to prevent destruction of, or irreparable injury to, the quality of ground water. The State Board may take such action only if an affected local agency charged with this responsibility fails to take appropriate action.

PORTER-COLOGNE WATER QUALITY CONTROL ACT ~~(DIVISION 7 OF THE CALIFORNIA WATER CODE)~~

Division 7 of the California Water Code is the basic water quality control law for California. This law is titled the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act establishes a regulatory program to protect water quality and to protect beneficial uses of the state waters.

The Porter-Cologne Act section 13000 provides that:

- The quality of all waters of the state shall be protected for the use and enjoyment by the people of the state; and

- Activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality that is reasonable, considering all demands being made or to be made and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.

The Porter-Cologne Act establishes the State Board and the regional boards as the principle state agencies responsible for control of water quality. The State Board is responsible for:

- Issuing rights for the appropriation of surface water;

- Preventing waste and unreasonable use of water;

- Adjudicating water rights at the request of water users or the courts;

- Adopting state-wide water quality control policy;

- Reviewing actions of regional boards;

- Implementing the federal Clean Water Act; and

- Operation of a grants and loan program for the construction of sewage treatment plants.

The regional boards are responsible for:

- Issuance of waste discharge requirements to regulate the discharge of waste to surface and ground waters;

- Enforcement of the waste discharge requirements by the issuance of cease and desist orders, cleanup and abatement orders, administrative civil liability orders, and court action;

- Water quality control planning within their region; and

- Surveillance and monitoring to detect new sources of pollution and to ensure that ongoing discharges are in compliance with waste discharge requirements.

The Porter-Cologne Act empowers the regional boards to formulate and adopt, for all areas within the regions, a Water Quality Control Plan (Basin Plan) which designates beneficial uses and establishes such water quality objectives as in its judgment will ensure reasonable protection of beneficial uses. Each regional board establishes water quality objectives that will insure the reasonable protection of beneficial uses and the prevention of nuisance. The California Water Code provides flexibility for some change in water quality provided that beneficial uses are not adversely affected. The factors which are to be considered by the Regional Board in establishing water quality objectives are described in Chapter 3, Water Quality Objectives, (page 3-1).

The State Board may adopt water quality control plans for surface waters that overlap Regional Board boundaries, are statewide in scope, or are otherwise considered significant. Statewide plans supersede Regional Water Quality Control Plans where conflict occurs. The Regional Water Quality Control Plans are required to conform with policies of the State Board.

The California Water Code also requires that each regional board include an implementation plan in the Basin Plan. Implementation plans must include as a minimum:

- A description of the nature of the actions necessary to achieve the water quality objectives, including recommendations for appropriate actions by any entity, public or private;

- A time schedule for the actions to be taken; and

- A description of the surveillance to be undertaken to determine compliance with the water quality objectives.

CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1973 ~~(CEQA)~~

The California Environmental Quality Act (CEQA) is a very important and expansive environmental protection law in California. It was enacted by the state legislature in 1973 and is contained in the Public Resources Code sections 21000 through 21177. CEQA is the state-level equivalent of the federal ~~National Environmental Policy Act (~~NEPA~~)~~.

The overall objectives of both laws, NEPA and CEQA, are to provide full public disclosure of a project and to ensure that environmental factors are considered in the decision making process. CEQA requires all state agencies, boards and commissions to include in any report on any project having significant effect on the environment an Environmental Impact Report (EIR). The EIR records the scope of the applicant's proposal and analyzes all its known environmental effects. The EIR must discuss any significant environmental effects which cannot be avoided if the proposal is implemented, proposed mitigative measures to minimize the impact of the project and alternatives to the

project. Also the EIR must discuss the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity and the growth-inducing impacts of the proposed project. The EIR is circulated to interested agencies and members of the public who request a copy. The public has a 45 day period for review during which comments on the EIR are accepted.

State agencies cannot approve a project for which alternatives or mitigation measures exist which would significantly reduce the environmental impacts, unless overriding social and/or economic considerations apply.

Activities of the State and Regional Boards subject to CEQA include adoption of Basin Plans and amendments thereto, issuance of National Pollutant Discharge Elimination System (NPDES) permits, and Waste Discharge Requirements (WDRs). The basin planning process however, has been certified by the Secretary of Resources as being exempt from CEQA's requirement for preparation of an ~~environmental impact report (~~EIR~~)~~ or negative declaration and initial study ~~(California Code of Regulations (~~CCR~~)~~ Title 14, section ~~§~~15251). Under the basin planning process, a plan amendment, as well as a technical~~staff~~ report and backup materials, serve as a functional equivalent to an EIR or negative declaration and initial study. The CEQA Notice of Filing, Environmental Checklist Form, and Notice of Decision must be filed to comply with CEQA.

CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA) as amended in 1987 (California Fish and Game Code, sections ~~§~~2050 thru ~~§~~2098) establishes state policy regarding protection of endangered and threatened species. CESA is directed specifically at projects subject to the ~~California Environmental Quality Act (~~CEQA~~)~~ which may adversely affect endangered and threatened species.

Pursuant to CESA, the Regional Board must consult with the California Department of Fish and Game (DFG) to determine if the Basin Plan would jeopardize the continued existence of any endangered or threatened species or adversely affect the habitat of the species. CESA requires the DFG to issue written findings regarding whether or not Regional Board adoption of the Basin Plan will cause jeopardy to endangered or threatened species.

CESA policy requires that the Regional Board not approve a Basin Plan, which in DFG's opinion, would jeopardize endangered or threatened species. CESA also requires the Regional Board to adopt reasonable and prudent alternatives in the Basin Plan which would minimize any adverse effects identified by DFG to endangered or threatened species. If the alternatives are infeasible, the Regional Board is required to adopt reasonable mitigation and enhancement measures in the Basin Plan.

OTHER STATE STATUTES

Certain statutory provisions contained in the Health and Safety Code, Fish and Game Code, Harbors and Navigation Code, and the Food and Agriculture Code, supplement the water quality provisions of the California Water Code. The Health and Safety Code has statutory provisions providing for the regulation of hazardous waste, hazardous materials, surface impoundments containing hazardous waste, underground and aboveground storage of hazardous substances, and underground injection of toxic substances and the discharge of cancer causing chemicals to sources of drinking water. The Harbors and Navigation Code has statutory provisions to prevent the unauthorized discharges of waste from vessels to surface waters. The Food and Agriculture Code has statutory provisions providing for the prevention of pollution of ground water which may be used for drinking water supplies. The Fish and Game Code has statutory provisions to prevent unauthorized diversions of any surface water body as well as waste discharges deleterious to fish, plant, animal, or bird life. The Government Code requires the Governor to establish a state oil spill and toxic disaster contingency plans.

CALIFORNIA CODE OF REGULATIONS

The administrative procedures of the State Board and regional boards and regulations relating to many facets of water rights and water quality are contained in Title 23, (WATERS) Division 3, (Water Resources Control Board) Chapters 3, 4, 15, and 16 California Code of Regulations (CCR). Requirements for quality of water for domestic uses, wastewater reclamation criteria, and

hazardous waste management are contained in Title 22, Division 4 (Environmental Health).

HISTORY OF BASIN PLANNING IN THE SAN DIEGO REGION

The Dickey Act, enacted by the State of California in 1949, established nine Regional Water Pollution Control Boards in California. Regional Water Pollution Control Boards were directed to establish water quality objectives in order to protect the quality of receiving waters from adverse impacts of discharges. During the first few years, the San Diego Regional Water Pollution Control Board only established narrative objectives for discharges. By 1952, the San Diego Regional Water Pollution Control Board began including numerical limits in requirements for discharges and adopting water quality objectives for receiving waters.

In the late 1960's the San Diego Regional Board conducted an extensive investigation to define water quality objectives for the entire San Diego Region. A report was prepared for each major hydrologic unit of the Region. These reports described the following topics for each hydrologic unit:

- Geology and land use;
- Precipitation and runoff;
- Water quality;
- Surface and ground water use;
- Imported water use;
- Waste disposal;
- Beneficial uses;
- Water quality objectives; and
- The water quality implementation program.

These early reports led to the definition and designation of beneficial uses for the surface and ground waters of the Region. The beneficial uses defined in the early reports have remained intact, for the most part, to the present day.

With the enactment of the Porter-Cologne Water Quality Act in 1969, the names of the Regional Water Pollution Control Boards were changed to Regional Water Quality Control Boards, and their authority was broadened. Furthermore, the Act required the Regional Water Quality Control Boards to initiate development of comprehensive regional Water Quality Control Plans.

In 1971, the San Diego Regional Board adopted an Interim Water Quality Control Plan (Interim Plan) which expanded the number of beneficial uses designated for inland surface waters, and coastal waters subject to tidal action. The Interim Plan was prepared to satisfy state and federal requirements for grant programs for sewage treatment plant construction. In addition, the Interim Plan satisfied the Porter-Cologne Act requirements that each regional board adopt a Water Quality Control Plan. As the term "*interim*" implies, the document was adopted as the first step towards development of a comprehensive fully developed Water Quality Control Plan. The Interim Plan was amended in 1972 to designate a beneficial use for clamming and shellfish harvesting at various locations in coastal waters.

In 1975, the San Diego Regional Board adopted the Comprehensive Water Quality Control Plan Report for the San Diego Region that compiled all of the existing beneficial uses, water quality objectives, and policies into one document and rescinded all individually-adopted objectives and policies. The 1975 Basin Plan was amended by the Regional Board on numerous occasions since 1975. A summary of Basin Plan amendments adopted by the Regional Board between 1979 and 2005~~1994~~ and approved by the State Board, Office of Administrative Law, and USEPA is presented in Chapter 5 (Plans and Policies) of this Basin Plan.

Since 1975, progress has been made toward the control of a number of water quality problems identified in the 1975 Basin Plan, including the control of point source discharges and the development of new programs to address nonpoint source pollution issues in the Region. At the same time, many new issues and areas of concern have arisen as health scientists have identified increasingly lower concentrations of toxic substances as health risks. Furthermore, advancing analytical technology enables detection of contaminants at increasingly lower concentrations. The State and Regional Board's Continuing Planning Process, based on the latest scientific information, addresses both "*old*" and "*new*" water quality issues.

CONTINUING PLANNING PROCESS

As part of the State's continuing planning process, components of the Basin Plan are reviewed as new data and information become available or as specific needs arise. Comprehensive updates of the Basin Plan occur in response to state and federal legislative requirements and as funding becomes available. In addition, State Board and other governmental entities' (federal, state, and local) plans, which can affect water quality, are incorporated into the planning process. The Basin Plan provides consistent long-term standards and program guidance for the Region.

BASIN PLAN REVIEW AND AMENDMENT PROCESS

The following discussion applies to the review and amendment process for any Water Quality Control Plan, (i.e., a Statewide Plan or a Regional Board Basin Plan).

TRIENNIAL REVIEW

Statewide plans and Regional Board Basin Plans are flexible documents which must be reviewed and revised regularly to adapt to changing conditions. A major review of both types of Plans is performed every three years as part of the update process for the "*Triennial Review*". The Triennial Review is required by the federal Clean Water Act [section ~~§~~303(c)(1)]. In addition, state law requires that water quality control plans be reviewed periodically (California Water Code section ~~§~~13240), and that the State Board review statewide plans at least every three years (California Water Code sections ~~§~~13170 and ~~§~~13170.2). These reviews are comprehensive and include a public scoping hearing to identify the issues and water quality standards to be addressed. The review identifies standards which are appropriate and, therefore, require no revisions. Information on new or existing water quality objectives comes from monitoring data, compliance inspections, discharger reports, and public complaints. Monitoring data provides information on background conditions which are used to set water quality objectives.

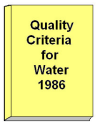
The State or Regional Board evaluates all available information and determines whether revisions to water quality standards are needed and the nature of any necessary revisions. A work plan is prepared which identifies appropriate revisions. These revisions, and a time schedule for implementation, are then incorporated into the Statewide Plan or Regional Board Basin Plan by way of the amendment process discussed below.

BASIN PLAN AMENDMENT PROCESS

Whenever a Statewide Plan or Regional Board Basin Plan for surface waters is to be revised, public participation requirements must be met, as called for in 40 CFR Part 25 (Public Participation in Programs Under the Resource Conservation and Recovery Act and the Clean Water Act). When water quality standards are changed, a public hearing must be held. Notice for the public hearing generally must be given 45 days prior to the hearing, and the documents to be considered at the hearing must be available to the public 30 days prior to the hearing. After the hearing, a summary of comments received and responses to those comments must be prepared before action is taken.

For Regional Board adoption of a Basin Plan amendment, a quorum of Board members must be present (five of the nine members). For State Board approval of a proposed Regional Board amendment, a quorum must also be present (three of the five members). In both cases the vote of a majority of the quorum is required to take action. If a State Board hearing is being held regarding a Statewide Plan or to review an amendment proposed by a Regional Board, one or more members of the State Board may conduct the hearing upon authorization of the State Board. In cases where such a hearing is conducted, any final action must be taken by a majority of all members of the State Board (i.e., 3 votes). Usually State Board hearings are of a controversial nature and most, if not all, Board members elect to attend. The State Board may approve a Basin Plan amendment proposed by a Regional Board or return it to the Regional Board for further consideration. Upon resubmission, the State Board may either approve or, after a public hearing in the affected

region, revise and approve such plan (California Water Code section §13245).



Basin planning is also influenced by several federal administrative guidance documents, such as USEPA's Technical Support Document for Water Quality-Based Toxics Control, the Water Quality Standards Handbook, and "*Gold Book*" Quality Criteria for Water, 1986 and waste load allocation manuals.

Basin Plan amendments are generally initiated by the appropriate Regional Board, and Statewide Plan amendments are initiated by the State Board. Amendments may also be initiated by any other interested parties. In this case, the proposed amendment submitted by the interested party is reviewed by Regional Board staff to determine if the information is adequate to support the requested change to the Basin Plan. The Regional Board staff will review the technical information and may either accept it as complete or reject it as incomplete. Whenever new or revised water quality standards are proposed in a Regional Board Basin Plan amendment, the standards must be approved by the State Board before the amendment becomes effective. A proposed standard revision to a statewide plan or Regional Board Basin Plan takes effect upon approval by the Office of Administrative Law (OAL). A standard contained in a Regional Basin Plan amendment which relates to surface waters or a standard in a statewide plan must be submitted to the United States Environmental Protection Agency (USEPA) for approval [40 CFR section §131.20 (c)] following State Board review. If the standard revision is disapproved by the USEPA, the original standard remains in effect until revised by the basin planning process, or the USEPA promulgates its own rule which supersedes the standard revision [40 CFR section §131.21 (c)].

BASIN PLAN AMENDMENT PROCEDURES

(1) Advance notice of plan amendments is required (California Water Code §13244) and must be advertised for hearings. For amendments that include a prohibition, a public notice must be published for three consecutive days in a newspaper of wide circulation in the area of the prohibition. For other actions, notice must be published for one day in a newspaper of wide circulation. Usually, the hearing notice must be published at least 45 days prior to the hearing (40 CFR section §25.5).

A California Environmental Quality Act (CEQA) Notice of Filing must be circulated at least 45 days prior to State and Regional Board action on a proposed amendment. Where the hearing(s) process is completed and adoption is scheduled for a regularly scheduled State or Regional Board Meeting, a ten-day notice requirement for agenda items applies (Government Code section §11125).

(2) For controversial and/or complex amendments, comments should be requested from interested persons prior to drafting an amendment. This step would be informal by written correspondence or in a workshop session (the public can attend such workshops, which are not "*public hearings*" and would precede the hearing notice in number 3 below). Comments received would be considered in the initial draft of the amendment and the alternatives.

(3) The hearing notice must be specific enough to allow an effective opportunity for public participation. Although it is preferable to include the draft plan amendment and technicalstaff report with the hearing notice, as indicated above, these documents can be made available at a later date that is at least 30 days before the hearing (40 CFR section §25.5). The notice should include:

(a) The general area to be regulated;

(b) The specific proposed plan amendment and a statement of the availability of a technicalstaff report and backup material;

(c) Either of the following,

(i) Alternatives to the proposal or

(ii) A statement that additional rules, consistent with the general purpose of the plan amendment and complementary to the specific proposed rules, are under consideration.

(d) A statement as to whether action on the amendment will be taken immediately at the close of the hearing.

(4) A copy of the hearing notice should be sent to:

(a) Those who normally receive notices of plan review or those who, in the judgment of staff, would be interested in the proposed amendment(s).

(b) Those who have commented on the plan review or amendment.

(c) Those federal, state and local agencies who have jurisdiction by law or who have expertise with respect to the subject(s) of the proposed amendment(s).

(d) Specific interested parties affected by the proposed action.

(5) The State or Regional Board(s) may require that written testimony or other evidence be submitted in advance of the public hearing (Title 23 CCR section ~~§~~649.4). If this option is chosen, the hearing notice should specify the details. Charts, graphs, and other testimony which are presented as evidence must be left with the State or Regional Board(s) in order to be considered as part of the record.

(6) The hearing notice can state that more than one hearing is scheduled and list the dates for each in order to save processing time. Alternatively, the notice may state that action on the amendment could take place following the close of the hearing. Some delays may also be avoided by having special hearings on dates other than regularly scheduled State or Regional Board meetings.

(7) The State or Regional Board(s) ~~Staff~~ must prepare written responses to comments received at least 15 days before the State or Regional Board intends to take action. Copies of responses will be available at the State or Regional Board meeting for any person to review. Late comments should be responded to at the State or Regional Board meeting. If appropriate, the Environmental Checklist Form may be revised based on a review of comments received.

(8) The State or Regional Board(s) ~~Staff~~ must prepare a summary report including:

(a) A brief description of the proposed activity;

(b) Reasonable alternatives to the proposed activity; and

(c) Mitigation measures to minimize any potential significant adverse environmental impacts of the proposed activity identified in the Environmental Checklist Form. Conclusions must be made as to what, if any, potential significant adverse impacts, feasible alternatives, and feasible mitigation measures exist. These conclusions must be accompanied by a statement of supporting facts. In adopting proposed amendments, the State or Regional Board must mandate those feasible alternatives or feasible mitigation measures which are within its jurisdiction. The State or Regional Board cannot approve the proposed amendment if there are feasible alternatives or feasible mitigation measures which would substantially lessen the potential significant adverse environmental impacts (Public Resource Code section ~~§~~21080.5).

(9) The hearing must, at a minimum, be recorded electronically (Title 23 CCR section ~~§~~647.4). Controversial matters usually are recorded by a stenographic reporter.

(10) At the hearing, all interested persons are given an opportunity to be heard. Reasonable limitations on public participation are appropriate and may be indicated in an opening statement (i.e., impose time limits on testimony, encourage groups to designate a spokesperson, and require witnesses to summarize written testimony). There is no right to cross-examination at the hearings. Persons wishing clarification of prior evidence or comments may request the same from the State or Regional Board.

Cross-examination must be allowed when an amendment takes on quasi-judicial features; for example, when considering a prohibition against increasing existing discharges from a relatively small number of dischargers. Cross-examination may also be allowed at the discretion of the Chairperson, if it appears that the

cross-examination will assist the State or Regional Board in its deliberations.

(11) At the close of the hearing, it may be desirable to leave the record open to provide interested persons an additional opportunity to submit written comments. If the record is left open, all interested persons will be told at the hearing that they may review and respond to written comments received during the time that the record is left open. For example, the record could be left open ten days for written submittals and an additional five days for written comments in response to these submittals. Once the record is closed, no additional evidence will be received at the State or Regional Board meeting to consider adoption of the amendment; however, brief comments on the proposal will be allowed.

(12) After the close of the hearing and any comment period, the amendment may be adopted as proposed. If the draft amendment is to be modified, based on the hearing, and the notice is adequate as outlined in number 3 above, a final plan amendment may be adopted when the product is a logical outgrowth of the draft amendment or a statement in the notice. Where changes in the final draft are not a logical outgrowth of the original proposal, an additional notice, hearing, and opportunity to comment will be provided. When changes are proposed by the State or Regional Board ~~Members or staff~~, the procedure is:

(a) For each proposed change, consideration is given as to whether the change is a logical outgrowth of the original proposal. If the change was (1) not contemplated in the technical~~staff~~ report, notice, or draft amendment and (2) not discussed during the hearing(s) or in written comments received, it is not a logical outgrowth of the original proposal; and an additional notice and comment period will be provided. When the issues are complex, controversial, or confusing, an additional comment period on a new draft amendment is often allowed (even if it can be argued that the changes are a logical outgrowth of the original proposal).

(b) If the change is a logical outgrowth of the original draft amendment, it may be voted upon without an additional notice and comment period. If the vote on the amendment is delayed so that the full amendment can be retyped, etc., normal meeting notice requirements may be followed (Title 23 CCR section ~~§~~647.2).

(c) If the change is not a logical growth, a motion may be made to incorporate it into the draft amendment. If this motion passes, consideration of the amendment should be continued so that the revisions can be circulated for comments as provided in number 4 above.

(13) Revisions to plan amendments are based on the evidence developed at the hearing. This requirement does not preclude the State or Regional Board(s) from adopting an amendment immediately after the hearing if all evidence has been considered.

(14) If a Basin Plan amendment is quasi-judicial (focused on the rights and duties of a limited number of individuals such as in a small isolated prohibition area), the State or Regional Board resolution adopting the plan amendment will contain findings that are adequate to enable another interested person to "*bridge the analytical gap*" between the evidence the amendment itself.

(15) When a Regional Board amendment is adopted, it must then be forwarded to the State Board for approval. The State Board ~~staff~~ will review the proposed amendment with extensive evaluation of technical, policy, and legal consistency considerations. The State Board is required to act upon submission of a water quality control plan or revision within 60 days after the Regional Board has submitted the plan, or 90 days after resubmission of the plan (California Water Code section ~~§~~13246). A ~~—~~Basin Plan revision adopted by a Regional Board is not effective until it is approved by State Board (California Water Code section ~~§~~13245) and the Office of Administrative Law. An amendment package to be processed for approval must include all of the following:

(a) A memorandum of transmittal including a list of all material that was part of the Regional Board record, staff contact person, and request date for State Board action. If expeditious treatment is requested, the reason for this request should be stated.

(b) A copy of the certified Regional Board resolution including adopted amendments as it will be incorporated into the appropriate Basin Plan and a copy of all documents which were considered by the Regional Board prior to adoption of the Basin Plan amendment.

(c) The Regional Board technical~~staff~~ report with detailed rationale for changes, any technical support documentation or background information, and information regarding any relevant State Board or Regional Board actions.

(d) An environmental document and any related CEQA documents.

(e) Copies of written public comments and written Regional Board responses.

(f) A responsiveness~~staff~~ summary of any verbal responses to comments received after written comment deadline.

(g) A tape recording or transcript of the public hearing.

(h) Two sets of interested persons mailing lists, typed on self-adhesive address labels or pre-addressed envelopes, plus a typed interested persons list for State Board files.

(16) State Board review of a proposed plan amendment may result in approval or return to the Regional Board for consideration and resubmission. Upon resubmission, the State Board may approve, or, after a public hearing in the affected region, revise and approve the proposed plan amendment (California Water Code section ~~§~~13245).

(17) Following State Board approval of the plan amendment, there is a 30-working day review period by the Office of Administrative Law. The Regional Board is responsible for preparing the administrative record (Items 15 b, c, d, e, f, and g above), a clear and concise summary, and a summary of necessity for review by the Office of Administrative Law. The summary of necessity is normally contained in the technical~~staff~~ report. The Office of Chief Counsel at the State Board prepares a certification that the action was taken in compliance with all applicable requirements of Porter-Cologne.

(18) When the proposed Regional Board amendment has been approved by the Office of Administrative Law, the Regional Board must post a CEQA Notice of Decision with the Secretary of Resources for at least 30 days following Office of Administrative Law approval. When the State Board adopts a Statewide Plan amendment, the State Board must post the 30-day Notice of Decision.

(19) If water quality standards for surface waters are revised in the plan update, the revised plan must be submitted to the USEPA for approval, pending an USEPA determination that the standards meet the requirements of the Clean Water Act (40 CFR 130.10). The amendments must be forwarded to USEPA within 30 days of adoption by the State Board.

REFERENCES

California Administrative Code. 1985 (and all amendments thereto). Title 22 and Title 23.

California Porter-Cologne Water Quality Act, California Water Code, Division 2 and 7. 1969 (and all amendments thereto).

California Regional Water Quality Control Board, San Diego Region. 1975. Comprehensive Water Quality Control Plan Report for the San Diego Basin (9). James M. Montgomery, Consulting Engineers, Inc.

California Regional Water Quality Control Board, San Diego Region. June 12, 1992. Policy Statement – Water Rights Phase of the Bay Delta Estuary Proceedings.

Department of Water Resources. 1967. Ground Water Occurrence and Quality San Diego Region. Bulletin No. 106-2. Volume 1: Text. 235 pp.

Federal Water Pollution Control Act. 1972 (and all amendments thereto). PL 92-500. (Clean Water Act).

Governor's Office of Planning and Research. 1992. CEQA California Environmental Quality Act Statutes and Guidelines 1992. Sacramento, California. 256 pp.

Planning and Conservation League Foundation. June 1985. Citizen's Guide to the California Environmental Quality Act. 14 pp.

San Diego County Water Authority. 1993. Forty-Seventh Annual Report of Authority Operations for Fiscal Year Ending June 30, 1993. San Diego, California. 161 pp.

San Diego County Water Authority. November, 1993. Water Resources Plan, Urban Water Management Plan. San Diego, California. 83 pp.

ENDNOTES

1. Hydrologic Unit - A classification embracing one of the following features which are defined by surface drainage divides: (1) In general, the total watershed area, including water- bearing and non - water bearing formations, such as the total drainage area of the San Diego River Valley; and (2) in coastal areas, two or more small contiguous watersheds having similar hydrologic characteristics, each watershed being directly tributary to the ocean and all watersheds emanating from one mountain body located immediately adjacent to the ocean.

2. Hydrologic Area - A major logical subdivision of a hydrologic unit which includes both water- bearing and nonwater - bearing formations. It is best typified by a major tributary of a stream, a major valley, or a plain along a stream containing one or more ground water basins and having closely related geologic, hydrologic, and topographic characteristics. Area boundaries are based primarily on surface drainage boundaries. However, where strong subsurface evidence indicates that a division of ground water exists, the area boundary may be based on subsurface characteristics.

3. Hydrologic Subarea - A major logical subdivision of a hydrologic area which includes both water- bearing and nonwater - bearing formations.

4. On February 10, 1994 the Regional Board adopted Resolution No. 94-25, A Resolution Adopting Amendments to the Comprehensive Water Quality Control Plan for the San Diego Region for the Laguna (1.10), Mission Viejo (1.20), and San Clemente (1.30), Hydrologic Areas. These hydrologic subareas are: Oso (1.21), Upper Trabuco (1.22), Middle Trabuco (1.23), Upper San Juan (1.25), Middle San Juan (1.26), Lower San Juan (1.27) and Ortega (1.28). The San Clemente Hydrologic Area (1.30) is broken into two hydrologic subareas: Prima Deshecha (1.31) and Segunda Deshecha (1.32).

5. State Water Resources Control Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California.

6. State Water Resources Control Board Resolution No. 77-1, Policy with Respect to Water Reclamation in California.

7. Point sources of pollution refer to pollutants discharged to water through any discernible, confined, and discrete conveyance. Nonpoint sources of pollution refer to pollutants from diffuse sources that reach water through means other than a discernable, confined, and discrete conveyance.

8. State Board Policy for Regulating Point and Nonpoint Sources of Pollution in Accordance with the Federal Water Pollution Control Act.

9. Best Management Practices are defined as the practice, or combination of practices, that are determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a

level compatible with water quality goals (including technological, economic, and institutional consideration.

INDEX – CHAPTER 1