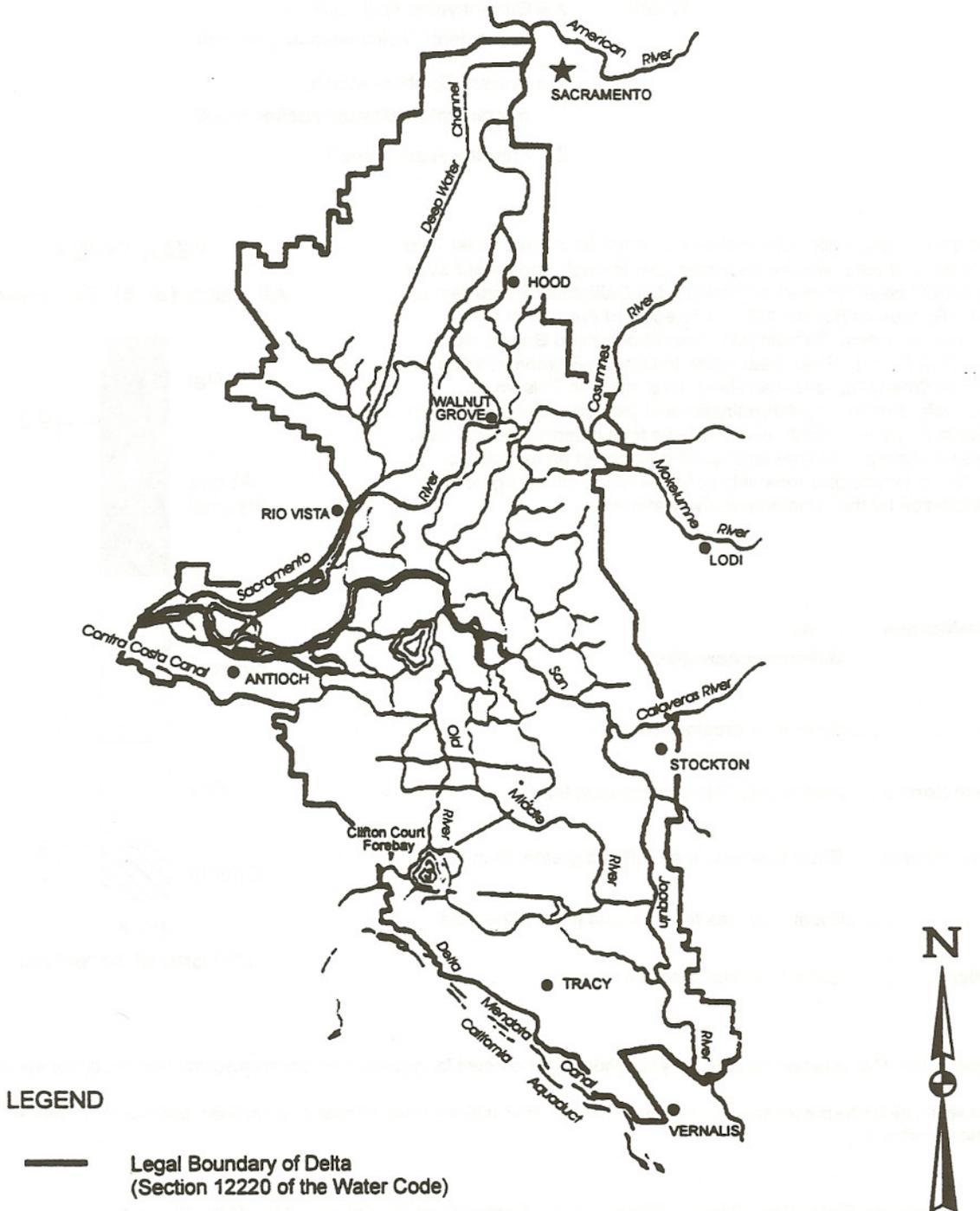


BOUNDARY OF THE SACRAMENTO - SAN JOAQUIN DELTA



**FIGURE III-2 \***

**Sacramento Valley  
Water Year Hydrologic Classification**

Year classification shall be determined by computation of the following equation:

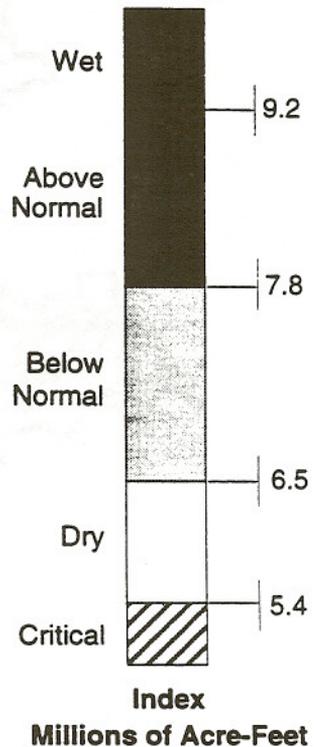
$$\text{INDEX} = 0.4 * X + 0.3 * Y + 0.3 * Z$$

Where: X = Current years April - July  
Sacramento Valley unimpaired runoff  
Y = Current October - March  
Sacramento Valley unimpaired runoff  
Z = Previous year's index <sup>1</sup>

The Sacramento Valley unimpaired runoff for the current water year (October 1 of the preceding calendar year through September 30 of the current calendar year) as published in California Department of Water Resources Bulletin 120 is a forecast of the sum of the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River at Smartville; American River, total inflow to Folsom Reservoir. Preliminary determinations of year classification shall be made in February, March, and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

Classification	Index Millions of Acre-Feet
Wet.....	Equal to or greater than 9.2
Above Normal.....	Greater than 7.8 and less than 9.2
Below Normal.....	Equal to or less than 7.8 and greater than 6.5
Dry.....	Equal to or less than 6.5 and greater than 5.4
Critical.....	Equal to or less than 5.4

**YEAR TYPE 2**  
**All Years for All Objectives**



<sup>1</sup> A cap of 10.0 MAF is put on the previous years index (X) to account for required flood control reservoir releases during wet years.

<sup>2</sup> The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.

\* Taken from the State Water Board's "Water Quality Control Plan For Salinity", May 1991, Figure 3-4

# TABLE III-5\*: WATER QUALITY OBJECTIVES

## A) MUNICIPAL AND INDUSTRIAL USES

LOCATION	SAMPLING SITE NOS. (I-A/RKI)	PARAMETER	DESCRIPTION	INDEX TYPE	YEAR TYPE	DATES	VALUES
<i>Contra Costa Canal at Pumping Plant #1</i>	<i>C-5 CHCCC06</i>	<i>Chloride (Cl-)</i>	<i>Maximum mean daily, in mg/l</i>	<i>Not Applicable</i>	<i>All</i>	<i>Oct-Sep</i>	<i>250</i>
<i>Contra Costa Canal at Pumping Plant #1 - or - San Joaquin River at Antioch Water Works Intake</i>	<i>C-5 CHCCC06</i>	<i>Chloride (Cl-)</i>	<i>Maximum mean daily 150 mg/l chloride for at least the number of days shown during the Calendar Year. Must be provided in intervals of not less than two weeks duration. (Percentage of Calendar Year shown in parenthesis).</i>	<i>Sacramento River 40-30-30</i>	<i>W</i>	<i>No. of days each Cal. Year &lt; 150 mg/l Cl- 240 (66%) 190 (52%) 175 (48%) 165 (45%) 155 (42%)</i>	
	<i>D-12(near) RSAN007</i>	<i>Chloride (Cl-)</i>		<i>Sacramento River 40-30-30</i>	<i>AN</i>		
				<i>BN</i>			
				<i>D</i>			
<i>West Canal at mouth of Clifton Court Forebay</i>	<i>C-9 CHWST0</i>	<i>Chloride (Cl-)</i>	<i>Maximum mean daily, in mg/l</i>	<i>Not Applicable</i>	<i>All</i>	<i>Oct-Sep</i>	<i>250</i>
<i>Delta Mendota Canal at Tracy Pumping Plant</i>	<i>DMC-1 CHDMC004</i>	<i>Chloride (Cl-)</i>	<i>Maximum mean daily, in mg/l</i>	<i>Not Applicable</i>	<i>All</i>	<i>Oct-Sep</i>	<i>250</i>
<i>Cache Slough at City of Vallejo Intake [1] -and/or- Barker Slough at North Bay Aqueduct Intake</i>	<i>C-19 SLCCH16</i>	<i>Chloride (Cl-)</i>	<i>Maximum mean daily, in mg/l</i>	<i>Not Applicable</i>	<i>All</i>	<i>Oct-Sep</i>	<i>250</i>
	<i>- SLBAR3</i>	<i>Chloride (Cl-)</i>	<i>Maximum mean daily, in mg/l</i>	<i>Not Applicable</i>	<i>All</i>	<i>Oct-Sep</i>	<i>250</i>

\* Taken from the State Water Board's "Water Quality Control Plan For Salinity", May 1991

**TABLE III-5\* (cont.): WATER QUALITY OBJECTIVES**

**B) AGRICULTURAL USES BY AREA**

LOCATION	SAMPLING SITE NOs. (I-A/RKI)	PARAMETER	DESCRIPTION	INDEX TYPE	YEAR TYPE	DATES	VALUES
<b>1) WESTERN DELTA</b>							
Sacramento River at Enmaton	D-22 RSAC092	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily, in mmhos/cm (mmhos)	Sacramento River 40-30-30		0.45 EC	EC from Date
						April 1 to	Shown to
						Date Shown	Aug. 15 [2]
					W	Aug. 15	--
					AN	July 1	0.63
					BN	June 20	1.14
					D	June 15	1.67
					C	--	2.78
San Joaquin River at Jersey Point	D-15 RSAN018	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily, in mmhos	Sacramento River 40-30-30		0.45 EC	EC from Date
						April 1 to	Shown to
						Date Shown	Aug. 15 [2]
					W	Aug. 15	--
					AN	Aug. 15	--
					BN	June 20	0.74
					D	June 15	1.35
					C	--	2.20
<b>2) INTERIOR DELTA</b>							
South Fork Mokelumne River at Terminus	C-13 RSMKL08	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily, in mmhos	Sacramento River 40-30-30		0.45 EC	EC from Date
						April 1 to	Shown to
						Date Shown	Aug. 15 [2]
					W	Aug. 15	--
					AN	Aug. 15	--
					BN	Aug. 15	--
					D	Aug. 15	--
					C	--	0.54
San Joaquin River at San Andreas Landing	C-4 RSAN032	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily, in mmhos	Sacramento River 40-30-30		0.45 EC	EC from Date
						April 1 to	Shown to
						Date Shown	Aug. 15 [2]
					W	Aug. 15	--
					AN	Aug. 15	--
					BN	Aug. 15	--
					D	Jun. 25	0.58
					C	--	0.87

\* Taken from the State Water Board's "Water Quality Control Plan For Salinity", May 1991

**TABLE III-5\* (cont.): WATER QUALITY OBJECTIVES**

**B) AGRICULTURAL USES BY AREA**

LOCATION	SAMPLING SITE NOS. (I-AR/KI)	PARAMETER	DESCRIPTION	INDEX TYPE	YEAR TYPE	DATES	VALUES
(To be implemented by 1996) [3]			<b>3) SOUTH DELTA</b>				
San Joaquin River at Airport Way Bridge, Vernalis	C-10 RSAN112	Electrical Conductivity (EC)	Maximum 30-day running average of mean daily, in mmhos	Not Applicable	All	Apr 1-Aug 31 Sep 1-Mar 31	0.7 1.0
Old River near Middle River	C-8 ROLD69					or	
Old River at Tracy Road Bridge	P-12 ROLD59						
San Joaquin River at Brandt Bridge [site]	C-6 RSAN073						
						If a three-party contract has been implemented among DWR, USBR and the SDWA, that contract will be reviewed prior to implementation of the above and, after also considering the needs of other beneficial uses, revisions will be made to the objectives and compliance/monitoring locations noted above, as appropriate.	
			<b>4) EXPORT</b>				
West Canal at mouth of Clifton Court Forebay -and- Delta Mendota Canal at Tracy Pumping Plant	C-9 CHWST0 DMC-1 CHDMC004	Electrical Conductivity (EC)	Maximum monthly average of mean daily EC, in mmhos	Not Applicable	All	Oct-Sept	1.0

\* Taken from the State Water Board's "Water Quality Control Plan For Salinity", May 1991

**TABLE III-5\* (cont.): WATER QUALITY OBJECTIVES**

**(C) FISH AND WILDLIFE BY HABITAT/SPECIES**

LOCATION	SAMPLING SITE NOs. (I-A/RKI)	PARAMETER	DESCRIPTION	INDEX TYPE	YEAR TYPE	DATES	VALUES
<b>STRIPED BASS - SALINITY:1 ANTIOCH - SPAWNING</b>							
Sacramento River at Chipps Island	D-10 RSAC075	Delta outflow Index (DOI)	Average for the period not less than the value shown, in cfs.	Not Applicable	All	Apr 1-Apr 14	6,700
San Joaquin River at Antioch Water Works Intake	D-12 (near) RSAN007	Electrical Conductivity (EC)	14-day running average of mean daily for the period not more than value shown, in mmhos	Not Applicable	All	Apr 15-May 31 (or until spawning has ended)	1.5
<b>STRIPED BASS - SALINITY: 2. ANTIOCH - SPAWNING - RELAXATION PROVISION</b>							
San Joaquin River at Antioch Water Works Intake	D-12 (near) RSAN007	Electrical Conductivity (EC)	14-day running average of mean daily EC in mmhos, not more than value shown corresponding to deficiencies in firm supplies declared by a set of water projects representative of the Sacramento River and San Joaquin River watersheds, for the period shown, or until spawning has ended.  The specific representative projects and amounts of deficiencies will be defined in subsequent phases of the proceedings.	Total Annual Imposed Deficiency (MAF)		Apr 1-May 31 EC in mmhos  Dry	Critical
This relaxation provision replaces the above Antioch & Chipps Island standard whenever the projects impose deficiencies in firm supplies.				0.0 0.5 1.0 1.5 2.0 or more		1.5 1.8 1.8 1.8 1.8	1.5 1.9 2.5 3.4 3.7
						Linear interpolation is to be used to determine values between those shown.	
<b>STRIPED BASS - SALINITY: 3. PRISONERS POINT - SPAWNING</b>							
San Joaquin River at: Prisoners Point	D-29 RSAN038	Electrical Conductivity (EC)	14-day running average of mean daily for the period not more than value shown, in mmhos	Sacramento River 40-30-30	All	Apr 1-May 31 (or until spawning has ended)	0.44

\* Taken from the State Water Board's "Water Quality Control Plan For Salinity", May 1991

**TABLE III-5\* (cont.): WATER QUALITY OBJECTIVES**

**(C) FISH AND WILDLIFE BY HABITAT/SPECIES**

LOCATION	SAMPLING SITE NOS. (I-A/RKI)	PARAMETER	DESCRIPTION	INDEX TYPE	YEAR TYPE	DATES	VALUES
<b>STRIPED BASS - SALINITY: 4. PRISONERS POINT - SPAWNING - RELAXATION PROVISION</b>							
<i>When the relaxation provision for Antioch spawning protection is in effect:</i>							
<i>San Joaquin River at: Prisoners Point</i>	<i>D-29 RSAN038</i>	<i>Electrical Conductivity (EC)</i>	<i>14-day running average of mean daily for the period not more than value shown, in mmhos</i>	<i>Sacramento River 40-30-30</i>	<i>D&amp;C</i>	<i>Apr 1-May 31 (or until spawning has ended)</i>	<i>0.55</i>

**FOOTNOTES:**

- [1] The Cache Slough objective to be effective only when water is being diverted from this location.
- [2] When no date is shown, EC limit continues from April 1.
- [3] South Delta Agriculture objectives will be implemented in stages: two interim stages and one final stage. The first interim stage will be implemented with the adoption of the WQCP, the second interim stage by 1994, and the final stage by 1996. Interim Stage 1 – 500 mg/l mean monthly TDS all year at Vernalis. Interim Stage 2 – (to be implemented no later than 1994) 0.7 mmhos/cm EC April 1 to August 31, 1.0 mmhos/cm EC September 1 to March 31, 30-day running average, at Vernalis and Brandt Bridge; with water quality monitored at three current interior stations – Mossdale, Old River, near Middle River and Tracy Road Bridge, and an additional interior monitoring station on Middle River at Howard Road Bridge. Final Stage – (to be implemented no later than 1996) 0.7 mmhos/cm EC April 1 to August 31, 1.0 mmhos/cm EC September 1 to March 31, 30-day running average, at Vernalis and Brandt Bridge on the San Joaquin River; with two interior stations at Old River Near Middle River and Old River at Tracy Road Bridge. Monitoring stations will be at Mossdale at head of Old River and Middle River at Howard Road Bridge.
- OR
- If a three-party contract has been implemented among DWR, USBR and the SDWA, that contract will be reviewed prior to implementation of the above and, after also considering the needs of other beneficial uses, revisions will be made to the objectives and compliance/monitoring locations noted above, as appropriate.
- [4] Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Board, or the Regional Board, and that may be reasonably controlled. Based on the record in these proceedings, controlling temperature in the Delta utilizing reservoir releases does not appear to be reasonable, due to the distance of the Delta downstream of reservoirs and uncontrollable factors such as ambient air temperature, water temperatures in the reservoir releases, etc. For these reasons, the State Board considers reservoir releases to control water temperatures in the Delta a waste of water; therefore, the State Board will require a test of reasonableness before consideration of reservoir releases for such a purpose.

**Appendix H.4**

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**Water Quality Control Plan for the  
San Francisco Bay/Sacramento-San Joaquin Delta Estuary:  
Chapter II (Beneficial Uses) and Chapter III (Water Quality Objectives)**



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& DEVELOPMENT COMMISSION



STATE OF CALIFORNIA

*Pete Wilson, Governor*

**CALIFORNIA ENVIRONMENTAL  
PROTECTION AGENCY**

*James M. Strock, Secretary*

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## CHAPTER II. BENEFICIAL USES

The waters of the Bay-Delta Estuary serve a multitude of beneficial uses, both within the Estuary and throughout the State. Historically, these beneficial uses have been classified under three broad categories: municipal and industrial, agricultural, and fish and wildlife.

This chapter sets forth the beneficial uses established for the Bay-Delta Estuary which are to be protected by this plan. These uses, and a summary of each, are presented below. These uses are unchanged from the 1991 Bay-Delta Plan; however, nonsubstantive changes to the definitions of the uses have been made to ensure consistency with the SWRCB's current policy and uniform direction to the RWQCBs.

Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Industrial Service Supply (IND) - 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, and oil well repressurization.

Industrial Process Supply (PROC) - Uses of water for industrial activities that depend primarily on water quality.

Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Ground Water Recharge (GWR) - Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Navigation (NAV) - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Water Contact Recreation (REC-1) - 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.

Non-Contact Water Recreation (REC-2) - 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, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Shellfish Harvesting (SHELL) - 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 sports purposes.

Commercial and Sport Fishing (COMM) - 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.

Warm Freshwater Habitat (WARM) - Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Migration of Aquatic Organisms (MIGR) - Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Estuarine Habitat (EST) - 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, shorebirds).

Wildlife Habitat (WILD) - Uses of water that support estuarine 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.

Rare, Threatened, or Endangered Species (RARE) - 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 being rare, threatened, or endangered.

## CHAPTER III. WATER QUALITY OBJECTIVES

This chapter establishes water quality objectives which, in conjunction with the water quality objectives for the Bay-Delta Estuary that are included in other SWRCB-adopted water quality control plans and in the water quality control plans for the Central Valley and San Francisco Bay basins, when implemented, will: (1) provide reasonable protection of municipal, industrial, and agricultural beneficial uses; (2) provide reasonable protection of fish and wildlife beneficial uses at a level which stabilizes or enhances the conditions of aquatic resources; and (3) prevent nuisance. These water quality objectives are established to attain the highest water quality which is reasonable, considering all demands being made on the waters of the Estuary.

The water quality objectives in this plan apply to the waters of the San Francisco Bay system and the legal Sacramento-San Joaquin Delta, as specified by the objectives. Tables 1, 2, and 3 contain the water quality objectives for the protection of municipal and industrial, agricultural, and fish and wildlife beneficial uses, respectively.

### A. Water Quality Objectives for Municipal and Industrial Beneficial Uses

The water quality objectives in Table 1 are included for the reasonable protection of the beneficial uses, MUN, IND, and PROC, from the effects of salinity intrusion. These municipal and industrial objectives also provide protection for the beneficial uses of REC-1, REC-2, and GWR. These objectives are unchanged from the 1991 Bay-Delta Plan.

### B. Water Quality Objectives for Agricultural Beneficial Uses

The water quality objectives in Table 2 are included for the reasonable protection of the beneficial use, AGR, from the effects of salinity intrusion and agricultural drainage in the western, interior, and southern Delta. With the exception of the effective date of the salinity objectives for the southern Delta stations on Old River, these objectives are unchanged from the 1991 Bay-Delta Plan.

### C. Water Quality Objectives for Fish and Wildlife Beneficial Uses

The objectives for the protection of fish and wildlife beneficial uses are established for the following parameters: dissolved oxygen, salinity (expressed as electrical conductivity), Delta outflow, river flows, export limits, and Delta Cross Channel gate operation. Unlike water quality objectives for parameters such as dissolved oxygen, temperature, and toxic chemicals, which have threshold levels beyond which adverse impacts to the beneficial uses occur, there are no defined threshold conditions that can be used to set objectives for flows and project operations. Instead, the available information indicates that a continuum of protection exists. Higher flows and lower exports provide greater protection for the bulk of estuarine resources up to the limit of unimpaired conditions. Therefore, these objectives must be set based on a subjective determination of the reasonable needs of all of the consumptive and

nonconsumptive demands on the waters of the Estuary. As the long-term planning process for the Estuary, cited in the Framework Agreement, is developed and implemented, these objectives will be evaluated and modified, as necessary, to provide a level of protection predicated on more optimal physical facilities and management actions.

The water quality objectives in Table 3 are included for the reasonable protection of the following beneficial uses: EST, COLD, WARM, MIGR, SPWN, WILD, and RARE. These fish and wildlife beneficial uses also provide protection for the beneficial uses of SHELL, COMM, and NAV. The objectives in Table 3, together with the program of implementation and the requirements of other water quality control plans and policies, provide comprehensive protection for the fish and wildlife beneficial uses in the Estuary. These objectives replace the objectives for fish and wildlife in the 1978 Delta Plan and the 1991 Bay-Delta Plan.

A dissolved oxygen objective is included to protect fall-run salmon migration in the lower San Joaquin River. This objective is unchanged, with the exception of including a provision for a compliance schedule, from the 1991 Bay-Delta Plan.

Salinity objectives for the lower San Joaquin River are included to protect striped bass spawning habitat. Salinity objectives for the managed portions of the Suisun Marsh are included for the protection of channel and soil water salinities which affect the vegetative composition of the marshlands. These objectives are based on standards in D-1485 and the Suisun Marsh Preservation Agreement (SMPA) among the DWR, USBR, DFG, and Suisun Resource Conservation District (SRCD). A narrative objective for the brackish tidal marshes of Suisun Bay is included to protect the remnant tidal marshes.

Delta outflow objectives are included for the protection of estuarine habitat for anadromous fishes and other estuarine-dependent species. Sacramento and San Joaquin river flow objectives are included to provide attraction and transport flows and suitable habitat for various life stages of aquatic organisms, including Delta smelt and chinook salmon. A narrative objective for salmon protection is included to ensure increased natural production of salmon.

Objectives for export limits are included to protect the habitat of estuarine-dependent species by reducing the entrainment of various life stages by the major export pumps in the southern Delta. An objective for closure of the Delta Cross Channel gates is included to reduce the diversion of aquatic organisms into the interior Delta where they are more vulnerable to entrainment by the major export pumps and local agricultural diversions.

TABLE 1

**WATER QUALITY OBJECTIVES FOR  
MUNICIPAL AND INDUSTRIAL BENEFICIAL USES**

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT)	WATER YEAR TYPE [2]	TIME PERIOD	VALUE
Contra Costa Canal at Pumping Plant #1 -or- San Joaquin River at Antioch Water Works Intake	C-5 (CHCCC06)  D-12 (near) (RSAN007)	Chloride ( $Cl^-$ )	Maximum mean daily 150 mg/l $Cl^-$ for at least the number of days shown during the Calendar Year. Must be provided in intervals of not less than two weeks duration. (Percentage of Calendar Year shown in parenthesis)	W AN BN D C	No. of days each Calendar Year $\leq$ 150 mg/l $Cl^-$	240 (66%) 190 (52%) 175 (48%) 165 (45%) 155 (42%)
Contra Costa Canal at Pumping Plant #1 -and- West Canal at mouth of Clifton Court Forebay -and- Delta-Mendota Canal at Tracy Pumping Plant -and- Barker Slough at North Bay Aqueduct Intake -and- Cache Slough at City of Vallejo Intake [3]	C-5 (CHCCC06)  C-9 (CHWST0)  DMC-1 (CHDMC004)  —— (SLBAR3)  C-19 (SLCCH16)	Chloride ( $Cl^-$ )	Maximum mean daily (mg/l)	All	Oct-Sep	250

[1] River Kilometer Index station number.

[2] The Sacramento Valley 40-30-30 water year hydrologic classification index (see page 23) applies for determinations of water year type.

[3] The Cache Slough objective to be effective only when water is being diverted from this location.

TABLE 2

WATER QUALITY OBJECTIVES FOR  
AGRICULTURAL BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	& VALUE
<b>WESTERN DELTA</b>						
Sacramento River at Emmaton	D-22 (RSAC092)	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily EC (mmhos/cm)		0.45 EC	EC from date shown to Aug 15 [4]
					April 1 to date shown	Aug 15 [4]
				W	Aug 15	—
				AN	Jul 1	0.63
				BN	Jun 20	1.14
				D	Jun 15	1.67
C	—	2.78				
San Joaquin River at Jersey Point	D-15 (RSAN018)	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily EC (mmhos/cm)		0.45 EC	EC from date shown to Aug 15 [4]
					April 1 to date shown	Aug 15 [4]
				W	Aug 15	—
				AN	Aug 15	—
				BN	Jun 20	0.74
				D	Jun 15	1.35
C	—	2.20				
<b>INTERIOR DELTA</b>						
South Fork Mokelumne River at Terminous	C-13 (RSMKL08)	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily EC (mmhos/cm)		0.45 EC	EC from date shown to Aug 15 [4]
					April 1 to date shown	Aug 15 [4]
				W	Aug 15	—
				AN	Aug 15	—
				BN	Aug 15	—
				D	Aug 15	—
C	—	0.54				
San Joaquin River at San Andreas Landing	C-4 (RSAN032)	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily EC (mmhos/cm)		0.45 EC	EC from date shown to Aug 15 [4]
					April 1 to date shown	Aug 15 [4]
				W	Aug 15	—
				AN	Aug 15	—
				BN	Aug 15	—
				D	Jun 25	0.58
C	—	0.87				
<b>SOUTHERN DELTA</b>						
San Joaquin River at Airport Way Bridge, Vernalis -and- San Joaquin River at Brandt Bridge site -and- Old River near Middle River [5] -and- Old River at Tracy Road Bridge [5]	C-10 (RSAN112) C-6 (RSAN073) C-8 (ROLD69) P-12 (ROLD59)	Electrical Conductivity (EC)	Maximum 30-day running average of mean daily EC (mmhos/cm)	All	Apr-Aug	0.7
					Sep-Mar	1.0
					-or-	
If a three-party contract has been implemented among the DWR, USBR, and SDWA, that contract will be reviewed prior to implementation of the above and, after also considering the needs of other beneficial uses, revisions will be made to the objectives and compliance/monitoring locations noted, as appropriate.						
<b>EXPORT AREA</b>						
West Canal at mouth of Clifton Court Forebay -and- Delta-Mendota Canal at Tracy Pumping Plant	C-9 (CHWST0) DMC-1 (CHDMC004)	Electrical Conductivity (EC)	Maximum monthly average of mean daily EC (mmhos/cm)	All	Oct-Sep	1.0

[1] River Kilometer Index station number.

[2] Determination of compliance with an objective expressed as a running average begins on the last day of the averaging period. If the objective is not met on the last day of the averaging period, all days in the averaging period are considered out of compliance.

[3] The Sacramento Valley 40-30-30 water year hydrologic classification index (see page 23) applies for determinations of water year type.

[4] When no date is shown, EC limit continues from April 1.

[5] The EC objectives shall be implemented at this location by December 31, 1997.

TABLE 3

WATER QUALITY OBJECTIVES FOR  
FISH AND WILDLIFE BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	VALUE
<b>DISSOLVED OXYGEN</b>						
San Joaquin River between Tumer Cut & Stockton	(RSAN050-RSAN061)	Dissolved Oxygen (DO)	Minimum DO (mg/l)	All	Sep-Nov	6.0 [4]
<b>SALMON PROTECTION</b>						
			narrative		Water quality conditions shall be maintained, together with other measures in the watershed, sufficient to achieve a doubling of natural production of chinook salmon from the average production of 1967-1991, consistent with the provisions of State and federal law.	
<b>SAN JOAQUIN RIVER SALINITY</b>						
San Joaquin River at and between Jersey Point and Prisoners Point [5]	D-15 (RSAN018) -and- D-29 (RSAN038)	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily EC (mmhos/cm)	W,AN,BN,D	Apr-May	0.44 [6]
<b>EASTERN SUISUN MARSH SALINITY</b>						
Sacramento River at Collinsville -and- Montezuma Slough at National Steel -and- Montezuma Slough near Beldon Landing	C-2 (RSAC081) S-64 (SLMZU25) S-49 (SLMZU11)	Electrical Conductivity (EC)	Maximum monthly average of both daily high tide EC values (mmhos/cm), or demonstrate that equivalent or better protection will be provided at the location.	All	Oct Nov-Dec Jan Feb-Mar Apr-May	19.0 15.5 12.5 8.0 11.0
<b>WESTERN SUISUN MARSH SALINITY</b>						
Chadbourne Slough at Sunrise Duck Club -and- Suisun Slough, 300 feet south of Volanti Slough -and- Cordelia Slough at Ibis Club -and- Goodyear Slough at Morrow Island Clubhouse -and- Water supply intakes for waterfowl management areas on Van Sickle and Chipps islands	S-21 [7] (SLCBN1) S-42 [8] (SLSUS12) S-97 [8] (SLCRD06) S-35 [8] (SLGYR03) No locations specified	Electrical Conductivity (EC)	Maximum monthly average of both daily high tide EC values (mmhos/cm), or demonstrate that equivalent or better protection will be provided at the location.	All but deficiency period [9]	Oct Nov Dec Jan Feb-Mar Apr-May Oct Nov Dec-Mar Apr May	19.0 16.5 15.5 12.5 8.0 11.0 19.0 16.5 15.6 14.0 12.5
<b>BRACKISH TIDAL MARSHES OF SUISUN BAY</b>						
			narrative			[10]

TABLE 3

WATER QUALITY OBJECTIVES FOR  
FISH AND WILDLIFE BENEFICIAL USES

(continued)

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI) [1]	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	VALUE
<b>DELTA OUTFLOW</b>						
		Net Delta Outflow Index (NDOI) [11]	Minimum monthly average [12] NDOI (cfs)	All	Jan	4,500 [13]
				All	Feb-Jun	[14]
				W,AN	Jul	8,000
				BN		6,500
				D		5,000
				C		4,000
				W,AN,BN	Aug	4,000
				D		3,500
				C		3,000
				All	Sep	3,000
				W,AN,BN,D	Oct	4,000
				C		3,000
				W,AN,BN,D	Nov-Dec	4,500
				C		3,500
<b>RIVER FLOWS</b>						
Sacramento River at Rio Vista	D-24 (RSAC101)	Flow rate	Minimum monthly average [15] flow rate (cfs)	All	Sep	3,000
				W,AN,BN,D	Oct	4,000
				C		3,000
				W,AN,BN,D	Nov-Dec	4,500
				C		3,500
San Joaquin River at Airport Way Bridge, Vernalis	C-10 (RSAN112)	Flow rate	Minimum monthly average [16] flow rate (cfs) [17]	W,AN	Feb-Apr 14	2,130 or 3,420
				BN,D	and	1,420 or 2,280
				C	May 16-Jun	710 or 1,140
				W	Apr 15-	7,330 or 8,620
				AN	May 15 [18]	5,730 or 7,020
				BN		4,620 or 5,480
				D		4,020 or 4,880
				C		3,110 or 3,540
				All	Oct	1,000 [19]
<b>EXPORT LIMITS</b>						
		Combined export rate [20]	Maximum 3-day running average (cfs)	All	Apr 15- May 15 [21]	[22]
			Maximum percent of Delta inflow diverted [23] [24]	All	Feb-Jun	35% Delta inflow [25]
				All	Jul-Jan	65% Delta inflow
<b>DELTA CROSS CHANNEL GATES CLOSURE</b>						
Delta Cross Channel at Walnut Grove	—	Closure of gates	Close gates	All	Nov-Jan	[26]
					Feb-May 20	----
					May 21- Jun 15	[27]

### Table 3 Footnotes

- [1] River Kilometer Index station number.
- [2] Determination of compliance with an objective expressed as a running average begins on the last day of the averaging period. If the objective is not met on the last day of the averaging period, all days in the averaging period are considered out of compliance.
- [3] The Sacramento Valley 40-30-30 Water Year Hydrologic Classification Index (see page 23) applies unless otherwise specified.
- [4] If it is infeasible for a waste discharger to meet this objective immediately, a time extension or schedule of compliance may be granted, but this objective must be met no later than September 1, 2005.
- [5] Compliance will be determined at Jersey Point (station D15) and Prisoners Point (station D29).
- [6] This standard does not apply in May when the best available May estimate of the Sacramento River Index for the water year is less than 8.1 MAF at the 90% exceedence level. [Note: The Sacramento River Index refers to the sum of the unimpaired runoff in the water year as published in the DWR Bulletin 120 for the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total unimpaired inflow to Oroville Reservoir; Yuba River at Smartville; and American River, total unimpaired inflow to Folsom Reservoir.]
- [7] The effective date for objectives for this station is October 1, 1995.
- [8] The effective date for objectives for this station is October 1, 1997.
- [9] A deficiency period is: (1) the second consecutive dry water year following a critical year; (2) a dry water year following a year in which the Sacramento River Index (described in footnote 6) was less than 11.35; or (3) a critical water year following a dry or critical water year.
- [10] Water quality conditions sufficient to support a natural gradient in species composition and wildlife habitat characteristic of a brackish marsh throughout all elevations of the tidal marshes bordering Suisun Bay shall be maintained. Water quality conditions shall be maintained so that none of the following occurs: (a) loss of diversity; (b) conversion of brackish marsh to salt marsh; (c) for animals, decreased population abundance of those species vulnerable to increased mortality and loss of habitat from increased water salinity; or (d) for plants, significant reduction in stature or percent cover from increased water or soil salinity or other water quality parameters.
- [11] Net Delta Outflow Index (NDOI) is defined on page 25.
- [12] For the May-January objectives, if the value is less than or equal to 5,000 cfs, the 7-day running average shall not be less than 1,000 cfs below the value; if the value is greater than 5,000 cfs, the 7-day running average shall not be less than 80% of the value.
- [13] The objective is increased to 6,000 cfs if the best available estimate of the Eight River Index for December is greater than 800 TAF. [Note: The Eight River Index refers to the sum of the unimpaired runoff as published in the DWR Bulletin 120 for the following locations: Sacramento River flow at Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River flow at Smartville; American River, total inflow to Folsom Reservoir; Stanislaus River, total inflow to New Melones Reservoir; Tuolumne River, total inflow to Don Pedro Reservoir; Merced River, total inflow to Exchequer Reservoir; and San Joaquin River, total inflow to Millerton Lake.]

- [14] The minimum daily NDOI shall be 7,100 cfs for this period, calculated as a 3-day running average. This requirement is also met if either the daily average or 14-day running average EC at the confluence of the Sacramento and the San Joaquin rivers is less than or equal to 2.64 mmhos/cm (Collinsville station C2). If the best available estimate of the Eight River Index (described in footnote 13) for January is more than 900 TAF, the daily average or 14-day running average EC at station C2 shall be less than or equal to 2.64 mmhos/cm for at least one day between February 1 and February 14; however, if the best available estimate of the Eight River Index for January is between 650 TAF and 900 TAF, the operations group established under the Framework Agreement shall decide whether this requirement will apply, with any disputes resolved by the CALFED policy group. If the best available estimate of the Eight River Index for February is less than 500 TAF, the standard may be further relaxed in March upon the recommendation of the operations group established under the Framework Agreement, with any disputes resolved by the CALFED policy group. The standard does not apply in May and June if the best available May estimate of the Sacramento River Index (described in footnote 6) for the water year is less than 8.1 MAF at the 90% exceedence level. Under this circumstance, a minimum 14-day running average flow of 4,000 cfs is required in May and June. Additional Delta outflow objectives are contained in Table A on page 26.
- [15] The 7-day running average shall not be less than 1,000 cfs below the monthly objective.
- [16] Partial months are averaged for that period. For example, the flow rate for April 1-14 would be averaged over 14 days. The 7-day running average shall not be less than 20% below the flow rate objective, with the exception of the April 15-May 15 pulse flow period when this restriction does not apply.
- [17] The water year classification will be established using the best available estimate of the 60-20-20 San Joaquin Valley Water Year Hydrologic Classification (see page 24) at the 75% exceedence level. The higher flow objective applies when the 2 ppt isohaline (measured as 2.64 mmhos/cm surface salinity) is required to be at or west of Chipps Island.
- [18] This time period may be varied based on real-time monitoring. One pulse, or two separate pulses of combined duration equal to the single pulse, should be scheduled to coincide with fish migration in San Joaquin River tributaries and the Delta. The time period for this 31-day flow requirement will be determined by the operations group established under the Framework Agreement.
- [19] Plus up to an additional 28 TAF pulse/attraction flow during all water year types. The amount of additional water will be limited to that amount necessary to provide a monthly average flow of 2,000 cfs. The additional 28 TAF is not required in a critical year following a critical year. The pulse flow will be scheduled by the operations group established under the Framework Agreement.
- [20] Combined export rate for this objective is defined as the Clifton Court Forebay inflow rate (minus actual Byron-Bethany Irrigation District diversions from Clifton Court Forebay) and the export rate of the Tracy pumping plant.
- [21] This time period may be varied based on real-time monitoring and will coincide with the San Joaquin River pulse flow described in footnote 18. The time period for this 31-day export limit will be determined by the operations group established under the Framework Agreement.
- [22] Maximum export rate is 1,500 cfs or 100% of 3-day running average of San Joaquin River flow at Vernalis, whichever is greater. This export restriction does not supersede the export restriction of 35% of Delta inflow. The more restrictive of these two objectives applies from April 15 to May 15. Variations to this maximum export rate are authorized if agreed to by the operations group established under the Framework Agreement. This flexibility is intended to result in no net water supply cost annually within the limits of the water quality and operational requirements of this plan. Variations may result from recommendations of agencies for protection of fish resources, including actions taken pursuant to the State and federal Endangered Species Act. Disputes within the operations group will be resolved by the CALFED policy group. Any agreement on variations will be effective immediately and will be presented to the Executive Director of the SWRCB. If the Executive Director does not object to the variations within 10 days, the variations will remain in effect.

- [23] Percent of Delta inflow diverted is defined on page 25. For the calculation of maximum percent Delta inflow diverted, the export rate is a 3-day running average and the Delta inflow is a 14-day running average, except when the CVP or the SWP is making storage withdrawals for export, in which case both the export rate and the Delta inflow are 3-day running averages.
- [24] The percent Delta inflow diverted values can be varied either up or down. Variations are authorized subject to the process described in footnote 22.
- [25] If the best available estimate of the Eight River Index (described in footnote 13) for January is less than or equal to 1.0 MAF, the export limit for February is 45% of Delta inflow. If the best available estimate of the Eight River Index for January is greater than 1.5 MAF, the February export limit is 35% of Delta inflow. If the best available estimate of the Eight River Index for January is between 1.0 MAF and 1.5 MAF, the export limit for February will be set by the operations group established under the Framework Agreement within the range of 35% to 45%. Disputes within the operations group will be resolved by the CALFED policy group.
- [26] For the November-January period, close Delta Cross Channel gates for up to a total of 45 days, as needed for the protection of fish. The timing of the gate closure will be determined by the operations group established under the Framework Agreement.
- [27] For the May 21-June 15 period, close Delta Cross Channel gates for a total of 14 days. The timing of the gate closure shall be based on the need for the protection of fish and will be determined by the operations group established under the Framework Agreement. Variations in the number of days of gate closure are authorized if agreed to by the operations group established under the Framework Agreement. Variations shall result from recommendations from agencies for the protection of fish resources, including actions taken pursuant to the State and federal Endangered Species Acts. The process for the approval of variations shall be similar to that described in footnote 22.

**FOOTNOTE 2 FOR TABLE 1 AND FOOTNOTE 3 FOR TABLES 2 AND 3**

**Sacramento Valley  
Water Year Hydrologic Classification**

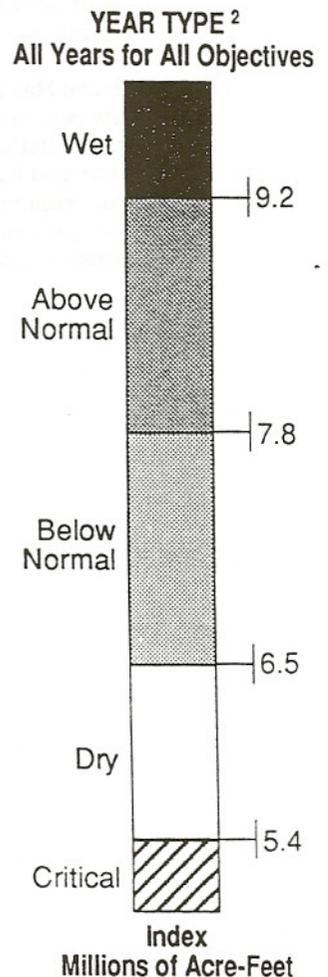
Year classification shall be determined by computation of the following equation:

$$\text{INDEX} = 0.4 * X + 0.3 * Y + 0.3 * Z$$

- Where: X = Current year's April – July Sacramento Valley unimpaired runoff  
 Y = Current October – March Sacramento Valley unimpaired runoff  
 Z = Previous year's index <sup>1</sup>

The Sacramento Valley unimpaired runoff for the current water year (October 1 of the preceding calendar year through September 30 of the current calendar year), as published in California Department of Water Resources Bulletin 120, is a forecast of the sum of the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River at Smartville; American River, total inflow to Folsom Reservoir. Preliminary determinations of year classification shall be made in February, March, and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

Classification	Index Millions of Acre-Feet (MAF)
Wet.....	Equal to or greater than 9.2
Above Normal .....	Greater than 7.8 and less than 9.2
Below Normal.....	Equal to or less than 7.8 and greater than 6.5
Dry.....	Equal to or less than 6.5 and greater than 5.4
Critical .....	Equal to or less than 5.4



<sup>1</sup> A cap of 10.0 MAF is put on the previous year's index (Z) to account for required flood control reservoir releases during wet years.

<sup>2</sup> The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.