

**Report to the Board of Directors  
of the Kern County Water Agency on Zones of Benefit  
for Fiscal Year 2020-21**



**August 2019**

# **ORGANIZATION**

## **Kern County Water Agency**

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## Introduction

The Kern County Water Agency (Agency) is authorized to set zones of benefit as a means of collecting assessments from areas within Kern County that benefit from the State Water Project (SWP). The zones of benefit assessments pay part of the Agency's obligation to the State of California (State) pursuant to the November 15, 1963 water supply contract (Master Contract) between the Agency and the State. The Master Contract is a take-or-pay contract requiring the Agency to pay for its full water supply amount regardless of the actual amount received in any given year. The Agency Act requires, among other things, that public hearings be held in order to establish zones of benefit. This report is Agency staff's presentation of information and recommendations to be considered by the Agency Board of Directors (Board) at the public hearing scheduled for September 27, 2018 regarding the setting of zones of benefit for the 2020-21 fiscal year. Zones of benefit are authorized by section 14.2 of the Agency Act (Statutes of 1961, Chapter 1003, as amended), which reads as follows:

*For the purpose of making payments pursuant to contracts entered into by the agency with the United States or the State, in accordance with the provisions of this act, the agency, in addition to the revenues and taxes otherwise provided for in this act, may make assessments apportioned in accordance with the benefits and, for this purpose, may establish zones of benefit which reflect the degree of benefit resulting to each zone from such contract or contracts. In the ascertainment of the benefits derived through such contract or contracts, and in establishing zones of benefit, there shall be taken into account the following:*

- (a) Improvement in the underground water supply.*
- (b) The contribution to the underground water supply by water made available independently of the agency.*
- (c) The adequacy of the water supply made available independently of the agency.*
- (d) The prospective need for a water supply.*
- (e) Extractions from the underground water supply in excess of contributions.*
- (f) The economic impact resulting from the water supply made available under such contract or contracts; provided, that areas not receiving a surface water supply or an improvement in the underground water supply by reason of such contract or contracts shall not be assessed pursuant to this subsection (f) of Section 14.2.*

*No assessment shall be levied under this Section 14.2 unless the board by resolution declares that it intends to do so and that a public hearing will be held thereon at a specified day, hour and place where all interested persons may appear and be heard. This resolution shall be published by the agency pursuant to Section 6063 of the Government Code in a newspaper of general circulation in the agency. The hearing may be adjourned from time to time at the discretion of the board and at its conclusion the board shall declare the zones of benefit established, if any, and the assessment, if any, to be levied hereunder. Assessments made within zones of benefit pursuant to this Section 14.2 shall be levied on all taxable property within such zone of benefit on an ad valorem basis.*

## **Basis for Zones of Benefit Established Since 1983**

Before 1983, the zones of benefit for payment of the Agency's bill for SWP water (State Bill) consisted of one major zone covering most of the SWP service area (Zone 1) and a zone comprised of the Tehachapi-Cummings County Water District and the Tejon-Castac Water District (Zone 10).

In 1983, the Agency Board called for a review of the methodology for establishing Zones 1 and 10. After extensive studies, reports and hearings, the Agency Board concluded that it was reasonable to establish separate zones for differing benefits. A new process was set up and is described as follows:

- (1) The total zone of benefit obligation (State Bill less funds available for payment of the State Bill) would be divided equally into two parts. One part would consider economic benefits and the other part would consider the remaining factors pursuant to section 14.2.
- (2) One-half of the total obligation would be collected from a zone based on economic benefits (Zone 17).
- (3) The other half of the obligation would be collected from two zones; one consisting of the SWP service area overlying the groundwater basin (Zone 19) and another consisting of the remaining portion of the SWP service area within the San Joaquin Valley portion of the Agency (Zone 18). The allocation of collections between these two zones would be in proportion to the amount of zone of benefit support provided to each zone. This amount should be split between the two zones of benefit in proportion to their respective zone of benefit support.

## **Application of Factors Considered in Section 14.2 of the Agency Act**

An evaluation of factors relevant to setting zones of benefit pursuant to the Master Contract between the Agency and the State for Fiscal Year 2020-21 are as follows:

### ***(a) Improvement in the underground water supply:***

All lands in the SWP service area overlying the Kern County Subbasin (Basin Number 5 -22.14, DWR Bulletin 118) within the San Joaquin Valley Groundwater Basin (groundwater basin) into which SWP water has been delivered since 1970 have received benefits, as evidenced by higher groundwater levels than would exist without the project. Without importation of surface water, the groundwater basin would be overdrawn substantially more than it is today.

SWP supplies and the existence of the California Aqueduct (constructed as part of the SWP) and the Cross Valley Canal make possible the coordinated operation of the SWP and the federal Central Valley Project (CVP). Coordinated operation of these projects, as well as the Kern River for direct use and recharge, has resulted in higher levels of groundwater than would have occurred absent participation in the SWP.

### ***(b) The contribution to the underground water supply by water made available independently of the Agency:***

Water districts in Kern County supplied by the CVP independently of the Agency and thus contributing to the groundwater supply are Arvin-Edison Water Storage District, Delano-Earlimart Irrigation District,

Shafter-Wasco Irrigation District, Southern San Joaquin Municipal Utility District and Kern-Tulare Water District. In addition, North Kern Water Storage District, north of Seventh Standard Road, stores water underground which is available to it from the Kern River as an offset for increased pumping when local runoff does not meet its full irrigation needs. Agency Member Units<sup>1</sup> also make use of Kern River supplies in addition to water received from the SWP.

***(c) The adequacy of the water supply made available independently of the Agency:***

The CVP contractors named in section (b) above have water supplies obtained independently of the Agency which, when considered in connection with a share in the groundwater basin and with effective precipitation, generally meet their consumptive use requirements. The areas of those CVP contractors, plus the area of the North Kern Water Storage District, are not recommended for inclusion in Agency zones of benefit because they have adequate water supplies independent of the Agency.

***(d) The prospective need for a water supply:***

The Member Units of the Agency and Improvement District No. 4 (ID4) had a prospective need for supplemental water at the time their contracts were negotiated, or when they were given an allocation of SWP water. Some of these districts were formed for the specific purpose of becoming Member Units. Their historical need for water and their prospective need for water in 2020-21 are set forth in Table 1. Other water districts in the San Joaquin Valley with contracts for CVP water or rights to Kern River water of sufficient quantity to satisfy their entire demands do not have a prospective need for SWP water.

***(e) Extractions from the underground water supply in excess of contributions:***

One of the objectives of importing SWP water into Kern County is to reduce groundwater basin overdraft. Only two districts had been formed outside of the CVP service area prior to 1958, namely Buena Vista Water Storage District and the original North Kern Water Storage District. These, together with the area now within Kern Delta Water District, had entitlements to Kern River water under court decrees and agreements.

The remainder of the Kern County agricultural and urban water users were dependent upon pumping groundwater from the groundwater basin, which receives relatively small average annual recharge and effective precipitation from natural sources. Thus, agriculture is largely dependent on an imported water supply. The benefits of the SWP in contributing to reducing groundwater overdraft are widely spread throughout the groundwater basin.

***(f) The economic impact resulting from the water supply made available under such contract or contracts provided that areas not receiving a surface water supply or an improvement in the underground water supply by reason of such contract or contracts shall not be assessed pursuant to this subsection (f) of section 14.2.***

During previous zone of benefit hearings, the Agency received information showing that there are substantial economic benefits in Kern County from the importation of SWP water. The Agency's economic consultant, Highland Economics, has reviewed this and other updated information and has

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<sup>1</sup> Belridge Water Storage District, Berrenda Mesa Water District, Buena Vista Water Storage District, Cawelo Water District, Henry Miller Water District, Kern Delta Water District, Lost Hills Water District, Rosedale-Rio Bravo Water Storage District, Semitropic Water Storage District, Tehachapi-Cummings County Water District, Tejon-Castac Water District, West Kern Water District and Wheeler Ridge-Maricopa Water Storage District.

concluded that the importation of SWP water continues to generate substantial economic benefits. The benefits are of a community-wide nature as the result of increased agricultural production, increased employment and increased business activity throughout most segments of the economy since execution of the Master Contract and are in excess of that which would have occurred without the project. The community-wide benefits accrue to all the geographic areas that receive a surface water supply or an improvement in underground water supply from the use of SWP water.

## **Water Supply Required in 2021**

Between 1968 and 1989, the Agency was on a build-up schedule of SWP Table A water (Table A)<sup>2</sup> and reached its maximum annual Table A amount of 1,153,400 acre-feet (af) in 1990. Member Unit Total Table 1 contract entitlements correspondingly reached a maximum of 1,253,400 af in 1990, consisting of 1,153,400 af of Table 1 firm water and 100,000 af of surplus water. Beginning in 1997, some of the Agency's Member Units permanently relinquished a sum total of 40,670 af of agricultural Table 1 firm water in exchange for the Kern Water Bank as part of the Monterey Agreement's implementation (Amendment No. 24 to the Agency's Master Contract). Therefore, the 1997 total of all Member Units' Table 1 firm water and the Agency's Table A was reduced to 1,112,730 af.

Additionally, under the Monterey Amendment, a total of 130,000 af of the Agency's agricultural Table A was transferred to other urban agencies. Four Member Units permanently transferred a total of 130,000 af, of which the last transfer of 16,000 af became effective in 2010. The Agency's total Table A is currently 982,730 af. For the year 2021, the Agency will order for Member Units their full Table 1 firm water of 982,730 af and to the extent available, at least 94,098 af of Article 21 water, or more.

Prior to the Monterey Amendment, the Member Unit contracts contained a total of 100,000 af of water formerly called "surplus." This water is still referenced in the Member Unit contracts and is used as a basis for the allocation of Article 21 water which replaced surplus water under the Monterey Amendment. Because of the above-mentioned permanent transfers, the total former "surplus" water is now 94,098 af.

The historical deliveries of SWP water to Kern County have been the amounts of Table A, surplus and other water made available by the SWP. Every effort is made to use or conserve this water. In dry years, the amount of water available may be less than the amounts requested by the Member Units.

A total of approximately 38.5 million af of SWP water has been delivered through 2018 under the Agency's Master Contract with the State. The actual deliveries of SWP water to Kern County from 1968 through 2018, estimated 2019 deliveries and requests for 2020 and 2021, are set forth in Table 1, "Annual Deliveries of Firm and Surplus SWP Water."

## **Water Costs**

The cost of SWP water varies annually based on a number of factors, including the administration, operations and maintenance of SWP facilities, the implementation of regulatory requirements and energy rates. To prepare an estimate of anticipated SWP costs, the Agency compares each component of previous State Bills to determine an average increase or decrease in costs. Additionally, information

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<sup>2</sup> Table A water, also referred to as Table 1 firm water, is the Agency's allocation of SWP water as defined in Table A of its Master Contract with the State. A Member Units' Total Table 1 water is the sum of firm and surplus water.

regarding upcoming SWP maintenance costs, project implementation, energy rates and other variables are factored into the estimate. The estimate assumes full delivery of Agency SWP Table A of 982,730 af.

Table 2 shows the 2020 initial State Bill and the estimated 2021 State Bill to the Agency by component. The 2021 SWP costs shown in Table 2 represent the estimated total cost that the Agency will have to pay in 2021 for requested SWP water. The estimated 2021 State Bill reflects anticipated routine increases in operational expenses associated with the delivery of water supplies, as well as regulatory requirements related to the implementation of the 2008 U.S. Fish & Wildlife Service and 2009 National Marine Fisheries Service Biological Opinions (NMFS). The Delta Conveyance project cost component assumes the Agency's Improvement District No. 4 will participate in the project and that near-term expenses will be limited to project development. Based on anticipated Member Unit participation in the Delta Conveyance project, the estimated 2021 State Bill assumes Zones of Benefit Nos. 17, 18 and 19 will not incur project costs. Additionally, the Agency has included a "Reserves" component to address near- and long-term volatility in the State Bill. In the near-term, uncertainty in the State Bill, includes, but is not limited to, ongoing reconciliation and reimbursement of the Oroville Dam spillway emergency operations and repair expenses, repairs to the California Aqueduct to address subsidence and participation in the Delta Conveyance project. In the long-term, uncertainty in the State Bill includes, but is not limited to, the SWP's transition to pay-as-you-go cost accounting (commonly referred to as Pay-go), implementation of new Biological Opinions for the SWP from NMFS and the California Department of Fish and Wildlife, long-term operation and maintenance of Oroville Dam following completion of an ongoing comprehensive needs assessment and repairs to the California Aqueduct to address subsidence.

Table 3 shows the estimated revenue sources and estimated costs for Member Unit Total Table 1 water in 2021. The basic obligation of each Member Unit shown in Table 3 is based on delivering 100 percent of Total Table 1 water through the Dos Amigos pumping plant. The incremental Variable Operation, Maintenance, Power and Replacement (OMP&R) costs for pumping plants south of Dos Amigos are based on present requests for water made by the Member Units, which are less than full Table 1 water for those Member Units using such pumping plants. Incremental Variable OMP&R charges, however, are charged to the Member Units based on actual deliveries through pumping plants beyond Dos Amigos pumping plant and do not affect zone of benefit requirements.

## **State Water Project Benefits**

All of the SWP service area (Zone of Benefit No. 17-21 – see Map No. 1) will receive either a surface supply or an improvement in underground supplies by reason of the Master Contract. This area will also receive economic benefits during the 2020-21 fiscal year by reason of the Master Contract.

### ***Economic Benefits***

The historic maximum irrigated acreage in the San Joaquin Valley portion of Kern County was about 973,000 acres (in 1984), with 617,300 of these acres located in water districts receiving SWP water through the Agency.

In 2018, total water delivered to Kern County from the SWP was approximately 53 percent of the Agency's total of agricultural, municipal and industrial Table A amount. According to the 2017 Kern County Agricultural Crop Report, total harvested acreage in the County for 2017 was estimated at



884,571 acres, with the total value of farm production, including crop and animal products, reaching \$7.25 billion.<sup>3</sup>

Irrigated acreage within the Member Units totaled 643,516 acres in 2017, with production value reaching an estimated \$4.5 billion. About 317,080 of these acres, producing an estimated \$2.32 billion in crop value, would not have been developed absent the SWP. The production on the 317,080 irrigated acres indirectly supported an economic output of \$1.45 billion, resulting in a total output impact of \$3.77 billion associated with the Master Contract. In 2017, the 317,080 irrigated acres attributed to the Master Contract directly accounted for about 19,900 full and part-time jobs and indirectly (mainly related service industries) supported another 7,100 jobs, for a total employment impact of about 27,000 jobs.

### ***Water Supply Benefits***

Those lands in the SWP service area that overlie the groundwater basin (Zone of Benefit 19-21 – see Map No. 3) receive an improvement in their groundwater supplies by reason of the Master Contract which benefits the entire area. Due to the ability to use groundwater as an alternative source, the prospective need for surface water for the lands overlying the groundwater basin is different from that of the lands that do not overlie the groundwater basin.

In 1970, the Member Units overlying the groundwater basin began substituting imported SWP water for groundwater. In addition, there have been many coordinated efforts to bring SWP water into the groundwater basin by means of special recharge, exchange and banking projects under the Agency's Master Contract. For example, in 1979 the Agency and water districts started a coordinated effort that resulted in the recharge of approximately 201,000 af. These practices have continued since 1979 and have resulted in a net total of 2.2 million af of SWP water being recharged through 2018. In addition, approximately 94,000 af of SWP water have been used for overdraft correction in the Kern Fan banking projects.

Net SWP deliveries into Zone of Benefit No. 19 have totaled about 23 million af since 1970.<sup>4</sup> Several types of pump lift benefits have resulted from the importation of SWP water since 1970. One benefit results from the substitution of SWP water for groundwater for irrigation. About 79.6 feet of lift benefit has resulted from this; i.e., the groundwater surface would have been 79.6 feet lower than it now is. In calculating this benefit, only lands that would have developed without the SWP were considered.

Return flows from the application of SWP water over the groundwater basin have resulted in a lift benefit of about 41.3 feet. Groundwater banking and replenishment programs have produced a lift benefit of about 9.5 feet. This type of benefit fluctuates because of recharge in wet years and withdrawals in dry years. The year 2018 resulted in an increase in the accumulated pump lift benefits from the previous year. The accumulated total of all the lift benefits from 1970 through 2018 is about 130.3 feet, averaged over the entire groundwater basin. The total annual savings in energy costs for pumping lifts to groundwater basin growers is estimated to be \$51.8 million. These savings represent a significant share of the groundwater basin growers' net income. The present value of savings over the remaining life of the project to groundwater basin growers is estimated to approach \$712 million. The direct increased household income due to the energy cost savings will result in increased county output and employment. The effect on county output of the increased net income is estimated at \$30.7 million, while the associated increased employment is estimated at approximately 260 full and part-time jobs annually.

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<sup>3</sup> At the time of this analysis, the 2018 Kern County Agricultural Crop Report was not yet published.

<sup>4</sup> Includes water delivered into Zone of Benefit No. 19 and occasional water delivered into the usable groundwater basin outside of Zone of Benefit No. 19

Those lands in Zone of Benefit 18-21 (see Map No. 2) which do not overlie a significant, usable groundwater basin receive a water supply benefit because of the prospective need for water. There is no improvement in the groundwater supply in this area by reason of the Master Contract, nor are there any significant contributions to or extractions from the groundwater supply. However, there is no adequate water supply available to this area independent of the Master Contract. Because of this lack of an alternative water supply, there is a much greater current and prospective need for a water supply in this non-groundwater area than in the lands overlying the groundwater basin.

## **2020-21 Proposed Zones of Benefit**

This section includes Agency staff recommendations on the 2020-21 assessments needed to pay the State Bill.

### ***Zone of Benefit In Lieu of Contract (Zone of Benefit No. 7)***

Improvement District No. 4 (ID4) is an improvement district of the Agency formed in 1971 to provide a supplemental water supply for portions of the metropolitan Bakersfield area through the importation of water from the SWP. The boundaries of Zone of Benefit No. 7 (Zone 7) are coterminous with ID4. Zone 7 raises revenue to pay for State costs for 83,845 af of SWP water to be delivered to this area, in lieu of a contract. This reservation and delivery of a water supply is a special benefit to the area. The degree of this special benefit is commensurate with the portion of the estimated 2021 State charges allocated to ID4 in accordance with the Agency's Member Unit contract payment policies.

The Agency allocates approximately 7.8 percent of the Table A water it receives from the SWP to ID4. If the California Department of Water Resources made a 100 percent allocation to SWP contractors, the Agency would receive 982,730 af from the SWP to allocate to its member unit districts of which 77,000 af would be allocated to ID4. According to the 2017 State Water Project Final Delivery Capability Report by the California Department of Water Resources<sup>5</sup>, the SWP can deliver on average 62 percent of the contracted amount which means that ID4 can expect to receive only 47,740 af. In addition, the maximum allocation that could be made is estimated to be 83 percent, or 63,910 af for ID4. ID4 has taken steps to secure additional long-term water supplies to make up for anticipated shortages from the SWP by purchasing SWP agricultural entitlement water from Wheeler Ridge-Maricopa Water Storage District (commencing in 1988) and participating in the Kern Water Bank (Zone 7 assessments are only used to pay the State or federal government for the cost of water supplies for ID4).

The estimated amount which the Agency will pay to the State during the 2020-21 fiscal year for the special water supply benefit for ID4 (Zone of Benefit No. 7-21) is \$15,084,000. The area to be included in Zone 7 is shown on Map No. 4.

### ***Determination of Zones of Benefit Nos. 17, 18 and 19 Assessments***

In accordance with the procedure adopted in 1983, the amount of \$14,069,000, or one-half of \$28,138,000 shown in Table 3, should be raised by a zone of benefit assessment levied throughout Zone of Benefit No. 17-21 in recognition of the economic benefits described earlier. The other one-half should be raised by assessments in zones reflecting water supply benefits in the SWP service areas.

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<sup>5</sup> California Department of Water Resources. (2017). *The State Water Project Final Delivery Capability Report 2017*. Sacramento, CA: California Department of Water Resources

Because of the differences in water supply characteristics, the Agency Board decided in 1983 that, for water supply benefits, the San Joaquin Valley portion of the SWP service area should be divided into two zones of benefit. The staff recommends this be done again this year. One zone of benefit, hereinafter described as Zone of Benefit No. 18-21, should include those lands that do not overlie the groundwater basin.

The other zone of benefit, hereinafter described as Zone of Benefit No. 19-21, should include the remaining lands that do overlie the groundwater basin. One-half of the \$28,138,000 referred to above should be raised by assessments in these Zones of Benefit No. 18-21 and 19-21. This amount should be split between the two zones of benefit in proportion to their respective zone of benefit support. This support is the difference between the SWP water costs for the area and the Member Units' payments for that area. The resulting amount to be raised in Zone of Benefit No. 18-21 should be \$1,603,000, and the resulting amount to be raised in Zone of Benefit No. 19-21 should be \$12,466,000.

Those areas overlying the groundwater basin that are within water districts that have contracted for CVP water and the north unit of the North Kern Water Storage District have contributed or will contribute to the underground water supply in the groundwater basin by water made available independently of the Agency. At this time, these areas do not receive a surface supply or an improvement in their underground supplies by reason of the Master Contract sufficient to levy a zone of benefit assessment and, therefore, are not included in any zone.

***Recommendations***

Based upon the figures shown in the various preceding tables, it is the recommendation of Agency staff that the Agency Board approve the following amounts in each of the proposed zones of benefit, unless good cause is shown at the Zone of Benefit hearing why the Agency Board should do otherwise:

<b>Zones of Benefit</b>	<b>Amount</b>
No. 7-21 (ID4 <sup>6</sup> )	\$15,084,000
No. 17-21 (Entire SWP service area)	\$14,069,000
No. 18-21 (Non-groundwater portion of San Joaquin Valley service area)	\$1,603,000
No. 19-21 (Groundwater portion of San Joaquin Valley service area)	\$12,466,000

Although zone of benefit amounts will be set at the end of the hearings, the amount actually collected may be less. Zone of benefit amounts for Fiscal Year 2020-21 are set using estimated charges for 2021 SWP Table A water. The zone of benefit amounts will be recomputed in July 2020, using actual charges for 2021 SWP Table A water and estimates of any anticipated supplemental billings. After considering this and other factors, the Agency's Board may recommend recomputed 2020-21 zone of benefit amounts to actually be collected by the County of Kern.

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<sup>6</sup> In lieu of contract payments.

## **Tables**

**Table 1. Annual Deliveries of Table A and Surplus SWP Water**

Year	KCWA Contract Table A (af)	Table A Deliveries (af) <sup>(1)</sup>	Misc. Table A & Special Purchase Deliveries <sup>(2)</sup> (af)	Surplus Water Deliveries <sup>(3)</sup> (af)	Total SWP Deliveries <sup>(4)</sup> (af)
1968	46,600	45,743	0	81,641	127,384
1969	95,700	95,700	0	45,565	141,265
1970	145,100	133,331	0	71,303	204,634
1971	190,300	190,300	0	169,851	360,151
1972	270,700	270,700	0	220,081	490,781
1973	310,500	310,500	0	194,743	505,243
1974	347,700	347,000	0	299,433	646,433
1975	385,500	385,500	25,320	410,820	821,640
1976	432,800	432,800	6,450	442,150	881,400
1977	483,600	191,307	241,530	0	432,837
1978	534,300	527,300	140,047	8,623	675,970
1979	583,900	583,900	182,146	524,247	1,290,293
1980	634,500	634,500	44,964	285,469	964,933
1981	691,400	691,400	170,865	478,316	1,340,581
1982	745,300	745,300	25,157	124,736	895,193
1983	805,100	594,507	605	0	595,112
1984	860,600	860,600	8,100	230,691	1,099,391
1985	915,000	888,896	14,029	180,824	1,083,749
1986	968,200	880,237	34,054	14,987	929,278
1987	1,023,500	969,905	6,171	52,048	1,028,124
1988	1,074,600	952,886	56,634	0	1,009,520
1989	1,112,300	1,027,387	118,675	0	1,146,062
1990	1,153,400	627,535	84,913	0	712,448
1991	1,153,400	33,122	58,796	0	91,918
1992	1,153,400	476,874	10,454	0	487,328
1993	1,153,400	1,117,774	91,879	0	1,209,653
1994	1,153,400	596,959	45,563	58,474	700,996
1995	1,153,400	1,039,260	20,412	59,671	1,119,343
1996	1,117,060	1,054,725	52,530	32,401	1,139,656
1997	1,112,730	1,030,399	5,800	26,088	1,062,287
1998	1,087,730	823,471	1,684	0	825,155
1999	1,087,730	1,033,361	45,360	58,241	1,136,962
2000	1,020,730	790,358	246,395	78,908	1,115,661
2001	1,000,949	372,560	110,201	23,233	505,994
2002	1,000,949	622,597	48,373	21,951	692,921
2003	1,000,949	843,648	37,141	27,891	908,680
2004	998,730	629,920	45,195	88,170	763,285
2005	998,730	892,385	40,188	466,224	1,398,797
2006	998,730	964,668	27,028	256,908	1,248,604
2007	998,730	542,846	24,578	103,121	670,545
2008	998,730	204,260	58,772	0	263,032
2009	998,730	178,954	141,456	0	320,410
2010	982,730	303,672	232,671	0	536,343
2011	982,730	748,166	207,031	194,119	1,149,316
2012	982,730	559,711	58,246	0	617,957
2013	982,730	313,310	127,811	0	441,121
2014	982,730	48,528	51,855	0	100,383
2015	982,730	196,546	157,552	0	354,098
2016	982,730	589,638	124,786	0	714,424
2017	982,730	927,592	8,670	114,112	1,050,374
2018	982,730	217,595	301,185	0	518,780
<b>Total</b>	<b>42,843,377</b>	<b>29,540,133</b>	<b>3,541,272</b>	<b>5,445,040</b>	<b>38,526,445</b>
2019	982,730	732,578	126,361	130,806	989,745 Est.
2020	982,730	982,730	0	94,098	1,076,828 Est.
2021	982,730	982,730	0	94,098	1,076,828 Est.

(1) Includes the annual Table A allocation less any SWP water carried over into the following year and SWP transfers out of the County.

(2) Includes purchases and transfers of SWP Table A, SWP carryover, DWR water purchase programs and DWR operational flood water; excludes SWP water transfers from other contractors for groundwater banking programs and

(3) Includes Surplus, Unscheduled Surplus and Article 21 water.

(4) Table excludes preconsolidation water, non-SWP water and Kern River Intertie releases.

**Table 2. Comparison of the 2020 and Estimated 2021 State Bills**

	2020	2021
	(\$)	(\$)
<b>Transportation Charge</b>		
Capital	13,492,525	17,907,000
Minimum	27,899,305	29,238,000
Water System Revenue Bond Surcharge	11,927,497	12,190,000
Power	30,226,038	30,616,000
<b>Delta Water Charge</b>		
Capital	32,333,430	35,405,000
Minimum	47,494,599	50,819,000
<b>Replacement Accounting System</b>	518,697	1,635,000
<b>Delta Conveyance<sup>(1)</sup></b>	0	2,500,000
<b>Reserves</b>	0	17,752,000
<b>Total</b>	<b>163,892,091</b>	<b>198,062,000</b>

(1) As discussed further in this report, Delta Conveyance costs apply to Zone of Benefit 7 only.

**Table 3. Estimated Basic Contract Obligations and Sources of Revenue for the 2021 SWP Water Service**

Member Unit		2021 Total Table 1 (af)	Basic Obligation (\$)	Special Adjustments (\$)	Incremental Variable OMP&R (\$)	Total Obligation (\$)
Berrenda Mesa WD		98,901	16,552,000		994,000	17,546,000
Lost Hills WD		119,110	18,761,000			18,761,000
Belridge WSD		121,508	20,574,000	(65,000) <sup>(1)</sup>		20,509,000
Semitropic ID <sup>(4)</sup>		179,762	21,189,000			21,189,000
Cawelo WD		45,000	5,909,000			5,909,000
Rosedale-Rio Bravo WSD		35,000	4,600,000			4,600,000
Buena Vista WSD		25,050	3,159,000			3,159,000
Kern Delta WD		30,000	3,939,000			3,939,000
Henry Miller WD		41,750	5,266,000			5,266,000
West Kern WD	-M&I	25,000	2,918,000			2,918,000
	-Ag	6,500	1,339,000			1,339,000
Wheeler Ridge-Maricopa WSD		231,293	39,652,000	572,000 <sup>(2)</sup>	3,768,000	43,992,000
Tehachapi-Cummings CWD	-Ag	5,000	936,000		248,000	1,184,000
	-M&I	15,000	2,000,000			2,000,000
Tejon-Castac WD	-M&I	3,749	296,000	2,000 <sup>(2)</sup>	32,000	330,000
	-Ag	2,000	720,000	41,000 <sup>(3)</sup>		761,000
Kern County Water Agency		8,360	1,416,000	22,000		1,438,000
<b>Sub-Total</b>		<b>992,983</b>	<b>149,226,000</b>	<b>572,000</b>	<b>5,042,000</b>	<b>154,840,000</b>
ID4 (ZOB No. 7)	-Ag	6,845	1,281,000	115,000 <sup>(2)</sup>		1,396,000
	-M&I	77,000	13,619,000	69,000 <sup>(3)</sup>		13,688,000
<b>Sub-Total</b>		<b>83,845</b>	<b>14,900,000</b>	<b>184,000</b>	<b>0</b>	<b>15,084,000</b>
<b>Grand Total</b>		<b>1,076,828</b>	<b>164,126,000</b>	<b>756,000</b>	<b>5,042,000</b>	<b>169,924,000</b>
					Funds Required from ZOB Nos. 17, 18 and 19	28,138,000
					<b>Total SWP Payment Estimate</b>	<b>\$198,062,000</b>

(1) Net cost to Belridge WSD for conversion of 15,000 af of Ag to M&I.

(2) Additional Aqueduct Capacity.

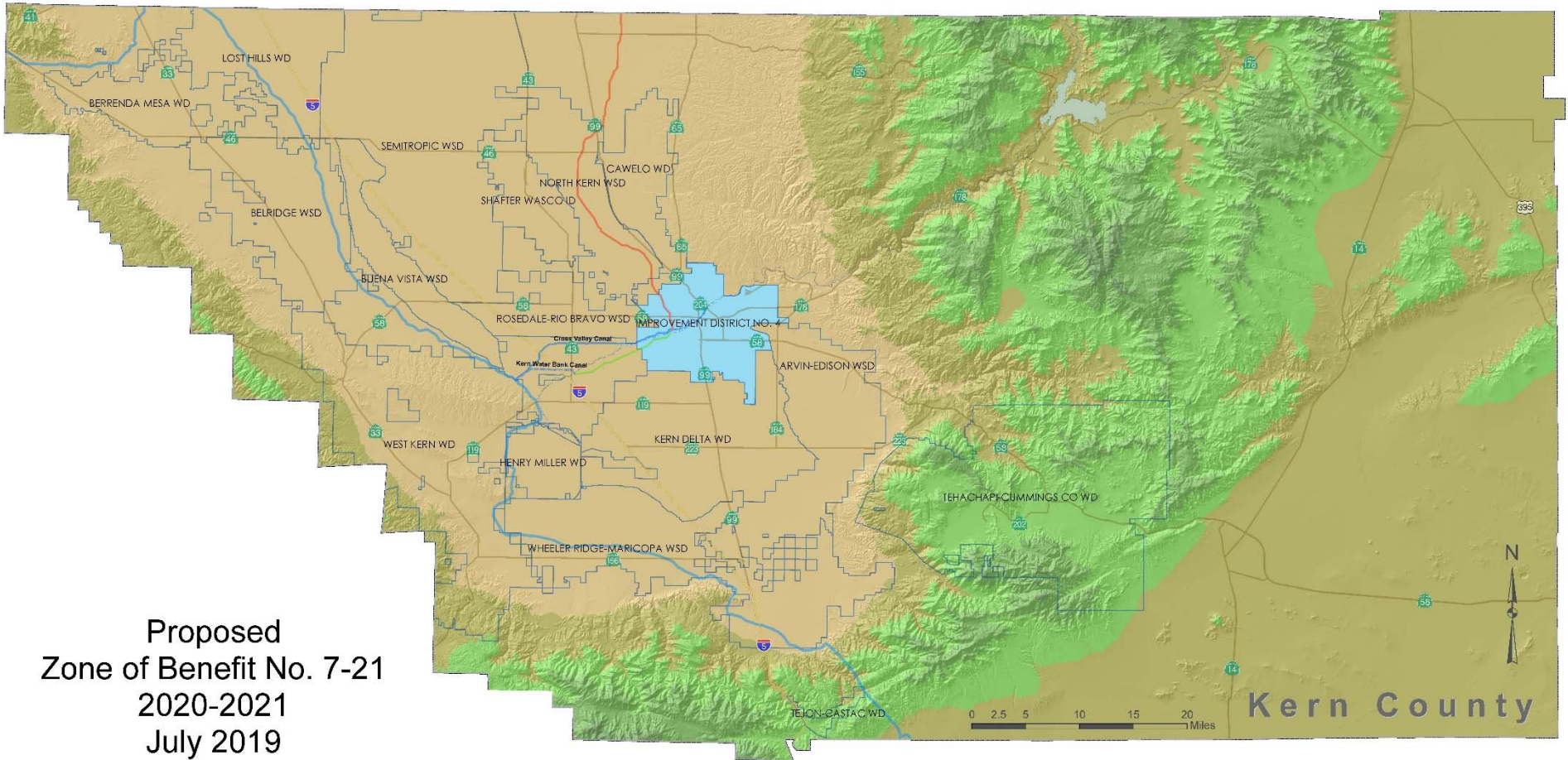
(3) Municipal Water Quality Investigation charges.

(4) Semitropic ID was formed in 1993. Prior to this, Semitropic's charges were divided between Semitropic WSD, Buttonwillow ID and Pond Poso ID.

## Maps



Map 1. Proposed Zone of Benefit No. 7

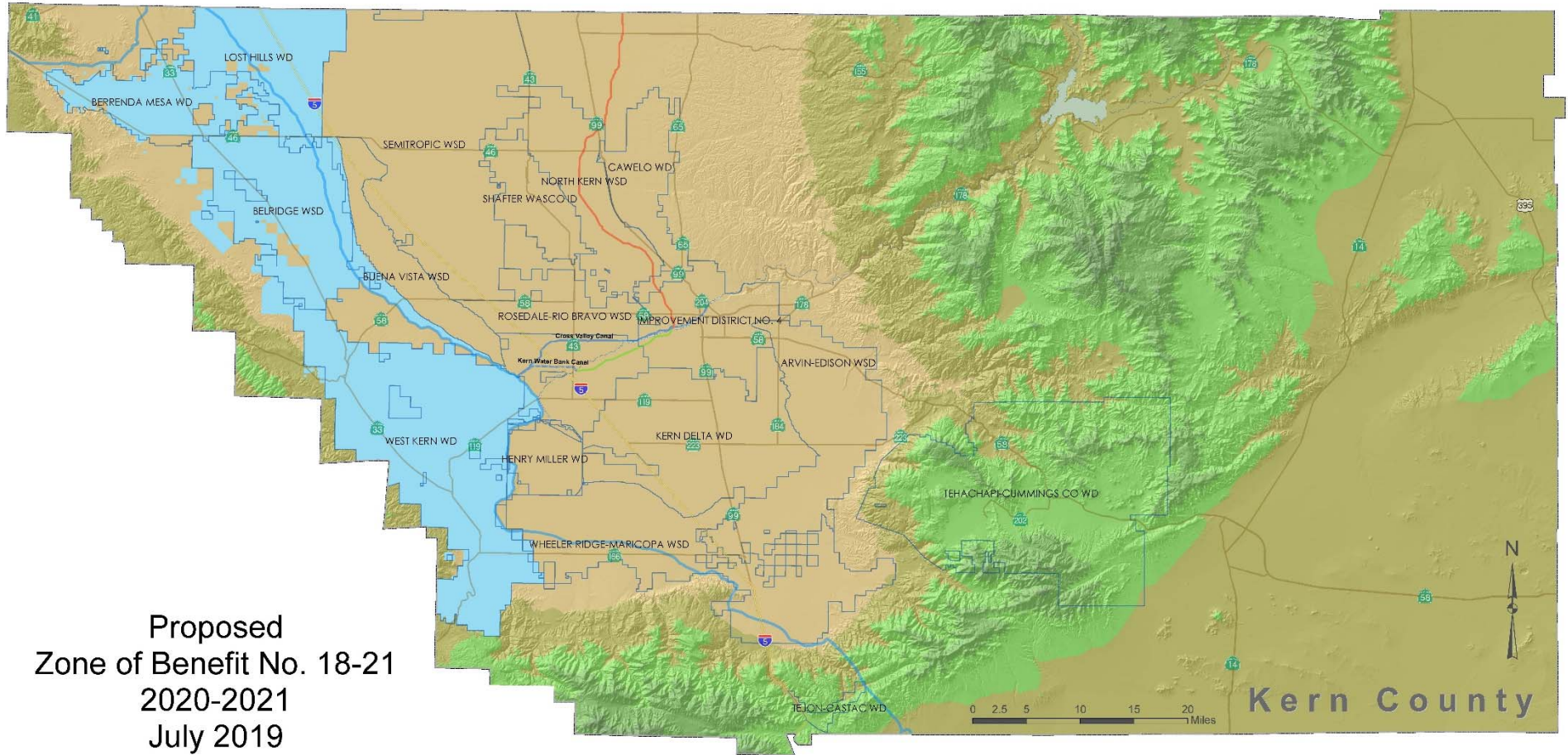


**Map 2. Proposed Zone of Benefit No. 17**



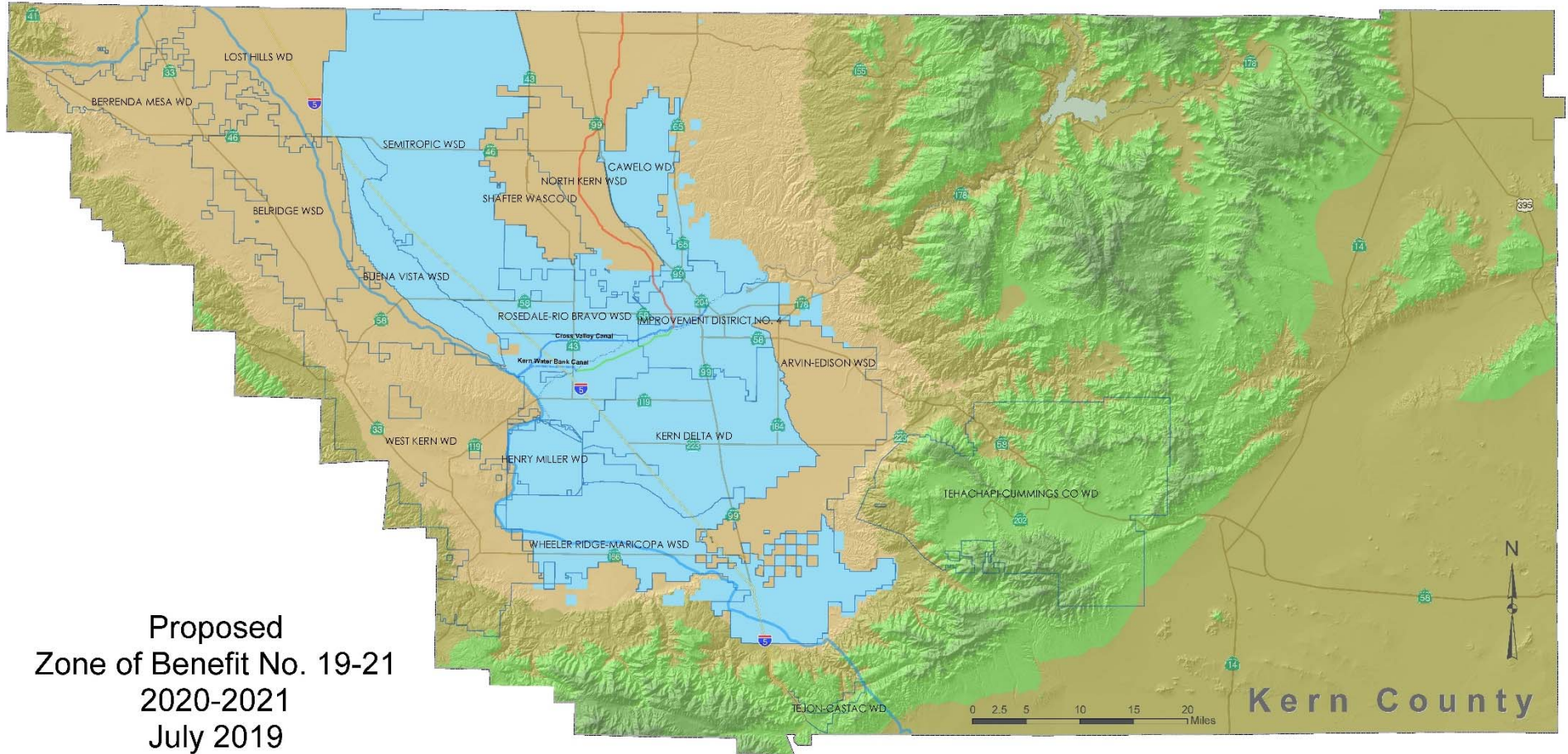
Proposed  
Zone of Benefit No. 17-21  
2020-2021  
July 2019

*Map 3. Proposed Zone of Benefit No. 18*



Proposed  
Zone of Benefit No. 18-21  
2020-2021  
July 2019

**Map 4. Proposed Zone of Benefit No. 19**



Proposed  
Zone of Benefit No. 19-21  
2020-2021  
July 2019