

Section 1

Background

BACKGROUND

Westlands consists of nearly 1,000 square miles of prime farmland between the Diablo Range of the California Coast Range mountains and the trough, or lowest point, of the San Joaquin Valley in western Fresno and Kings Counties. Westlands averages 15 miles in width and stretches 70 miles from Mendota on the north to Kettleman City on the south. Figure 1 shows the general location of Westlands. Figure 2 is a map of Westlands in the western portion of the San Joaquin Valley.

Population trends presented in this section are from the San Luis Unit Drainage Program, Draft Environmental Impact Statement (EIS), December 1991. Westlands is located in Fresno and Kings Counties. The only communities in Westlands are Huron and Lemoore Naval Air Station. Huron's 1990 population was 4,766. Population projections for Fresno and Kings Counties indicate growth of 28 percent and 23 percent, respectively, during the period 1990 to 2000. Huron is anticipating a 13 percent population increase during the same period.

Population Center	1980 (pop)	1990 (pop)	Est. 2000 (pop)
Huron*	2,768	4,766	5,425
Lemoore Naval Air Station**	N/A	10,000	17,000

* Source, California Department of Finance, 1991. Huron is surrounded by Westlands, but is not in the District.

**Estimates provided by Lemoore Naval Air Station.

These projections, especially those in unincorporated areas of each county, are highly dependent on agricultural activity. The Draft EIS states that those areas most influenced by declining agricultural acreage are projected to experience population increases. The loss of agricultural acreage and ultimate loss of employment would lead to population losses in specific areas of the county. With an uncertain water supply, it is difficult to determine the population trends over the short- and long-term.

Neighboring communities are also greatly impacted by agriculture in Westlands for jobs and economic stability. These include the cities of Mendota, Kerman, Coalinga, and Lemoore. Decreases in agricultural acreages in Westlands would affect the projected population. The following tables from the Draft EIS summarize the 1980-1990 population and the population projections for selected communities through 2020.

**Table 1
Community Population Projections**

Community	Year			
	<u>1995</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>
Firebaugh	5,095	5,490	5,885	6,280
Huron	4,220	5,425	5,950	n/a
Mendota	10,000	14,000	22,000	30,000

Table 2
Growth of Counties and Cities within the San Luis Unit
from 1980-1990

County/City	Population		Percent of Population Unincorporated areas		Percent Change
	1980	1990	1980	1990	1980-1990
Fresno County	514,621	667,490	37.1	23.9	29.71
Coalinga	6,593	8,212			24.56
Fresno	217,346	354,202			62.97
Firebaugh	3,740	4,429			18.42
Huron	2,768	4,766			72.18
Mendota	5,038	6,821			35.39
Others	88,047	129,424			46.49
Unincorporated	191,089	159,636			-16.46
Kings County	73,738	101,469	45.2	33.3	37.61
Avenal	4,137	9,770			136.16
Hanford	20,958	30,897			47.42
Lemoore	8,832	13,622			54.23
Others	6,454	13,364			107.10
Unincorporated	33,357	33,816			.01

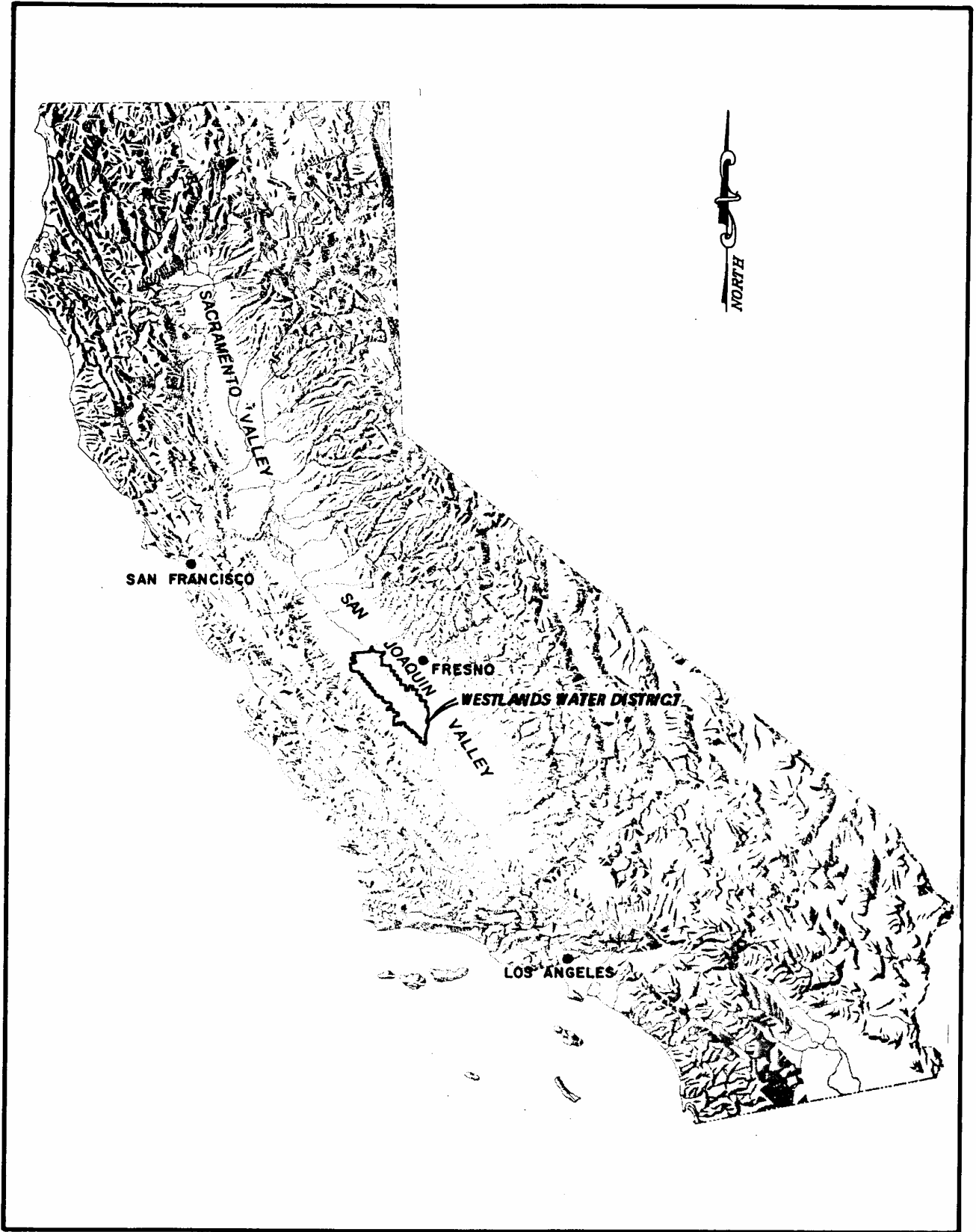


Figure 1. Location of Westlands Water District in California

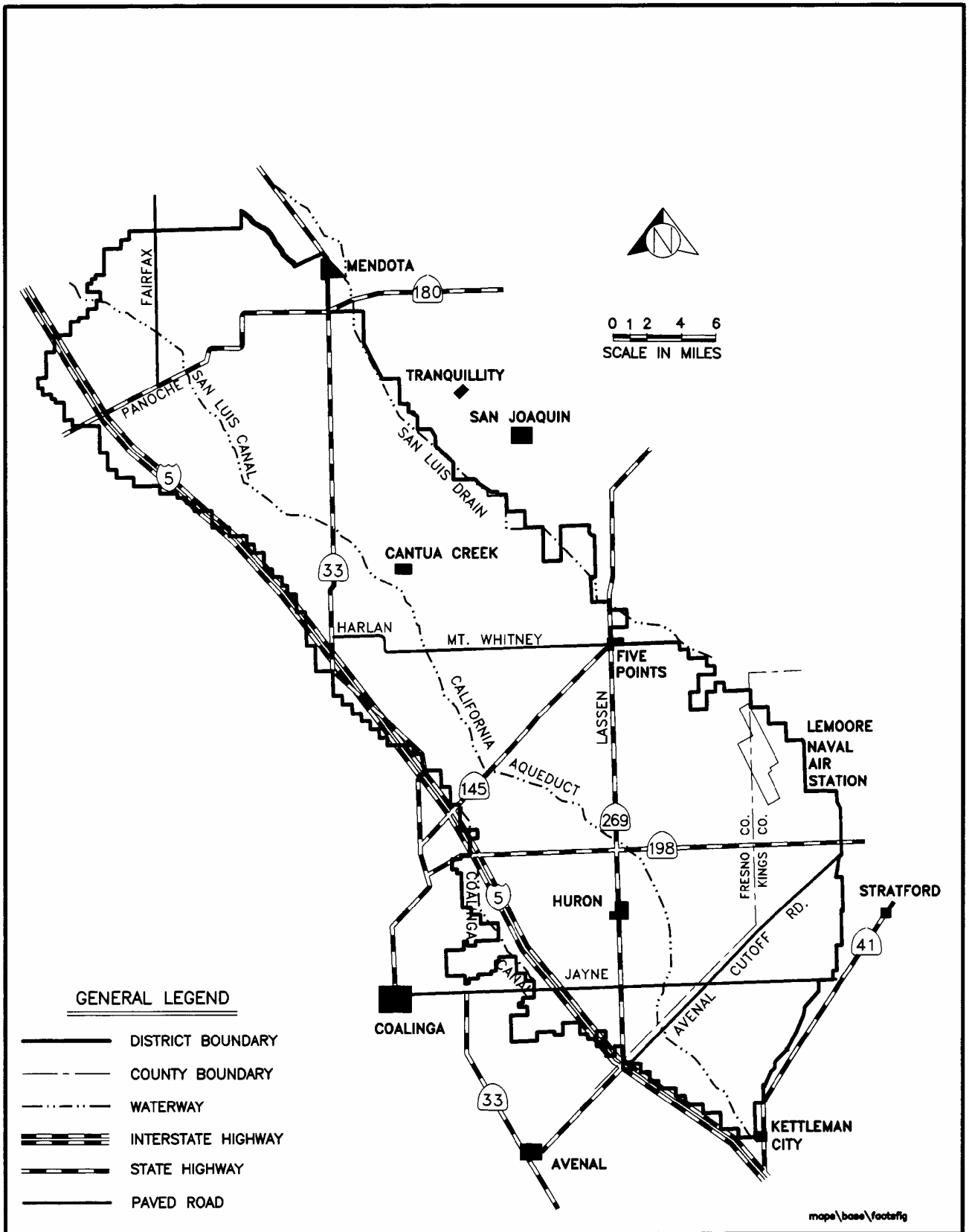


Figure 2. Westlands Water District

District Formation

Westlands was formed under California Water District Law in 1952 upon petition of landowners located within the District's proposed boundaries. Nearly all land within the current Westlands' boundaries was at one time farmed using groundwater.

Negotiations between Westlands and the U.S. Bureau of Reclamation began on a contract to provide a dependable, supplemental supply of surface water through the Bureau's Central Valley Project (CVP) shortly after the District's formation. At that time, the federal government was considering the development and construction of the CVP's San Luis Unit (SLU). This involved cooperation between the federal and state governments with regard to shared water storage facilities and conveyance systems.

When the original Westlands was organized, it included approximately 376,000 acres. In 1965 it merged with its western neighbor, Westplains Water Storage District, adding 210,000 acres. Additionally, lands comprising about 18,000 acres were annexed to the District after the merger to form the current 604,000-acre District with an irrigable acreage of 567,800 acres. The original Westlands is referred to as Priority Area I and Westplains is referred to as Priority Area II, each under a separate water service contract with the Bureau. Priority Area III currently does not have a firm water service contract and receives only surplus CVP water or hardship water when available from the Bureau during drought periods to preserve trees and vines.

	Date	Acres in Contract	Classes	Acre-Feet
First USBR* contract	1968	604,000		900,000** 250,000***

* Forty-Year Contract Scheduled for Renewal in the Year 2007.

** Per 1963 Water Service Contract

*** Per 1986 Barcellos Judgment

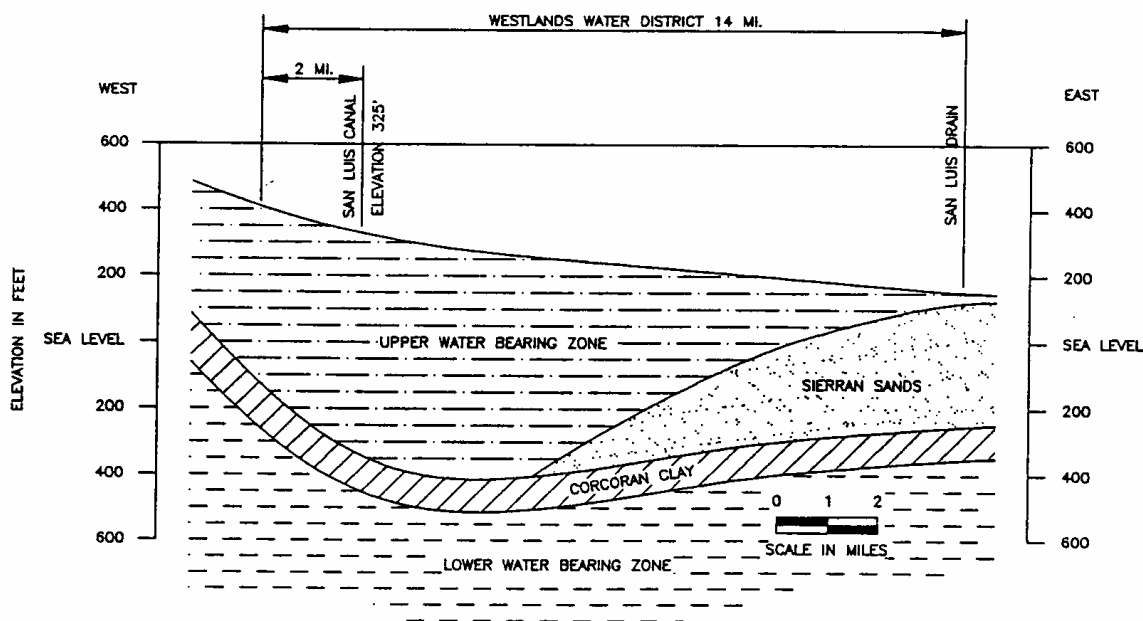
	Total Acres	Irrigable Acres
Original size	376,000	337,000
Current size	604,000	570,000

Westlands Water District does not have a M&I contract for Project water, but the District does convey water to other entities that do have contracts for Project water. Westlands does deliver water for incidental agricultural uses and it's contract allows for non-agricultural uses that has been termed M&I.

1996 Non-Agricultural Uses
Fresno Co. Public Works, Helm Community Water Service District, Lemoore Naval Air Station, City of Huron, City of Coalinga
Cotton gins, fruit and vegetable packing sheds, tomato processing plants, nut processing plants
Farm equipment repair facilities
Poultry production facilities
Dust Control

Soils and Hydrology

The San Joaquin Valley is a wide bedrock basin filled with thousands of feet of alluvial sediment deposited by streams and rivers flowing out of the adjacent mountains on both the east and the west (Figure 3). Westlands is located near the centerline of this basin, bordered on the east



by the Fresno Slough and on the west by the Diablo Range of the California Coast Ranges.

Figure 3. Generalized Hydrogeological Cross Section of Westlands

The Sierra Nevada on the east side of the Valley is predominately comprised of uplifted granitic rock overlaid in areas by sedimentary and metamorphic rock. Sierran alluvial deposits in the District consist primarily of well-sorted sands, with minor amounts of clay. The Sierran alluvium decreases in thickness and increases in depth below the surface toward the west. These coarse-textured sediments are characterized by high permeability and a low concentration of water soluble solids.

One of the principal subsurface geological features of the San Joaquin Valley is the Corcoran Clay formation. Formed as a lake bed about 600,000 years ago, this clay layer ranges in thickness from 20 to 200 feet and underlies most of the District. Varying in depths from 200 to 500 feet in the Valley trough to 850 feet along the Diablo Range, the Corcoran Clay divides the groundwater system into two major aquifers--a confined aquifer below and a semiconfined system above.

The Diablo Range consists of complex, folded, and uplifted mountains which are composed predominantly of sandstones and shales of marine origin. These sandstones and shales contain salts, as well as trace elements such as selenium. Eroded by creeks flowing from the Diablo Range, sediments form gentle sloping alluvial fans. The texture of the Diablo Range deposits depends on the relative position on the alluvial fan and ranges from coarse sand and gravel to fine silt and clay. Generally, those portions of Westlands lying high on the alluvial fans have permeable, medium-textured soils. With decreasing elevation from the west to east, soil textures become finer. These fine textured soils are characterized by low permeability and increased concentrations of water soluble solids, primarily salts and trace elements.

The preliminary information in Appendix C was provided by the Hanford Soil Survey Office of the Soil Conservation Service and extracted from "General Soil Map, Westlands Water District."

Soil Association	Est. Acres	Effect on Water Operation and Management
Tachi-Armona-Gepford	1,000	See Appendix C
Westhaven-Panoche-Excelsior	47,000	See Appendix C
Ciervo-Cerini-Lillis	72,000	See Appendix C
Lethent-Panoche-Westhaven-Cerini	40,000	See Appendix C
Ciervo-Cerini-Panoche, Saline-Sodic	57,000	See Appendix C
Ciervo-Cerini-Panoche	342,000	See Appendix C
Panoche-Cerini, Subsidized	45,000	See Appendix C
Total	604,000	

See General Soil Map, Westlands Water District, Appendix C.

Agricultural Drainage

Salinization, or salt build-up in the soil, is one of the oldest problems faced by irrigated agriculture. Complicating Westlands' salinity problems is its soil structure in some areas where dense clay layers of varying depth and thickness restrict natural drainage. This causes an accumulation of unused irrigation water above the clay layers, resulting in a near-surface saline water table. Lands that are severely affected by a saline water table need artificial drainage facilities or in some cases conversion to non-irrigated use.

The original authorization for Westlands Water District included provisions for drainage service, but these facilities were never completed. Prior to construction of San Luis Unit facilities, it was believed that approximately half of Westlands would eventually need drainage service to remain productive. However, continuous monitoring and experience indicates that the drainage problem may not be as severe as previously believed. Much of the problem can be eased, though not fully eliminated, with intensive irrigation management. Even so, salts must ultimately be exported from the area to achieve salt balance and maintain land productivity.

The effects of the accumulation of agricultural drainage-borne selenium in waterfowl led to the closure of Kesterson Reservoir in June 1986, which was the temporary terminus for the San Luis Drain. Ultimately the drain was to terminate in the Delta. This made it more essential than ever to manage irrigation as efficiently as possible in the drainage collector system service area and elsewhere in the District. Westlands currently has no outlet for subsurface drainage water, but a litigation judgement has ruled that the United States continues to have an obligation to provide drainage service, which is being appealed by the U.S. Westlands, the State Water Resources Control Board and the USBR are continuing to negotiate a Memorandum of Understanding to jointly participate in an EIS/EIR to obtain a discharge permit and complete the Drain.

Shallow groundwater can restrict crop root development resulting in a reduced yield. Most crops can use shallow groundwater as long as the salt concentration is not too high for the particular plant and the roots do not become waterlogged. Depth to shallow groundwater has been monitored in the District for more than 30 years. Shallow groundwater levels are typically highest in April after preirrigation and lowest following the cropping season in October after crops have extracted a portion of the shallow groundwater.

This problem was addressed in the San Joaquin Valley Drainage Report published in 1990. Achieving the recommendations from this program were referenced to be given substantial deference in the 1992 CVPIA legislation as part of this water management plan.

The recommendations from this report for the Westlands subarea included:

1. Deep percolation on 159,300 acres of drainage affected lands would be reduced to 0.4 acre-feet per acre by improved irrigation management.
2. Reusing drainage water to irrigate about 12,100 acres of salt-tolerant trees and halophytes.
3. Operating 400 acres of evaporation ponds and about 1,500 acres of solar ponds.
4. Pumping the semi-confined aquifer under about 19,000 acres of land.
5. Retiring 33,000 areas of irrigated agricultural lands.

While the need for a drainage outlet for the District is still a necessity, Westlands is in substantial compliance with the first recommendation. The average deep percolation for irrigated lands in the District during the period 1978 to 1996 as presented in table 14 of this report was 0.47 AF/Acre. Additionally, District data from analysis of the Irrigation Improvement Program during the years 1986-1991 showed that deep percolation on lands with a water table within the 6 feet of the soil surface averaged 0.23 AF/Acre on 168 fields within the District. These data would indicate that lands with a drainage problem are in compliance, and additionally, that the average deep percolation on all irrigated lands within the District are almost in compliance with this goal. If all 604,000 acres of land within the District are considered, the average deep percolation is 0.42 AF/Acre.

Demonstration projects for recommendation 2 have been ongoing for the past 5 years at two locations within Westlands. These demonstrations are being conducted by the Westside Resource Conservation District under a grant from the Bureau of Reclamation to establish the economic feasibility of this approach.

The problems with practical hazing methods and bioaccumulation in waterfowl have limited the adoption of evaporation and solar ponds for disposing of subsurface drainage waters in this area.

Pumping of the semi-confined aquifer has not been an attractive recommendation due to lack of options for the use of the water. Westlands limited water supply could be enhanced if this water were of good quality, and would probably have been readily adopted.

In 1997 the USBR initiated a voluntary land retirement program, funded by the CVPIA Restoration Fund. This program expected to purchase about 15,000 acres of drainage affected lands in the CVP service area to remove them from irrigated agriculture in 1998 and 1999. These actions were delayed pending preparation of satisfactory Environmental Assessment(EA) and Finding of No Significant Impact(FONSI) studies. The draft EA and FONSI documents propose that approximately 7,000 acres will be retired in the District. The water allocation on the retired lands will remain with Westlands due to the signed agreement between the U.S. and Westlands. Westlands participates in the purchase of the lands in exchange for the water allocation off the land.

Climate

Annual precipitation in Westlands averages about seven inches, the majority of which falls during the months of December through March. Summer maximum temperatures frequently exceed 100E F and winter temperatures occasionally fall below freezing. With a mean annual temperature of 62E F, the area has an average frost-free growing season of 280 days.

NORTHERN ZONE

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Precip	1.46	1.41	1.51	.69	.26	.07	.01	.01	.20	.40	1.07	1.10	8.18
Avg Temp	46	51	55	61	67	73	78	76	72	64	53	45	62

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Max Temp	54	62	67	75	83	90	94	93	88	80	66	55	76
Avg Min Temp	38	40	43	46	52	57	61	60	57	49	40	35	48

Temperature in degrees F Precipitation in Inches

Average wind velocity and direction: 4.7 mph NW

Average annual frost free days: 336

Source: CIMIS Weather Station, Murrieta Farms/Adams&Hwy 33, Tranquillity, California; 1976-98, Rainfall, Mendota Dam/ CIMIS Weather Station, 1960-1998

CENTRAL ZONE

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Precip	1.6	1.52	1.35	.51	.21	.06	.01	.05	.26	.47	.81	.91	7.76
Avg Temp	46	51	56	61	67	73	77	77	73	65	53	45	62

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Max Temp	54	62	68	75	82	88	93	93	88	80	66	54	75
Avg Min Temp	37	40	44	47	52	57	61	61	57	50	41	36	49

Temperature in degrees F Precipitation in Inches

Average wind velocity and direction: 5.1 mph NW

Average annual frost free days: 339

Source: CIMIS Weather Station, University of California, Westside Field Station, Five Points, California; 1982-98, Rainfall, 1962-1998

SOUTHERN ZONE

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Precip	1.48	1.46	1.36	.52	.24	.05	.02	.02	.21	.38	.80	.89	7.43
Avg Temp	45	51	57	62	68	74	79	78	74	66	54	45	63

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg Max Temp	54	62	68	76	83	89	94	94	89	81	66	54	76
Avg Min Temp	37	41	45	48	53	58	63	62	59	51	42	36	50

Temperature in degrees F Precipitation in Inches

Average wind velocity and direction: 4.1 mph NW

Average annual frost free days: 343

Source: Westlands Automated Weather Station, 2 Miles SW, Huron, California; 1982-98.

Rainfall, Westhaven, California/WWD, 1960-1998

Environment

The following is a list of federally listed endangered, threatened, or candidate species residing in, passing through, or recently extirpated from the San Joaquin Valley. Most of these species are within the historical range of Westlands Water District but with the development of the District and subsequent changes in land use to farming, it is not known which of these species are still present or have been extirpated from Westlands.

Mammals

- Giant kangaroo rat
- San Joaquin fox
- Nelson's antelope ground squirrel
- Fresno kangaroo rat

Birds

- Tricolored blackbird
- White-faced ibis

Reptiles

- Blunt-nosed leopard lizard

Invertebrates

- Ciervo aegialian scarab beetle

Plants

- California jewelflower
- Recurved larkspur

Source: San Luis Unit Drainage Program; Draft Environmental Impact Statement, December 1991; and California Fish and Game, Los Banos.

Additionally, the draft EIS for NAS Lemoore in 1997 provided information that follows which will supplement the previous information:

Wildlife species found at NAS Lemoore represent those common to the San Joaquin Valley and are described below by habitat type:

Developed and landscaped lands. Wildlife found in these areas are typical of urban areas and include house mouse (*Mus musculus*), roof rat (*Rattus rattus*), pocket gopher (*Thomomys* sp.), and California ground squirrel (*Spermophilus beecheyi*). Bird species found include mourning dove, house sparrow, house finch, European starling, rock dove, barn swallow (*Hirundo rustica*), and Brewer's blackbird.

Disturbed annual grassland. Mammals associated with this habitat type at NAS Lemoore include black-tailed jackrabbit (*Lepus californicus*), cottontail (*Sylvilagus auduboni*) coyotes, skunks, opossum and a number of rodents, such as ground squirrels, and the Fresno kangaroo rat (*Dipodomys nitratoides exilis*). Reptiles associated with this habitat type include western whiptail (*Cnemidophorus tigris*), western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*) and gopher snake (*Pituophis melanoleucus*). Common bird species found include the loggerhead shrike (*Lanius ludovicianus*), common raven (*Corvus corax*), western burrowing owl, arid American kestrel.

Agricultural. Some 46 species of water and shore birds have been observed on the base, including a variety of herons, egrets, geese, ducks, plovers, sandpipers, and gulls (US Navy 1990e). These birds are most numerous during the winter and spring months and are most commonly associated with the agricultural and wetland areas. Thirteen species of raptors have also been seen on base. These include nine species of hawk and four species of owl, including the western burrowing owl. In addition, the agricultural areas support game birds such as dove, and ring-necked pheasant (*Phasianus colchicus*), and a wide variety of other birds, including red-winged blackbird, tricolored blackbird (*Agelaius tricolor*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Reptiles, amphibians, and mammals found here include those associated with the disturbed grassland, but at much lower populations.

Wetlands. Most amphibian and reptiles associated with wetland areas are confined to the irrigation and drainage ditches located on the base and the wetland areas in the northeast corner of the base. Common species include the California treefrog (*Hyla californiae*), bullfrog (*Rana catesbeiana*), western aquatic garter snake, and the common kingsnake (*Lampropeltis getulus*). Bird species commonly using the wetland areas include great blue heron, snowy egret, American coot, red-winged blackbird, and marsh wren.

Special Status Species. The Table 3 describes status and presence at NAS Lemoore for threatened and endangered species and species of special concern that were identified by the USFWS. Seven federally listed endangered species, seven federally threatened species, nineteen species of federal concern, seven state listed endangered species, three state listed threatened species, and four state species of special concern occur in the vicinity and potentially could be present at NAS Lemoore.

Table 3

Biological Resources: Sensitive Species Known to Inhabit or Potentially Inhabit the Vicinity of NAS Lemoore

Scientific Name	Common Name	Federal/State/CNPS Status	Present on Project Site?
Mammals			
<i>Ammospermophilus nelsoni</i>	Nelson's antelope ground squirrel	SC/-/-	P
<i>Dipodomys ingens</i>	giant kangaroo rat	E/E/-	U
<i>D. nitratoides</i>	Fresno kangaroo rat	E/E/-	C
<i>D. nitratoides brevinaus</i>	short-nosed kangaroo rat	SC/-/-	P
<i>D. nitratoides nitratoides</i>	Tipton kangaroo rat	E/E/-	C
<i>Eumops peratis californicus</i>	greater western mastiff bat	SC/-/-	P
<i>Myotis ciliolabrum</i>	small-footed myotis bat	SC/-/-	U
<i>Myotis volans</i>	long-legged myotis bat	SC/-/-	P
<i>Myotis yumanensis</i>	Yuma myotis bat	SC/-/-	P
<i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse	SC/-/-	P
<i>Perognathus inornatus</i>	San Joaquin pocket mouse	SC/-/-	U
<i>Plecotus townsendii townsendii</i>	Pacific western big-eared bat	SC/-/-	P
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E/T/-	P
Birds			
<i>Athene cucularia hypugea</i>	western burrowing owl	SC/CSC/-	C
<i>Branta canadensis leucopareia</i>	Aleutian Canada goose	T/-/-	P
<i>Buteo regalis</i>	ferruginous hawk	SC/-/-	P
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	T/CSC/-	P
<i>Charadrius montanus</i>	mountain plover	C/-/-	P
<i>Empidonax traillii brewsteri</i>	little willow flycatcher	SC/E/-	U
<i>Falco peregrinus anatum</i>	American peregrine falcon	E/E/-	P
<i>Haliaeetus leucocephalus</i>	bald eagle	T/E/-	P
<i>Plegadis chihi</i>	white-faced ibis	SC/-/-	C
<i>Sterna antillarum brownii</i>	California least tern	E/E/-	P
Reptile			
<i>Clemmys mannorata marmorata</i>	northwestern pond turtle	SC/CSC/-	P
<i>Clemmys mannorata pallida</i>	southwestern pond turtle	SC/CSC/-	P
<i>Crotaphytus (Gambelia) silus</i>	blunt-nosed leopard lizard	E/-/-	P
<i>Masticophis flagellum ruddocki</i>	San Joaquin whipsnake	SC/-/-	P
<i>Phrynosoma coronatum frontale</i>	California horned lizard	SC/-/-	U
<i>Thamnophis gigas</i>	giant garter snake	T/T/-	P
Amphibians			
<i>Rana aurora draytonii</i>	California red-legged frog	T/CSC/-	U
<i>Scaphiopus hammondi</i>	western spadefoot toad	SC/CSC/-	U
Fish			
<i>Hypomesus transpacificus</i>	delta smelt	T/T/-	Unknown
Invertebrates			
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	T/-/-	P
<i>Desmocerus californicus dimorphis</i>	valley elderberry longhorn beetle	T/-/-	P
<i>Lytta molesta</i>	molestan blister beetle	SC/-/-	Unknown

Source: USFWS 1997b; CDFG 1994.

Notes:

Federal Status	State/CDFG Status	CNPS Status	Present?
E = Endangered	E = Endangered	IB = Rare and endangered in California and elsewhere	C = Confined
T = Threatened	T = Threatened		P = Possible
PE = Proposed endangered	R = Rare	4 = Limited distribution	U = Unlikely
PT = Proposed threatened	CSC = California species of special concern.		
C = Candidate			
SC = Species of concern, presumed extinct.			

Source: E-2 Aircraft Squadrons Realignment Draft Environmental Impact Statement. November 1997, pages 3-13 to 3-15.

A more general source for these types of information is published by Region 1 of the US Fish and Wildlife Service, Portland Oregon, *Recovery Plan for Upland Species of the San Joaquin Valley, California*, September 1998. This source will give greater detail on the species mentioned earlier and on others.

Environmental Resources within the District.

The locations of the following resources are plotted on the map in Figure 4.

Name	Est. Acres	Improvement or management by District or others
Mendota Wildlife Area	155 acres in WWD (12,425 acres total)	Owned and managed by CA Dept of Fish & Game (F&G).
WWD Duck Pond	4± acres	WWD provides land and water. F&G provides management.
Pilibos Wildlife Area	127 acres	Wildlife habitat operated under joint agreement between F&G, Department of Water Resources (DWR), and USBR.

Recreational Resources within the District.

Name	Est. Acres	Improvement or Management by District or Others
Fishing in the San Luis and Coalinga Canals	-0-	--

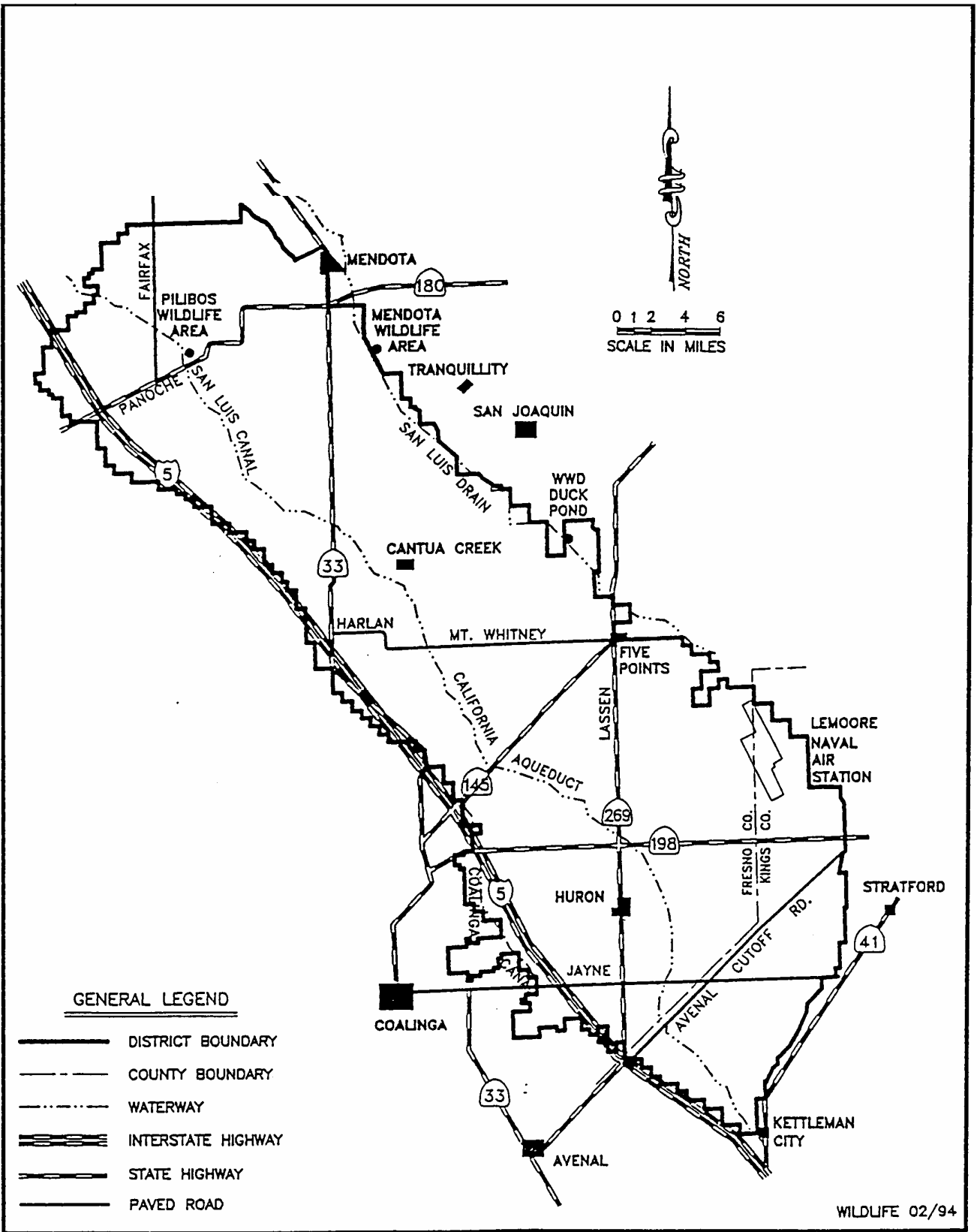


Figure 4. Location of Environmental and Recreational Resources in Westlands Water District

WATER DISTRIBUTION SYSTEM

Westlands is in the San Luis Unit of the CVP. The main water supply features of the Unit are completed and fully operational, including the Delta-Mendota Canal, the San Luis Dam and Reservoir, the San Luis Canal (SLC), and the Coalinga Canal (CC). However, relift pump stations on 12 percent of Westlands' laterals proposed for completion are yet to be constructed. These laterals and relift stations will be a major part of any future Westlands' Distribution System Completion Project.

Also, Westlands operates and maintains the 12-mile concrete-lined CC and the Pleasant Valley Pumping Plant which have a capacity of 1,100 cubic-feet per second.

District Facilities

Westlands' permanent distribution system consists of a closed, buried pipeline network designed to convey irrigation water to 160- or 320-acre land units from the SLC, the CC, and a 7.4-mile unlined canal from the Mendota Pool. The distribution system was built between 1965 and 1979. The area served by the completed system serves approximately 88 percent of the irrigable land in the District, including all land lying east of the SLC. The areas in Westlands where the distribution system is completed are shown in Figure 5.

Water is distributed through 1,034 miles of buried pipe, varying in diameter from 10 to 96 inches. Gravity and pumps feed 38 lateral pipelines from the east bank of the SLC, while water is pumped into 27 laterals on the west bank. Six partially completed laterals are served from the CC.

The basic design flow rate of each on-farm delivery system is one cubic-foot per second per 80 acres. The water is delivered with a minimum head pressure of five feet above the high point of the parcel. Farmers control individual deliveries at each of the more than 3,000 metered outlet valves.

Most of the land in the original Westlands is east of the SLC and slopes gently from an elevation of about 320 feet to about 160 to 200 feet at the eastern boundary. Most of this land has gravity service from the SLC. Small recirculating pumping plants at the headworks of each of the gravity laterals pressurize the laterals serving lands adjacent to the SLC which are too high in elevation to be served through the gravity laterals.

The land lying west of the SLC, most of which is in Priority Area II, is at higher elevations than the SLC. It is served by pumping from the SLC and also by gravity from the CC.

Most of the remaining District lands are served by farmer-constructed temporary diversions. The farmers maintain these facilities for Westlands. Some of the pumping costs are offset by the availability of less expensive CVP power.

Approximately one-third of the land between the SLC and the CC is served by pumping from the SLC. The other two-thirds is served by laterals from the CC.

Facilities Maintenance and Replacement

Westlands conducts an extensive ongoing preventive maintenance program for all its equipment and facilities. There have been no past system failures that have resulted in a significant loss of water.

Distribution system maintenance budgets vary depending on water availability. Annual maintenance expenditures were \$3.2 million for the water year 1996-97. In years of reduced supply, the utilizes O&M reserve funds to maintain the system. In 1996 a portion of lateral 27R was replaced due to a high failure rate for a particular type of pipe, at a cost of \$259,000.

In addition, the District has an ongoing policy for the construction and installation of new delivery facilities, and \$225,000 worth of metered deliveries were added to the distribution system in the 1996-97 water year. The total District investment in the distribution and drainage system as of February 28, 1997, was about \$200 million. The present value of the completed distribution system is in excess of \$500 million and is comprised of the following components.

Diversion Point	Description
63 Turnouts from the San Luis Canal 6 Turnouts from the Coalinga Canal 28 Temporary Turnouts from San Luis Canal and 19 from Coalinga Canal	Metered, piped laterals
Pumping Plants 6-1 and 7-2 from Mendota Pool	Metered, unlined canal to pumping plants

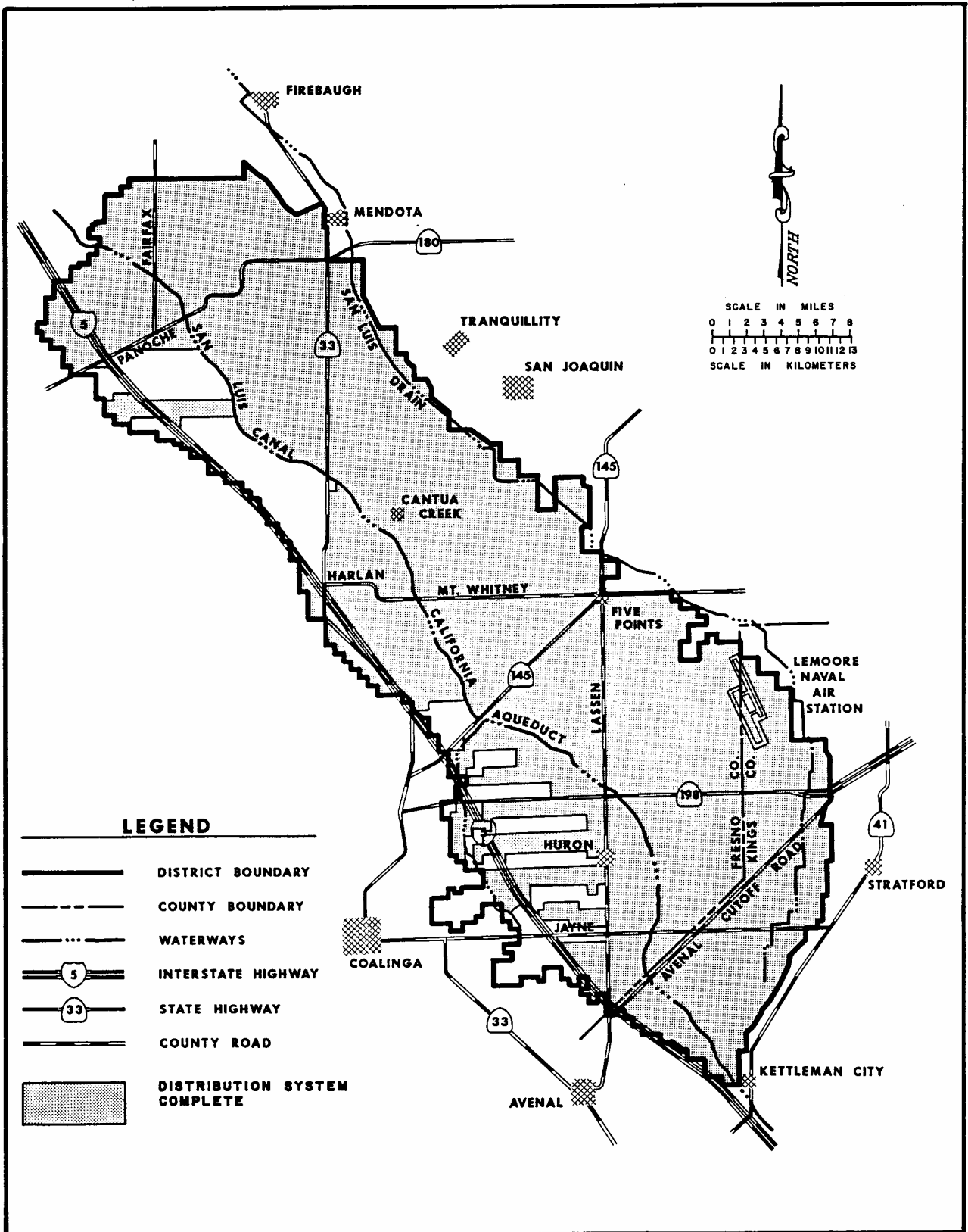


Figure 5. Areas in Westlands Water District Where Distribution System is Complete.

WATER MEASUREMENT

All water delivered, for both agricultural and non-agricultural purposes, is currently accounted for through any one of approximately 3,700 meters. The use of meters to measure water delivery is a cornerstone of any water conservation program. Meters enable water managers to accurately allocate limited supplies and recoup true delivery costs. They also enable the farmer to precisely measure the amount of water delivered and calculate irrigation efficiency. Without a reliable meter-based delivery system, farmers are more likely to apply a safety factor to each irrigation to avoid crop yield reducing underirrigation.

Recognizing these benefits, District founders elected to install flow meters as each lateral was originally constructed. Each of the 3,075 original agricultural deliveries cost \$1,400, in 1991 dollars, for a total of \$4.3 million. District-wide meter accuracy is within plus or minus two percent as determined from calibration tests.

Westlands' Meter Shop, located at the District's Five Points Shop and Field Office, is among the state's most modern. Meters are calibrated in the shop on a fixed schedule and repaired as needed.

All customer water needs, including those covered by this urban plan, are satisfied from the agricultural contract. Non-agricultural accounts have been generally classified as Municipal & Industrial (M&I) accounts, but these accounts could be more specifically classified as M&I and Incidental Ag accounts, as defined by the water delivery contract with the USBR.

M&I accounts are those that fall into the Commercial, Industrial and Institutional (CII) classification. There were 52 of the total 240 non-agricultural accounts that could be classified as "true" M&I accounts for the 1998 water year, March 1 through February 28.

Incidental Ag accounts would be those accounts providing for water needs incidental to agricultural production activities, such as shops, houses, and wash racks. 78 percent of the "M&I" water accounts reported to the USBR could be classified as "Incidental Ag" water.

All water delivered by the District is metered, but none of the water is treated by the District. All meters are read on a monthly basis. .Smaller meters, 2 inches or less, are generally of a turbine type and larger meters are a propeller type. All meters are serviced on an as needed basis and on a periodic basis, depending on size. Calibration of District meters averages within plus or minus 2 percent.

Turbine meters are generally serviced in place on an annual basis and are replaced when repair parts are no longer available, become unserviceable or become obsolete. The factory calibration is utilized throughout the life of the meter. The larger propeller meters are removed, returned to the meter repair facility and re-calibrated on a four-year cycle. See Table 1 for M&I Water Meter Data.

Westlands' bills monthly for all water delivered in the District, but in special cases M&I accounts are billed on an annual basis. All water meters are read and recorded monthly. The Customer Accounting Department utilizes software developed in-house to track all water delivered in the District. M&I water is billed for either one or two acre-feet in advance, based on the prior year use levels and the advance applied to actual use at the end of the year.

Table 4-M&I Water Meter Data

Meter Size	Number	Accuracy (percentage)	Reading frequency (days)	Calibration frequency (months)	Maintenance frequency (months)
1"	31	Factory	30	Factory	12
1.5"	64	Factory	30	Factory	12
2"	74	Factory	30	Factory	12
3"	27	+/- 2%	30	48	48
4"	37	+/- 2%	30	48	48
6"	4	+/- 2%	30	48	48
10"	2	+/- 2%	30	48	48
14"	1	+/- 2%	30	48	48
Total	240				

Description

Meters that fail or are inaccurate are repaired and recalibrated immediately. To ensure accuracy, meters are placed on a four-year preventive maintenance cycle ensuring that each is overhauled and recalibrated at least quadrennially. O&M Reserve funds are used for preventive maintenance during water-short years when funds are short.

The District's 96 remaining Brooks meter controllers are scheduled to be phased out at the rate of 20 per year and replaced with vertical meter and valve assemblies. The Brooks meter controllers have proved to be difficult to maintain, test, calibrate, and operate; and replacement is the preferred economical method to reduce operating costs and improve service.

In addition to testing approximately 1,000 District meters annually, the District also tests and calibrates an additional 250 meters installed by farmers on well discharges in conjunction with Westlands' Pumped Groundwater Exchange and Groundwater Integration Programs. These conjunctive use Programs maximize the use of the farmers' groundwater wells during drought periods. Operation and maintenance of all wells is the farmers' responsibility. Under the present program, accurate metering allows both the farmers and the District to carefully manage and account for all water delivered. Other programs such as the *Irrigation Management Information System (IMIS)* must be built on the foundation of a solid water metering program.

The District's conveyance system is almost all buried pipeline, but the District does operate the Coalinga Canal for the USBR. All of the laterals are fed by headworks on the California Aqueduct or the Coalinga canal.

Miles Unlined Canal	Miles Lined Canal	Miles Piped	Other
7.4	0	1,034	0

Westlands does not have large storage reservoirs, tailwater recovery systems, or managed groundwater recharge facilities. Westlands has 16 small regulating reservoirs designed to act as a controlling mechanism at the upper reach of each pumping plant.

DISTRICT OPERATIONS

In general, district farmers apply for an allocation from the USBR contract that the district administers. District regulations and operating procedures are included in the Appendix B. A water user can take delivery of their allocation as needed, through out the season, which extends from March thru September. The March water year beginning allows the water user to better manage and utilize their allocation by adjusting their management decisions for the rainy season, rather than having to make the same decisions at the end of December, as was necessary previously.

Westlands operates an arranged rate-demand water ordering system. Farmers must notify the District 24 hours prior to beginning the irrigation. Flows are usually ordered in multiples of 24-hour periods, but can be adjusted for shorter periods with District approval.

RECLAMATION LAW

Because Westlands contracts with the Bureau for water, its farmers are subject to Reclamation law and regulations, a body of statutes and rules governing the distribution and payment of federal Project water. The law also governs the repayment obligations to the United States for construction of the numerous Project facilities throughout the 17 western states.

Federal Reclamation law provides for interest-free repayment of the construction costs of irrigation Project facilities. It also limits the amount of land on which a landowner can receive low-cost water up to 160 acres (320 acres for a married couple). Acreage limitation does not apply to leased land.

Major changes were made to the law by the Reclamation Reform Act of 1982 (RRA). RRA increased the ownership limitation for individuals in districts with new or amended contracts to 960 acres, and for individuals who so elected. An individual is defined as an immediate family member, i.e., a person, his or her spouse, and/or a dependent. It also imposed new pricing requirements which, among other things, eliminated the interest-free repayment of Project capital costs for water used on land leased in excess of the 960-acre entitlement.

In Westlands, acreage limitation has resulted in the orderly breakup of large private landholdings. Table 4 shows the number of farms has increased and the average farm size has decreased to 905 acres. Table 5 shows almost 85 percent of the farms are 960 acres or less. This percentage would be greater if equivalency acreage is considered.

Table 5
Irrigable Acreage Trends

<u>Year</u>	<u>Number of Water Users</u>	<u>Total Acreage</u> ^{1/}	<u>Average Farm Acreage</u> ^{2/}
1970	84	176,261	2,098
1975	210	461,498	2,198
1980	243	489,789	2,016
1985	289	503,917	1,744
1990	613	530,441	865
1995	600	542,763	905

^{1/} Irrigable acreage eligible to receive Project water, not adjusted for equivalency.

^{2/} Farms eligible to receive Project water

Table 6
Water User Size
December 1995

<u>Farm Size (Acres)</u>	<u>Number of Farms</u> ^{1/}
320 or less	150
321 to 960	354
961 to 1,280	125
1,281 to 5,000	61
5,000 or more	10

^{1/} Based on 600 water users purchasing Project water for 542,763 acres in December 1995.

US BUREAU OF RECLAMATION WATER COSTS

Westlands purchases water from the Bureau at a variety of costs depending upon the RRA status of the landowner, farmer, or irrigated land. Following is a description of the Bureau water rates.

1963 Contract Rate

Applies to water provided to lands held by individuals under prior law (the 160-acre entitlement), but are not subject to full cost (Hammer Clause). The original 1963 Contract rate is fixed at \$8 per acre-foot until the Contract is renewed by the year 2007.

Operation and Maintenance (O&M) Rate

Applies to water provided under the 1963 Contract to lands which are subject to the RRA, but are not subject to full cost (less than 960 acres). This rate covers the Bureau's estimated annual costs of delivery and is set each year based on Bureau estimates. Actual O&M costs are determined by the Bureau at the end of the water year. Pursuant to Public Law 99-546, the District is billed for any shortfall between estimated and actual costs. If this shortfall is not paid, it becomes an interest-bearing obligation of the District to the Bureau.

Cost-of-Service Rate

Applies to all water other than that provided under the 1963 Contract, unless the land is subject to full cost. This rate is adjusted annually by the Bureau and includes the O&M charge, plus repayment of amortized capital costs.

Full-Cost Rate (RRA)

Applies to water for (1) land in excess of the 960-acre entitlement farmed by an individual who is subject to the RRA and (2) all land under extended recordable contracts, as specified in the 1987 amendments to the RRA. In addition to the annual O&M and capital cost components, this rate includes interest on unpaid capital costs.

Full Cost Rate (Hammer Clause)

Applies to water for leased land in excess of the 160-acre entitlement which is farmed by an individual who is subject to prior law. This rate includes the same components as the full-cost (RRA) rate, but has a higher interest rate component.

Table 6 shows the water rates, which include USBR water costs, paid by farmers in the District.

Table 7
1996-97 District Water Rates

WESTLANDS WATER DISTRICT
CENTRAL VALLEY PROJECT WATER
1996-97 WATER RATES - See Notes
(Adjusted for Drainage Repayment and 95% Water Supply)
ALTERNATIVE A (adjust all rate components)

WATER TYPE	PRIORITY AREA OF DELIVERY	WATER TYPE DESCRIPTION	1996-97	1996-97	PRIOR YEARS	DISTRICT	DRAIN	WATER	1996-97
			USBR RATE	RESTORATION FUND RATE	RESTORATION FUND RATE	O&M RATE	REPAYMENT RATE	DELIVERED BENEFIT RATE	TOTAL WATER RATE
<u>1963 CONTRACT SUPPLY</u>									
63CT	ALL	1963 CONTRACT - CONTRACT RATE	\$8.00	\$6.53	(\$0.15)	\$5.98	\$0.08	\$1.33	\$21.77
63CT	ALL	1963 CONTRACT - O&M RATE	\$17.57	\$6.53	(\$0.15)	\$5.98	\$0.08	\$1.33	\$31.34
63CT	ALL	1963 CONTRACT - NEW LAW FULL COST RATE	\$60.44	\$6.53	(\$0.15)	\$5.98	\$0.08	\$1.33	\$74.21
63CT	ALL	1963 CONTRACT - OLD LAW FULL COST RATE	\$78.47	\$6.53	(\$0.15)	\$5.98	\$0.08	\$1.33	\$92.24
<u>PROVISIONAL SUPPLY</u>									
PROV	ALL	PROVISIONAL - COST OF SERVICE RATE	\$29.69	\$6.53	(\$0.15)	\$5.98	\$0.05	\$1.33	\$43.43
PROV	ALL	PROVISIONAL - NEW LAW FULL COST RATE	\$60.44	\$6.53	(\$0.15)	\$5.98	\$0.05	\$1.33	\$74.18
PROV	ALL	PROVISIONAL - OLD LAW FULL COST RATE	\$78.47	\$6.53	(\$0.15)	\$5.98	\$0.05	\$1.33	\$92.21
<u>M&I SUPPLY</u>									
M&I	ALL	MUNICIPAL AND INDUSTRIAL	\$43.50	\$13.06	\$0.32	\$38.09	\$0.00	\$0.00	\$94.97
<u>OTHER CHARGES & CREDITS</u>									
1996 WATER ALLOCATION BENEFIT RATE PER ACRE-FOOT ALLOCATED AS OF JULY 1, 1996									\$1.05
RAW WATER REPRESENTATIVE SAMPLING PROGRAM COSTS - PER DELIVERY									\$67.00
TEMPORARY FACILITY CREDIT									(\$2.00)
NON-AGRICULTURAL ADVANCE PAYMENT WHERE PRIOR YEAR ANNUAL USE IS 1 AF OR LESS									\$95.00
NON-AGRICULTURAL ADVANCE PAYMENT WHERE PRIOR YEAR ANNUAL USE IS GREATER THAN 1 AF									\$190.00

NOTES

U. S. BUREAU OF RECLAMATION RATES ARE CALCULATED ON THE BASIS OF A 70 PERCENT WATER SUPPLY

DISTRICT REVENUE SOURCES

The District's fiscal year begins on March 1 and ends on the last day of February. The budget adopted in February may be changed during the year as necessary.

Westlands raises annual operating revenue from water sales that are billed monthly. In a normal year, its water sales revenue is used for all operating expenses. Also, assessments are collected for non-operating costs such as repayment for the District's distribution and drainage collector systems.

The District's O&M component of the water rate covers all costs associated with supplying and distributing water to customers, in addition to acquisition of capital assets and preventive maintenance programs. Rates may subsequently be adjusted if water supplies change. District O&M is added to the cost of CVP water.

Agricultural deliveries from the farmer's temporary facilities incur a power surcharge based on pumping lift, which is added to the water rates to recover pumping costs beyond that estimated for a permanent distribution system. The power surcharge applies to most lands west of the San Luis Canal and Coalinga Canal. Agricultural water rates for service through temporary facilities that are operated and maintained by the farmers are reduced for avoided Westlands' maintenance costs.

Untreated municipal and industrial (M&I) water is delivered to government facilities including Naval Air Station, Lemoore; area businesses; labor facilities; cotton gins; crop-grading stations; processing plants; and private homes. M&I water is billed for a minimum allocation of two AF, payable in advance. M&I water use accounts for less than 6,500 AF, or less than 1 percent of annual water sales.

Agricultural Water Payments

Westlands' farmers apply for an allocation of agricultural water in December for the forthcoming water year and enter into a contract with the District to accept and pay for it. The Bureau estimates the amount of water available to contractors as early as mid-February with supplies usually finalized by May. The available water supply is allocated to eligible farmers under the District's Regulations for the Allocation of Agricultural Water.

Payment for water and power used is due by the 25th day of the following month. In the event payment is not made for water allocated or used, future deliveries are suspended and the amount owed is added to the annual assessment of the land on which the water was allocated or used.

Landowner Assessments

Since 1984 the District has used the Benefit Assessment Valuation Schedule method of collecting funds to repay the United States for construction of the District's distribution and drainage collector systems.

Under the benefit valuation method, assessments are based on the relative benefits bestowed to the land by the District. For example lands served by the District's distribution system are assessed at a higher rate than the 12 percent of lands not yet served.

The annual repayment obligation to the United States for costs incurred in building the District's distribution and drainage collector facilities currently stands at just over \$5 million. Table 7 lists the per-acre assessments for various land classes. From 1984 to 1989 this obligation was collected entirely through direct landowner assessment. To make the assessment process more equitable, in 1990 the District began to collect 50 percent of the repayment obligation through landowner assessments and 50 percent as a component of the water rates. The repayment obligation will be paid off by 2018.

In 1988 after the closure of Kesterson Reservoir and the resulting drainage provisions of the Barcellos Judgment (described in the following section), the District began to levy an assessment of \$5 million per year as up-front financing for future drainage projects. The trust fund, with accumulated interest, was intended to grow to \$100 million. With the Bureau's failure to meet the Barcellos Judgment's deadline of December 31, 1991, to adopt a drainage plan for Westlands, the District canceled Drainage Trust Fund assessments and sought a court order for the release of the \$17.6 million already accumulated.

On several occasions the Board of Directors has levied one-time assessments for specific purposes such as refunds of landowners' overpayments and initial costs of the Distribution System Completion Project. In 1992 due to the 25 percent water supply, the Board levied a special administrative costs benefit assessment to fund certain parts of the District's operating budget that are of general benefit.

**Table 8
District Per-Acre Benefit Assessments
(\$/Ac)**

	<u>1991</u> ^{2/}	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Priority Area I and II						
Repayment Contract Benefit Assessment, with distribution system. ^{3/}	\$ 5.05	\$ 5.29	\$ 5.04	\$ 5.04	\$ 5.07	\$ 5.07
Distribution System Completion Benefit Assessment	.71	---	---	---	---	---
Water Delivered Charge ^{1/}	---	---	\$ 2.73	\$ 2.73	\$ 1.12	\$ 1.80
Water Allocated Charge ^{1/}	---	---	\$ 1.82	\$ 1.82	\$ 1.26	\$ 1.54
Administrative Costs Benefit Assessment	---	<u>1.10</u>	<u>1.60</u>	<u>1.81</u>	<u>1.61</u>	<u>1.69</u>
	\$ 5.76	\$ 6.39	\$ 11.19	\$ 11.40	\$ 9.06	\$ 10.10

^{1/} Collected as a component of the water rate, then converted for this table to per-acre for comparison .

^{2/} As a result of the economic hardships created by the 25 percent water supply in 1991-92, collection of 1991 Water Allocated and Delivered charges were deferred into 1992 and were collected through the assessment process.

^{3/} Without a distribution system Repayment Contract Benefit is \$0.92 per acre.

District Financial Resources Summary

The amount of revenue from water sales declined markedly in 1991 under a 25 percent water supply. District O&M charges were held at a level insufficient to offset the lower volume of CVP water to avoid added economic pressure on farmers from the continuing drought. This necessitated substantial cost-cutting and drawing of funds from District reserves. Except for special assessments, as noted in the previous paragraph, income from assessments funds the District's long-term repayment obligations to the United States (distribution and drainage collector systems); and it is not used for normal operating expenses.

Believing it to be more equitable, in 1990 the District began to collect 50 percent of the obligation through landowner assessments and 50 percent as a component of the water rates. The repayment obligation will be paid off by 2018.

LEGAL BACKGROUND AND ISSUES

The District is constrained in its water supply and allocation and drainage efforts by a landmark court decision known as the Barcellos Judgment. A lawsuit involving a number of water delivery and drainage issues was filed by District farmers and landowners against Westlands in 1979. In 1981 Westlands in turn sued the United States Government. The suits involved, among other issues, the District's contractual entitlement to Central Valley Project (CVP) water and drainage service, the District's service area, water costs, and allocation regulations. The suits were consolidated in Barcellos and Wolfsen, Inc., et al., vs. Westlands Water District, et al., and Westlands Water District, et al., vs. the United States, et al.

The litigation was resolved through a negotiated settlement between all parties which was subsequently approved by the District Court in the form of a judgment entered by the Court, commonly known as the Barcellos Judgment (December 1986).

Among other legal issues, the Judgment specifically:

- Upheld the validity of the 1963 Contract between Westlands and the Bureau for 900,000 AF of water to be delivered annually at the applicable 1963 Contract rate or the Reclamation Reform Act rate.
- Affirmed Priority Area I's right to timely apply for and purchase 900,000 AF of water annually. Unused Priority Area I water not timely applied for and purchased by Priority Area I is available for use in Priority Area II.
- Stated that the United States shall provide provisional water service of 250,000 AF at "cost-of-service" rates pending conclusion of the Contra Costa Water District vs. Hodel, et al. and Westlands Water District Delta Environmental Impact Statement lawsuit.
- Directed the Bureau to pursue a good faith effort to provide an additional 100,000 AF of firm water (supplemental water) on a long-term basis to Priority Area II.
- Established guidelines for the allocation of CVP water within Westlands.
- Established a trust fund to collect \$5 million per year for a total of \$100 million in seed money for future drainage projects and gave the Bureau until December 31, 1991, to adopt a drainage plan for Westlands.
- Reaffirmed the District's water service area.

WATER SHORTAGE CONTINGENCY PLAN

Westlands delivers small quantities of untreated, non-potable CVP water which is ultimately used for municipal and industrial(M&I) purposes by Lemoore Naval Air Station and by various rural commercial and residential customers located within the District boundaries. Westlands also conveys raw water to the Cities of Huron and Coalinga which have separate water supply contracts with the USBR. No water is treated prior to delivery. Westlands has no treatment facilities to provide potable water supplies to these incidental non-agricultural customers. District staff have discussed this plan with representatives of Lemoore Naval Air Station, Huron, Coalinga, and Fresno County. This water supply shortage contingency plan does not deal with deliveries to Huron and Coalinga.

Westlands suffers under a water short situation even when 100% of the contract amount is available. Allocation and shortage procedures for agricultural water are presented in the Ag Water Management Plan for details on this topic. Even though M&I water supplies have been allocated under the agricultural contract and are currently last to be curtailed in a severe water shortage situation, discussions have occurred recently that propose the possibility of an M&I shortage provision.

Currently there are regulations to deal with wasteful use of agricultural water, but while there are no specific policies related to M&I waste, the M&I water delivered is technically "Ag Water" and so falls under the ag waste regulations. The reason for this is that the M&I water deliveries are less than 0.5 percent of the water delivered by Westlands. Since the District is not responsible for the policies on the use of water conveyed to NAS Lemoore, this number falls to about 0.2 percent.

The highest level of annual non-agricultural water deliveries has been approximately 6,500 AF. Given the reductions in Westlands' CVP water supplies due to federal regulatory restrictions, it is likely that future non-agricultural water deliveries will be reduced even with modest population increases in the area. This is because reduced agricultural water supplies from the federal government will lead to a reduction in processing-related uses and in the farm labor population living in Westlands.

Estimates of water demand for the next 12, 24, and 36 months should be similar to the non-agricultural water use in an average water year, about 5,000 AF.

The "worst case" water supply estimates for the next 12, 24, and 36 months is nil. Currently all non-agricultural water is part of the CVP contract supply. Since the extent of the additional regulatory restrictions is unknown at this time, this possibility cannot be ruled out. However, it has been the policy of the USBR to deliver a minimum of 75 percent of historical M&I use, even when agricultural allocations are considerably less than that. Other supplies from internal groundwater transfers are possible but because of uncertainty that groundwater can meet Title 22 standards and the lack of proximity to District distribution facilities, these supplies cannot be guaranteed

The CVP allocation to Westlands is shared between agricultural, incidental agricultural and incidental non-agricultural water users. The District's Regulations for the Allocation of Agricultural Water Within the Westlands Water District (Appendix A) state "The District's General Manager is authorized to set aside from the total entitlement whether they be from the District's basic contract supply or some other general source of water, for each area of the District the amount of water needed for M&I purposes...." Historically, when the overall water supply has been reduced, the non-agricultural water allocation may not be reduced a similar percentage. In certain cases of severe reduction, it is likely that the District would receive CVP hardship water for health and safety purposes based on the statement of need.

Westlands believes that although there have been no mandatory reductions imposed on the District's non-agricultural customers, water conservation has occurred during periods of reduced supply. This is apparent when comparing non-agricultural water use in full and reduced water supply years (in 1991 and 1992 water use was less than above average in each year). In the unlikely event that the CVP allocates no water to Delta export water service contractors and the allocation for M&I use is less than 75 percent of historical use, the District will purchase water from other sources including an Emergency Drought Water Bank. Mandatory rationing will be imposed to the extent that sufficient water cannot be purchased.

The District's General Manager is authorized by the Board of Directors to prohibit the wasteful use of water in Westlands. Westlands' Allocation Regulations state "The unauthorized using, taking, or wasting of water may subject the water user to civil or criminal prosecution. The General Manager is authorized, after oral or written notice to the water user, if in his judgement, it is advisable and in the best interest of the District, to lock the delivery facilities of, or discontinue water service to, any water user." Additionally, the Westlands' board may adopt a resolution on the use of non-agricultural water.

Each non-agricultural customer is metered according to AWWA standards, according to customer type. The price of non-agricultural water is set at the beginning of each year, based on the anticipated supply. District revenues from the sale of incidental non-agricultural water vary annually between one and two percent of the District's overall revenues and have little influence on the District's overall financial resources.

Plan of Action

The General Manager has the authority to discontinue water service if, in his judgement, water is being wasted. Additionally, the Board adopted a resolution prohibiting the waste of M&I water. The District is currently preparing information on M&I water conservation, which will be distributed to all M&I water users. The District is also encouraging other water suppliers (Cities of Huron and Coalinga, and Lemoore Naval Air Station) which receive water through Westlands' distribution system to develop water conservation plans and water shortage contingency plans.

Westlands will continue to read all meters in the District on a monthly basis.

