FIVE YEAR UPDATE

AGRICULTURAL WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT

JUNE 2013

BEFORE THE BOARD OF DIRECTORS

OF THE

LINDMORE IRRIGATION DISTRICT

COUNTY OF TULARE, STATE OF CALIFORNIA

RESOLUTION OF THE BOARD OF DIRECTORS OF LINDMORE IRRIGATION DISTRICT ADOPTING THE FIVE YEAR UPDATE OF THE DISTRICT'S WATER MANAGEMENT PLAN

RESOLUTION NO.: 2013-04

WHEREAS, a five year update to the Lindmore Irrigation District's **Water Management Plan,** has been prepared, presented to and discussed by the Board of Directors of the District, which defines water management control and policies of the Lindmore Irrigation District; and

NOW, THEREFORE, BE IT RESOLVED, that the **Water Management Plan** prepared by the staff of the Lindmore Irrigation District, is adopted as presented and discussed at a noticed meeting scheduled for this date, is deemed acceptable and the Board of Directors finds that adoption of same is in the best interest of the Lindmore Irrigation District and its landowners:

RESOLVED FURTHER, that Michael D. Hagman, Manager-Secretary, is hereby authorized and directed to file said **Water Management Plan** on behalf of the Lindmore Irrigation District and to execute such other documents ad may be necessary to carry out the intent of the above resolution:

THE FOREGOING RESOLUTION WAS ADOPTED upon motion of Director DePaoli and seconded by Director Brownfield, it passed at the Regular Meeting of the Board of Directors held on July 9, 2013, by the following vote:

Ayes: Spuhler, Arnold, DePaoli, Adam, and Brownfield

Noes:

Absent:

Abstain:

Lindmore Irrigation District

A. Leroy Spuhler

A. Leroy Spuhler, President

CERTIFICATE OF SECRETARY

I do hereby certify that I am the Secretary of the Lindmore Irrigation District, an irrigation district organized and existing under the laws of the state of California, and that the foregoing Resolution was duly adopted by the Board of Directors of said District at a meeting thereof duly and regularly held at the office of the said District at 315 East Lindmore Avenue, Lindsay, California on the 9th day of July, 2013, at which meeting a quorum of said Board of Directors was at all times present and acting, and that said Resolution has not been rescinded or amended in whole or any part thereof, and remains in force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and the Seal of the Lindmore Irrigation District this 9th day of July, 2013.

Michael D. Hagman, Secretary
Lindmore Irrigation District

INTRODUCTION

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT

INTRODUCTION
WATER MANAGEMENT PLAN
LINDMORE IRRIGATION DISTRICT

This Water Management Plan (Plan) was prepared to comply with and satisfy the "Criteria for Evaluating Water Conservation Plans" (Criteria). These Criteria were developed by the United States Bureau of Reclamation (USBR) in response to the Central Valley Project Improvement Act of 1992 (CVPIA) and updated in 2008.

The Criteria identified items that have and will be evaluated in the 5-year updates of Water Management Plans prepared by districts in the Mid-Pacific Region. These Criteria were required by Public Law 102-575 Section 3405(e). This section of law also requires that all existing Water Management Plans be reviewed for adequacy.

Dennis R. Keller / James H. Wegley, Consulting Engineers, assisted Lindmore Irrigation District in the preparation of this 5-year update of their Plan.

FACILITIES EVALUATION
FIVE YEAR UPDATE
WATER MANAGEMENT PLAN
LINDMORE IRRIGATION DISTRICT

FACILITIES EVALUATION
LINDMORE IRRIGATION DISTRICT

The United States Bureau of Reclamation's Water O&M Branch has periodically performed an operation and maintenance examination of Lindmore Irrigation District (District) facilities. These examinations have failed to identify any major deficiencies and have consistently stated that the District was doing an outstanding job in both operating and maintaining the District facilities. The conditions leading to the findings can be principally attributed to the District's ongoing preventative maintenance program.

The booster pumping plants and traveling water screens are in excellent shape and have not had any historical problems of a serious nature. The District has experienced distribution system leaks primarily in the non-reinforced concrete piping sections, usually at the start of the irrigation season. Leaks are principally attributed to the cold temperature causing joint separations. When leaks occur, they are easily located and repaired, thereby minimizing any losses. The District has an ongoing program to replace, each year, about one-half mile of old leak-prone low head pipe with new, high quality pipe.

Metering devices used in the District system are flow meters, of the vertical flow and in-line flow meter type. These meters are inspected and calibrated on a periodic basis, thereby maintaining a high standard of accuracy. The meters have both instantaneous and totalizing capabilities to assist the District in maintaining proper water accounting records.

The District is a progressive district in that its landowners/growers strive for maximum utilization of existing lands for agricultural purposes and employment of proper water management techniques including improved distribution facilities for application of available supplies.

The District's management practices in availability of maximizing irrigation supplies for

application conjunctive use and purchase of additional supplies reflect a high degree of water conservation effort. The District Board of Directors is sincerely interested in continuing to pursue proper water conservation measures which provide for maximum utilization of existing water supplies.

2010 WATER MANAGEMENT PLAN
FIVE YEAR UPDATE
WATER MANAGEMENT PLAN
LINDMORE IRRIGATION DISTRICT

LINDMORE IRRIGATION DISTRICT
2010 Water Management Plan

Date of first draft – DECEMBER 2011
Date of final – JULY 9, 2013

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Section 1: Description of the District

District Name: *Lindmore Irrigation District*

Contact Name: Michael D. Hagman

Title: General Manager

Telephone: (559) 562-2534

E-mail: mhagman@lindmoreid.com

Web Address www.lindmoreid.com

A. History

1. Date district formed: 3/ 6/ 1937 *Date of first Reclamation contract*: 2/28/49
Original size (acres): 27,250 *Current year (last complete calendar year)*: 2009

The Lindmore Irrigation District (District) is a political subdivision of the State of California. The District was organized March 6, 1937, for the purpose of securing a supplemental water supply from the United States Bureau of Reclamation's (Reclamation) Central Valley Project (CVP). The District was organized under California laws pertaining to the formation and operation of irrigation districts. The District had no canal or ditch system and development had been brought about entirely by irrigation from privately owned wells. Early settlers found groundwater plentiful at shallow depths. Increased development and pumping lowered groundwater year after year. Dry years and an increased acreage in cultivated crops resulting from war demand reduced the underground supply to an alarming degree.

Accordingly on February 28, 1948, Contract No. 174r-1635 was entered into with Reclamation, for a water supply from the Friant-Kern Canal which is a unit of the Friant Division of the CVP, Mid Pacific Region. The contract was also for the construction of a concrete pipe distribution system. The contract was amended June 13, 1952, March 12, 1957, June 9, 1959, November 18, 1960, July 10, 1989, and Renewed September 28, 1990. This contract was voided by court action. A subsequent Long-term Renewal Contract was entered

into on March 1, 2001.

The first orange trees were planted in the area in 1880. The first irrigation wells tapped the shallow underground supply in 1895, thus triggering the intensive development of the area. The landowners/growers in the district, through the use of ingenuity, technical knowledge, farming know-how and private capital have been able to take a firm project water supply, relatively shallow soils and favorable climatic conditions and build a highly productive agricultural industry.

Rail transportation for the district is furnished by Kyle Railways. Principal shipping points and market outlets are the towns of Lindsay and Strathmore, requiring an average truck haul of about 6 miles from the farms in the District. Highway transportation being the predominant method, is facilitated by two main state highways and a system of improved county roads.

Industrial development in the District area is centered around the processing of agricultural products. The marketing of the agricultural commodities grown in the District passes through regular established channels.

The demand for hired labor peaks normally in January, June, July, October and November, with minimum requirements occurring in early April and September.

The history of groundwater use in the District has been one initially associated with fairly rapid development. When irrigated agriculture started, about 1890, groundwater stood about 20 feet below the surface. By 1917, a considerable area within the District was being irrigated from wells, causing the water table to drop. This drop was greatest in the area of heaviest pumping. This water table depression has been termed the “Lindsay Cone of Depression” or simply “the Cone”.

The Cone is bounded on the west by a groundwater divide, creating a closed basin that probably has been in existence for many years. Additional recharge of the Lindsay Cone area by reason of Central Valley Project deliveries tends to refill this groundwater depression. The annual replenishment to groundwater was historically proportional to the flow of the Kaweah and Tule Rivers for the same year, which of course was proportional to the precipitation for that year.

The fluctuations in groundwater levels are dependent upon the nature of the sediments and the rate and quantity of pumpage. Maximum vertical movement of the water table is greatest near the center of the cone, least near the perimeter. The water level drops quickly when a large water demand is made upon the sediments of low storage capacity found in the central part of the District.

Since 1922, mean depth to water since 1921 has been a function of Central Valley Project water deliveries since 1950, depth to groundwater and acres irrigated. The effect of project water deliveries was very apparent in that, in 1958, the mean depth to water over the entire District had risen approximately 50 feet since surface water deliveries started. At the original center of the cone of depression east of Lindsay, the rise was approximately 100 feet. The character and position of the cone of depression changed materially with the delivery of contract supply. The drop in the water table was initially due to pumping for irrigation. The rise has been attributed directly to Central Valley Project water deliveries.

Until 1950, groundwater was the major source of irrigation supply and water levels dropped. In 1917 the cone of depletion, centered east of Lindsay, and was confined to a relatively small area. By 1946, the irrigated acreage had increased from approximately 14,000 to 19,500 acres. The center of the cone had moved west of Lindsay and dropped another 75 feet.

The groundwater divide located on the west side of the cone of depression had also dropped 25 feet. Thus, there was every indication of a serious groundwater overdraft in the District and that water was being "mined" or permanently removed from storage and eventually some lands would revert to dry-farming unless a supplemental supply was obtained.

The urgently needed supplemental supply, by means of the Central Valley Project water deliveries, was started in 1950 and reached the maximum under the existing contract by 1954. By 1957, the cone of depression had filled approximately 110 feet. The character of the slopes on the perimeter of the cone had flattened and the groundwater divide on the west side of the cone had dropped another 30 feet. By 1958, re-establishment of the westward movement of groundwater across the old groundwater divide into areas to the west of the District had occurred.

The lowering of the groundwater divide west of the District undoubtedly would have occurred irrespective of project construction. Consequently, estimates of safe groundwater yield were based on the assumption that this barrier would have been removed, resulting in a material reduction, if not the entire elimination, of the District's source of water supply from the west and a corresponding reduction in the firm groundwater supply.

The District is governed by a board of five (5) directors elected for four-year terms on a staggered basis of two and three, at elections called every two (2) years. The District Board of Directors appoints a General Manager, Assessor, Collector, Treasurer, Legal Counsel, Secretary and Engineer.

2. Current size, population, and irrigated acres

	(2009)
Size (acres)	27,669
Population served	0
Irrigated acres	23,741

3. Water supplies received in current year

Water Source	*AF*
Federal urban water (Tbl 1)	
Federal agricultural water (Tbl 1)	31,578
State water (Tbl 1)	
Other Wholesaler (define) (Tbl 1)	
Local surface water (Tbl 1)	
Upslope drain water (Tbl 1)	
District ground water (Tbl 2)	
Banked water (Tbl 1)	
Transferred water (Tbl 6)	
Recycled water (Tbl 3)	
Other (see below) (Tbl 1)	
Total	31,578

4. Annual entitlement under each right and/or contract

	AF	*Source*	*Contract #*	*Availability period(s)*
Reclamation Urban AF/Y				
Reclamation Agriculture AF/Y	33,000	CVP - Class 1	175r-1635D	Year Round
Reclamation Agriculture AF/Y	22,000	CVP - Class 2	175r-1635D	Year Round
Other AF/Y		None		

5. Anticipated land-use changes

None.

6. Cropping patterns (Agricultural only)

List of current crops (crops with 5% or less of total acreage) can be combined in the 'Other' category.

Previous Plan (2003)		*Current Plan*	
Crop Name	*Acres*	*Crop Name*	*Acres*
Alfalfa	1,589.28	Alfalfa	1,527
Grapes	1,373.70	Grapes	1,502
Olives	4,700.47	Olives	4,338
Oranges	11,362.43	Oranges	11,760
		Corn	1,395
Other (<5%)	5,194.12	*Other (<5%)*	3,219
Total	24,220	*Total*	23,741

(See Planner, Chapter 2, Appendix A for list of crop names)

7. Major irrigation methods (by acreage) (Agricultural only)

Previous Plan (2003)		*Current Plan*	
Irrigation Method	*Acres*	*Irrigation Method*	*Acres*
Micro Sprinkler	13,902	Low Volume	15,034
Furrow	8,138	Furrow	7,443
Flood	2,180	Flood	1,006
Other		*Other*	258
Total	24,220	*Total*	23,741

(See Planner, Chapter 2, Appendix A for list of irrigation system types)

B. Location and Facilities

See **Attachment A** for points of delivery, turnouts (internal flow), and outflow (spill) points, measurement locations, conveyance system, storage facilities, operational loss recovery system, wells, and water quality monitoring locations.

1. Incoming flow locations and measurement methods

Location Name	*Physical Location*	*Type of Measurement Device*	*Accuracy*
Friant-Kern Canal	FKC Mile Post 88.40	Propeller Meter	±2%
Friant-Kern Canal	FKC Mile Post 90.40	Propeller Meter	±2%
Friant-Kern Canal	FKC Mile Post 93.20	Propeller Meter	±2%
Friant-Kern Canal	FKC Mile Post 93.20	Propeller Meter	±2%
Friant-Kern Canal	FKC Mile Post 93.20	Propeller Meter	±2%
Friant-Kern Canal	FKC Mile Post 93.20	Propeller Meter	±2%

2. Current year Agricultural Conveyance System

Miles Unlined - Canal	*Miles Lined - Canal*	*Miles Piped*	*Miles - Other*
None	None	123	None

3. Current year Urban Distribution System

Miles AC Pipe	*Miles Steel Pipe*	*Miles Cast Iron Pipe*	*Miles - Other*
N/A	N/A	N/A	N/A

4. Storage facilities (tanks, reservoirs, regulating reservoirs)

Name	*Type*	*Capacity (AF)*	*Distribution or Spill*
	Regulating	Combined Capacity is 22 Acre Feet.	Distribution
	Regulating		Distribution
	Regulating		Distribution
	Regulating		Distribution
	Regulating		Distribution

5. Outflow locations and measurement methods (Agricultural only)
Provide this information in Section 2 F.

There are no outflow locations. There are no District outflows.

6. Description of the agricultural spill recovery system

System periodic operational spills are limited to District owned reservoirs which are equipped with pump recovery systems.

7. Agricultural delivery system operation (check all that apply)

On-demand	*Scheduled*	*Rotation*	*Other (describe)*
	✓		

8. Restrictions on water source(s)

Source	*Restriction*	*Cause of Restriction*	*Effect on Operations*
Friant-Kern Canal	Delivery Reduction	Capacity Constraints	Increase in private groundwater pumping.

9. Proposed changes or additions to facilities and operations for the next 5 years

Proposed improvements to the District's system over the next five (5) years include the continued replacement of a defined percentage of the ageing distribution system.

C. Topography and Soils

1. Topography of the district and its impact on water operations and management

The District lies at the base of the western foothills of the Sierra Nevada, on the east side of the San Joaquin Valley. It extends from two (2) miles north of Lindsay, site of the District office, southward roughly 1½ miles south of Strathmore, a distance of about nine (9) miles. The District's greatest width east and west is about 10 miles. The topography of lands within the District varies in elevation from 375 feet along the northeastern boundary to 500 feet along the southeastern boundary. The ground surface slopes to the west at about 15 feet per mile. The southeastern portion lying east of the railroad and above the Friant-Kern canal, extends back into the foothills where the topography is rougher, with slopes varying from 20 to 100 feet per mile. Surface drainage is provided by natural slope of the land and is accumulated in small intermittent streams. There are no topography impacts on water operations and management procedures of the District.

2. District soil association map (Agricultural only)

See **Attachment B**, District Soils Map.

GENERAL

The soils in the Lindmore Irrigation District (District) are of several classes. 5,709 acres have been designated Class 1 with 11,187 acres designated as Class 2. Class 3 lands constitute 10,446 acres with the balance principally designated Class 6.

DESCRIPTIONS OF INDIVIDUAL LAND CLASSES

Class 1 lands contain a complex mix of soil types. The largest concentration of Class 1 lands, lie immediately to the west of the City of Lindsay. Smaller areas and stringers are widely and evenly distributed throughout the balance of the District. The predominant Class 1 soils are: Honcut sandy loam, Greenfield sandy loam, Exeter loam, San Joaquin loam, Farwell fine sandy loam, Farwell sandy loam, Madera loam, Chino silty clay loam and Chino clay loam, shallow phase. The Honcut, Greenfield and Farwell series are deep, medium textured soils, with few if any limitations.

The Exeter, San Joaquin and Madera loams have relatively shallow hardpans, typically 2 to 3 feet beneath loam and clay loam soils. The permeabilities and rooting depths of these soils are considerably improved by ripping and shattering the hardpans, due to the sandy soils beneath.

The soils of the Chino series have heavier textures, dominated by clay loams. Soils of the shallow phase grow increasingly alkaline with depth and have hardpans at 3 to 5 feet.

Class 2 soils are largely concentrated in the northern third of the District and in the southern third. In the north end of the District, the predominant Class 2 soils are: Honcut sandy loam, Exeter loam, Farwell sandy loam and Madera loam. Hardpans are common throughout these northern Class 2 areas, at depths of 3 to 4 feet.

Hardpans are less common in the southern end of the District. The prevalent Class 2 soils there are: Exeter loam, San Joaquin loam, Wyman loam, Porterville clay, Farwell fine

sandy loam, Chino clay loam and silty clay loam. All but the San Joaquin and Exeter loams are free of hardpans within 5 feet of the surface.

The Wyman soils are medium textured, with loam overlying strata of clay loam, loam and sandy clay loam. Slopes vary from 0 to 5 percent. The Porterville clays are situated on slopes that range from 0 to 9 percent. They are deep soils, clay and sandy clay, to a depth of at least 6 feet.

Class 3 is the predominant land class throughout the middle third of the District. Across the northern third of the district small areas of Class 3 are widely interspersed among the Classes 1 and 2. Broader expanses of Class 3 are situated throughout the southern third, though Class 2 prevails there.

The major Class 3 soils are Greenfield sandy loam, shallow phase, Exeter loam, San Joaquin loam, sandy loam and Farwell fine sandy loam. Hardpans are found throughout those Class 3 soils at depths ranging from 1 foot to 3½ feet.

Class S3 was assigned to 25 acres at the base of Lewis Hill, in the southeastern corner of the District. The soil is deep Porterville clay. Slopes are around 15 percent.

Class 6 lands are located in eight widely scattered areas, totaling 194 acres. Class 6 was assigned to areas unsuited to irrigated agriculture, such as natural drainageways, urban areas and slopes as steep as 30 percent.

SOIL DESCRIPTIONS

The 1940 and 1982 Soil Conservation Service, (SCS), soil surveys identify the two (2) most common soil series in the District as Exeter loam and San Joaquin loam. The Exeter loam predominates throughout the District north of Strathmore. Smaller areas of Honcut sandy loam and Greenfield sandy loam are found south and southwest of Lindsay. In the

northwest and western extremes of the District, the Madera loam is the most common soil series. Across the southeastern quarter of the District, around Strathmore, the San Joaquin loam is the major soil series. Within that same southeastern area, lesser areas of Wyman loam and Porterville clay are intermixed. In the southwestern end of the District are significant areas of Chino clay loam, including the shallow phase and Chino silty clay loam. The general soil descriptions, from SCS soil surveys: Visalia Area, December, 1940 and Tulare County, California, Central Part, February, 1982, are listed below:

Exeter Series: The Exeter loam is a well-drained soil, moderately deep to a duripan. Exeter soils formed in alluvium, mainly from granitic sources on terraces. Slope ranges from 0 to 2 percent. A typical profile is 14 inches of brown and dark yellow brown loam over 16 inches of brown loam, reddish brown sandy clay loam and yellowish red clay loam. A hardpan, around 13 inches thick, lies beneath. Below the hardpan, to at least 60 inches, are sand and gravelly coarse sand. Ripping and shattering the hardpan can improve the permeability and rooting depth. The soil is suited to vineyards, orchards and cultivated crops.

San Joaquin loam: The San Joaquin loam is a well-drained hardpan soil formed on terraces, from granitic alluvium. Most areas of this soil in the District are nearly level. The top 13 inches are brown to reddish brown loam, above 12 inches of reddish brown clay and sandy clay loam. Hardpan, typically 31 inches thick, lies beneath. Below the hardpan are strata of loam and sandy loam to 78 inches. Ripping and shattering the hardpan can improve the permeability and rooting depth. This soil is suited to vineyards, orchards and cultivated crops.

Honcut sandy loam: Honcut sandy loam is deep and well drained. It is situated on alluvial fans, having developed from granitic sources. Slopes are 0 to 2 percent. The surface, to 11 inches is brown sandy loam. Pale brown sandy loam lies beneath to a depth of 70 inches.

This soil is suited to orchards and vineyards, the moderate available water holding capacity being the main limitation.

Greenfield sandy loam: This soil is very deep, well drained and nearly level. It formed in alluvial fans from granitic sources. The top 10 inches are brown sandy loam. The subsoil is dark yellowish brown and brown sandy loam, to about 49 inches. Below, to 70 inches, is brown sandy loam. It is well suited to orchards and vineyards, with few limitations.

Madera loam: The Madera loam is a hardpan soil, occupying smooth alluvial terraces. The top 10 to 18 inches are brown loam. Brown, dark brown, or dark grayish brown clay lies beneath, atop a hardpan commonly found around a depth of 3 feet. The hardpan is typically 6 to 10 inches thick. Below the hardpan is light brownish gray, slightly calcareous sandy loam. Ripping and shattering the hardpan can improve the available rooting depth.

Wyman loam: This very deep soil is well drained, on gently sloping alluvial fans. It formed in mixed alluvium derived mainly from gabbro and mica schist. Typically, the surface layer is brown loam about 19 inches thick. The subsoil is brown loam, clay loam and sandy clay loam, about 50 inches thick. Yellowish brown sand extends below the subsoil to a depth of 75 inches. This soil is well suited to orchards and cultivated crops, with few limitations.

Porterville clay: This very deep soil is well drained, on gently to moderately sloping alluvial fans with slopes of 2 to 9 percent. It formed in alluvium derived from weathered basic igneous rock. Typically, the surface layer is brown and dark reddish brown clay, about 32 inches thick. The underlying material is dark reddish gray clay and sandy clay to a depth of about 72 inches. The soil is calcareous below a depth of about 32 inches. Deep, wide cracks form in this soil when it is dry. This soil is suited to orchards. Erosion hazard and the clay textures are the main limitations.

Chino clay loam: The surface of this deep soil is gray clay loam, generally not calcareous. Below a depth of 14 to 20 inches, the subsoil is light brownish gray clay loam, with high concentrations of lime. This material grades into a lighter textured material, in which the lime is more evenly distributed. The substratum consists of light brown or brown mottled variably textured alluvial sediments. This soil is suited to cultivated crops. Its low lying position and resultant frost danger discourage attempts at orchard crops. The heavy textures require care in cultivation.

Chino clay loam, shallow phase: The surface of this soil is dark gray loam or silty clay loam, to depths of 10 to 20 inches. Brownish gray clay loam lies beneath, at 3 to 5 feet, atop a hardpan. It is suited to cultivated crops, though heavy textures require care in cultivation to avoid compaction.

Chino silty clay loam: Chino silty clay loam developed on granitic alluvial fans or flood plains under restricted drainage. The soil surface is gray calcareous loam. From 15 to 24 inches, the subsoil consists of gray, slightly to moderately compact clay loam, or silty clay loam, with lime nodules and seams. At about 30 inches the subsoil is pale yellowish gray, highly calcareous silty clay loam, or silt loam. This layer grades into a light grayish brown, permeable fine sandy loam, or sandy loam. This soil is suited to cultivated crops. Heavy textures require care in cultivation.

3. Agricultural limitations resulting from soil problems (Agricultural only)

Soil Problem	*Estimated Acres*	*Effect on Water Operations and Management*
Salinity	None	
High-water table	None	
High or low infiltration rates	None	
Other (define)	None	

D. Climate

1. General climate of the district service area

The climate of the District is typical of the San Joaquin Valley, being semiarid and characterized by mild winters and hot, dry summers. Summer daytime temperatures frequently exceed 100 degrees Fahrenheit while winter temperatures drop below 32 degrees Fahrenheit. The mean annual temperature at nearby Porterville is 61.1 degrees Fahrenheit. The average annual minimum and maximum temperatures are 46.9 and 75.9 degrees, respectively.

The average yearly rainfall for the District area is 7.75 inches, based on records established by the California Irrigation Management Information System (CIMIS) Station number 169 at Porterville. Rain falls principally during the period December to April.

The entire District is thermally protected by drainage of cold air from the higher elevations to the valley floor. The topography is generally rolling, with warmer temperatures on the slopes and colder spots in the swales and drainage channels. The eastern portion of the District is generally warmer than the western or lower area where the land is less rolling.

The climatological normals for the District area presented in the preceding tables were obtained from the CIMIS station number 169 at Porterville, for the 9-year period of 2001-2009, inclusive. The climatological extremes for the District area were obtained from the CIMIS station number 169 at Porterville, for the period of 2001-2009, inclusive.

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Avg Precip.	1.30	1.35	0.88	0.95	0.51	0.00	0.01	0.00	0.07	0.33	0.76	1.57	7.75
Avg Temp.	45.0	49.2	54.9	58.2	67.9	73.7	79.4	76.5	71.2	60.7	51.4	45.0	61.1
Max. Temp.	56.1	62.1	68.7	72.4	83.7	90.0	95.5	93.6	89.3	77.9	65.7	56.4	75.9
Min. Temp	35.4	37.2	41.0	43.5	51.3	56.4	63.0	60.1	54.8	46.2	39.4	34.8	46.9
ETo	1.22	1.92	3.69	4.78	6.84	7.65	7.87	7.10	5.33	3.41	3.10	1.12	4.50

Weather station ID CIMIS #169 *Data period: Year* 2001 *to Year* 2009

Average wind velocity 3.0 mph *Average annual frost-free days:* 261

2. Impact of microclimates on water management within the service area

Demand exists for water during the winter months for frost protection purposes. This demand is independent of the evapotranspiration demand.

E. Natural and Cultural Resources

1. Natural resource areas within the service area

Name	*Estimated Acres*	*Description*
None	None	Not Applicable

2. Description of district management of these resources in the past or present

Not Applicable – no applicable resources exist within the District boundaries.

3. Recreational and/or cultural resources areas within the service area

Name	*Estimated Acres*	*Description*
None	None	Not Applicable

F. Operating Rules and Regulations

1. Operating rules and regulations

See **Attachment C**, District Rules and Regulations (water related).

2. Water allocation policy (Agricultural only)

The District's agricultural water allocation policy is as follows: At the beginning of each irrigation season, all water allocated to the District by Reclamation shall be pro-rated to each acre of land within the District equally according to the latest Assessed Valuation of the land. (Article 2. Section 22250, Water Code of the State of California.) The District Board of Directors policy exception exists which states: "no water shall be apportioned to parcels of five acres or less, unless a specific request is made by the owner each year."

3. Official and actual lead times necessary for water orders and shut-off (Agricultural only)

The policies of the District indicate that orders for turn-on shall be made not later than 9:00 a.m. at the District office, or telephoned to the office, on the morning of the day before the delivery of water is requested. Orders will be accepted at any time during the day, for delivery at a time later than the following day. No changes in water delivery, except for emergencies, will be made on Sunday. Orders for turn-off are the same as for a turn-on. Except for unusual circumstances, a turn-off order request will not be allowed the same day.

4. Policies regarding return flows (surface and subsurface drainage from farms) and outflow (Agricultural only)

Surface drainage from irrigation operations are considered as a waste of water. Stormwater runoff is controlled by the Regional Water Quality Control Board and District landowners are participating members of the Kaweah Sub-watershed or the Tule Sub-watershed of the Southern San Joaquin Water Quality Coalition. There is no known subsurface drainage issue requiring a policy.

5. Policies on water transfers by the district and its customers

The District has adopted water transfer policies which allow for water transfers. According to these policies, water may be transferred from one parcel of land to another and

from one landowner to another, within the District. Water transfers to and from the District are subject to Reclamation's Friant Division Water Operations Policy. Landowner/grower transfers are allowed into the District, but not from the District.

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers

a. Number of farms 961

b. Number of delivery points (turnouts and connections) 1,240

c. Number of delivery points serving more than one farm 0

d. Number of measured delivery points (meters and measurement devices) 1,240

e. Percentage of delivered water that was measured at a delivery point 100

f. Delivery point measurement device table (Agricultural only)

Measurement Type	*Number*	*Accuracy (+/- %)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
Orifices					
Propeller meter	1,240	±5%	After each turn-off	12[(1)]	12
Weirs					
Flumes					
Venturi					
Metered gates					
Acoustic doppler					
Other (define)					
Total					

[(1)]200 meters calibrated per year.

2. Urban Customers

This section was intentionally left blank because the District does not have urban customers.

a. *Total number of connections* _____

b. Total number of metered connections _____

c. Total number of connections not billed by quantity _____

d. Percentage of water that was measured at delivery point _____

e. Percentage of delivered water that was billed by quantity _____

f. Measurement device table

Meter Size and Type	*Number*	*Accuracy (+/-percentage)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
5/8-3/4"					
1"					
1 ½"					
2"					
3"					
4"					
6"					
8"					
10"					
Compound					
Turbo					
Other (define)					
Total					

3. Agriculture and Urban Customers

a. Current year agriculture and /or urban water charges - including rate structures and billing frequency

The current-year water rate is $60.00 per acre foot. Billing frequency is monthly.

b. Annual charges collected from customers (current year data)

Fixed Charges			
Charges ($ unit)	*Charge units ($/acre), ($/customer) etc.*	*Units billed during year (acres, customer) etc.*	*$ collected ($ times units)*
$26.40	$/Acre	24,200 Acres	$638,801

Volumetric charges[1]			
Charges ($ unit)	*Charge units ($/AF), ($/HCF), etc.*	*Units billed during year (AF, HCF) etc.*	*$ collected ($ times units)*
$60.00	$/Acre Foot	31,578[2]	$1,894,680.00

[1]*See **Attachment D**, District Sample Bill*

[2]*The District initially fills the system utilizing groundwater. This is due to temperature conditions and to reduce pipe and joint cracking and leakage due to the use of colder surface water supplies. The pumped volume is such that the sum of the metered deliveries is close to the gross surface water introduced. The volume lost dues to leakage therefore closely responds to the volume pumped.*

c. Water-use data accounting procedures

Water meters are read at each turn-off event. They are summarized and billed to each water user on a monthly basis. Any discrepancy must be addressed with the District prior to the 25th day of the month following billing. Use records are computerized and are maintained in the office of the District.

H. Water Shortage Allocation Policies

1. Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated

Any water shortage declaration by Reclamation is treated the same way as the annual allocation; that is, each year's allotment is pro-rated out to the District growers. The District will equally, to each acre of assessed land, allocate the total supply available. In any short water year, growers can make up the difference with private wells or purchase water from the District Pool, which is water returned to the District by growers not needing their full allotment in the current year.

2. Current year policies that address wasteful use of water and enforcement methods

The District's available surface water supply is below the consumptive demand of the crops grown, even in normal years. Wet year water supplies are also allocated equally to all lands. Any water found to be wasted, such as field runoff to roadways, broken ditch banks, clogged siphon or sprinkler pipes, is reported to the responsible farm operator and is taken care of immediately. No enforcement policy has ever had to be put in place to address this situation. The power to generate specific enforcement regulations is contained in Number 20. of the District's Rules and Regulations. That document is contained herein in **Attachment C**. This document is continuously reviewed by the Board of Directors and has been amended several times. It is transmitted to each landowner on an annual basis.

Section 2: Inventory of Water Resources

A. Surface Water Supply

1. *Acre-foot amounts of surface water delivered to the water purveyor by each of the purveyor's sources*

2009 Month	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Other Water (define) (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
Method							
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	493	0	0	0	0	0	493
April	1,199	0	0	0	0	0	1,199
May	2,628	0	0	0	0	0	2,628
June	3,714	0	0	0	0	0	3,714
July	5,216	0	0	0	0	0	5,216
August	6,821	0	0	0	0	0	6,821
September	6,186	0	0	0	0	0	6,186
October	3,261	0	0	0	0	0	3,261
November	2,060	0	0	0	0	0	2,060
December	0	0	0	0	0	0	0
TOTAL	31,578	0	0	0	0	0	31,578

2. *Amount of water delivered to the district by each of the district sources for the last 10 years*

Year	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Other Water (define) (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
2000	35,999	0	0	0	0	0	35,999
2001	37,815	0	0	0	0	0	37,815
2002	34,416	0	0	0	0	0	34,416
2003	42,335	0	0	0	0	0	42,335
2004	38,119	0	0	0	0	0	38,119
2005	41,952	0	0	0	0	0	41,952
2006	41,727	0	0	0	0	0	41,727
2007	20,277	0	0	0	0	0	20,277
2008	33,984	0	0	0	0	0	33,984
2009	31,578	0	0	0	0	0	31,578
Total	358,202	0	0	0	0	0	358,202
Average	35,820	0	0	0	0	0	35,820

B. Ground Water Supply

1. Acre-foot amounts of ground water pumped and delivered by the district

2009 Month	District Groundwater (acre-feet)	Private Groundwater *(acre-feet)
Method		
January	0	815
February	0	1,895
March	73	2,359
April	0	687
May	0	13,011
June	0	16,381
July	0	20,981
August	0	9,248
September	0	2,031
October	0	0
November	0	0
December	0	0
TOTAL	73	67,408

*estimated

2. Ground water basin(s) that underlies the service area

Name	*Size (Square Miles)*	*Usable Capacity (AF)*	*Safe Yield (AF/Y)*
DAU 242	Not Available	3,395,000	42,000

The safe yield number which is presented is a pre-Friant Division computation figure developed by Reclamation. As the contract allocations for the District and for the Lindsey-Strathmore Irrigation District were based on water quality as well as groundwater depletion issues, the groundwater condition is considerably improved. Reclamation prepared a post contract issuance report to determine if the District contract was of value, which concluded that it was. While groundwater conditions have considerably improved, no definitive work has been done to recompute the post-contract safe yield.

The groundwater conditions provide the principal basis for the strong water allocation/use policies of the District. The same conditions provide the basis for the annual actions of the District in seeking additional contract supplies of other contractors for transfer and use. Each of these policy actions and/or procedures reflects the position of the District with respect to protection of the underlying groundwater.

3. Map of district-operated wells and managed ground water recharge areas

The District owns and operates three (3) groundwater wells which purpose is solely to fill the pipelined distribution system with warmer water than what is delivered from the Friant-Kern Canal in order to prevent system damage as a result of an approximate 20 degree temperature differential. The District has a number of ways to determine the volume produced annually by these wells. The District has an estimate of the total volume required to initially fill the distribution system. The District also has pump efficiency test results for each well and a consumptive set of power billings related to each. From these figures a verification of the amount pumped can be determined. The estimate quantity to fill the system is 73 acre-feet. At the end of the irrigation season, this quantity is vacated from the system by pumping. It is pumped into the District's balancing reservoirs where it percolates back to useable groundwater. The pumped volume is not delivered to any grower(s), is not sold and does not contribute to satisfaction of crop demand. It has been noted as a quantity pumped based on USBR comments, however, it is not included in all the subsequent tables as it is not delivered to any grower(s).

4. Description of conjunctive use of surface and ground water

Conjunctive use was a principal issue when the District's distribution system was designed and constructed by the Bureau. When Friant Division-CVP water is available, water users are encouraged to use it and reduce or stop their groundwater pumping. This is

accomplished by adjusting the quantity of water that is allocated to each acre of land each irrigation season. The water users have the option to use the water or transfer its use within the District. Any unused water is billed at the end of the season. As the District's water supply is supplemental, access to a well to extract water from the underground is required. The aquifer underlying the District is recharged by reducing private pumping when supplemental surface waters are available, from precipitation and percolation from the Kaweah River, Tule River, Lewis Creek and Frazier Creek.

The District's policy of requiring payment for water, whether delivered or not, has been a topic of discussion for a long number of years. It has been debated, argued and made the topic of elections over the years. It has, however, survived intact. The principal basis is simple – to insure delivery of every drop of allocated supply into the District. The allocated supply is supplemented with inbound transfers whenever possible. Over time, policy modifications have been put into place to insure equity with respect to fallow lands, lands with new crops planted and growers electing, some for penetration purposes, to utilize some groundwater to meet total demand requirements. Exchanges and transfers between growers are allowed and the general return pool has been in place for a number of years. Each of these provisions allows for the objectives of the District to remain in place without punitive repercussions. The only example where conservation is not optimized is where a grower has a marginal well, does not want to or cannot replace it at that exact time and elects to hold on to the supply in case the well fails. The water is, however, not lost if not used by year-end. It must be paid for, but can be carried over, transferred or exchanged into a subsequent year. Conservation objectives can still be achieved.

5. Ground Water Management Plan

The District is currently in negotiations with Kaweah Delta Water Conservation District (KDWCD) to become a plan participant in KDWCD's Groundwater Management Plan, which was last updated in 2007 and is SB 1938 compliant.

6. Ground Water Banking Plan

The District does not currently have a groundwater banking plan.

C. Other Water Supplies

1. "Other" water used as part of the water supply

The District only delivers Federal Ag Water, as listed in Table 1 of Section 5. All other water used in the District is delivered by landowners through privately owned groundwater wells.

D. Source Water Quality Monitoring Practices

1. Potable Water Quality (Urban only)

Not Applicable – the District does not provide urban water.

2. Agricultural water quality concerns: *Yes* _____ *No* ✓
(If yes, describe)

3. Description of the agricultural water quality testing program and the role of each participant, including the district, in the program

Individual landowners are signator to the Kaweah Sub-watershed or the Tule Sub-watershed of the Southern San Joaquin Valley Water Quality Coalition.

4. *Current water quality monitoring programs for surface water by source (Agricultural only)*

General

For major portions of the last five (5) years, two (2) separate water quality monitoring programs were in place. Each of these programs has developed a history of water quality sampling events and test results and one is still conducted by specific water contractors. As each

of the conducting entities are public agencies, the developed information is a part of the public domain and is thus available to each of the contractors diverting water from the Friant-Kern Canal. While these programs are principally designed to address domestic water quality program issues, the generated data covers all of the constituents of concern related to agricultural uses. The program is as follows:

DHS Program

The Department of Health Services (DHS) has approved a monitoring program specific to four (4) permitted water systems diverting raw water from the Friant-Kern Canal. DHS approved the program for specific domestic suppliers covered by the approval action. A Certificate of Analysis indicating the constituents which are tested, the test methods and the minimum detection levels associated with the testing process is available upon request. The testing frequency is designed to assure compliance with state and federal drinking water quality programs and thus is more than sufficient to insure an adequate testing frequency for agricultural concerns.

E. Water Uses within the District

1. Agricultural

2009 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requirement (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitation (AF/Ac)	Appl. Crop Water Use (acre-feet)
Alfalfa	1,527	5.00	0.200	0.00	0.40	7,330
Almonds	542	2.80	0.022	0.00	0.40	1,313
Apples	95	3.70	0.023	0.00	0.40	316
Avocados	11	3.70	0.023	0.00	0.40	37
Beans, dry & edible	34	2.80	0.012	0.00	0.20	89
Berries	40	1.90	0.012	0.00	0.20	68
Cherries	135	3.70	0.023	0.00	0.40	449
Corn (Silage)	1,007	3.40	0.012	0.00	0.20	3,234
Corn, sweet	388	3.40	0.012	0.00	0.20	1,246
Cotton: (Upland)	378	3.90	0.005	0.00	0.10	1,438
Kiwis	64	3.80	0.020	0.00	0.20	232
Grapefruit	29	2.90	0.100	0.30	0.20	90
Grapes, table	1,502	3.80	0.020	0.00	0.20	5,437
Lemons and Limes	40	2.90	0.100	0.30	0.20	124
Persimmons	105	3.70	0.023	0.00	0.40	349
Oats	22	2.80	0.002	0.00	0.50	51
Olives	4,338	2.80	0.100	0.00	0.30	11,279
Oranges,Tangerines	11,760	2.90	0.100	0.30	0.20	36,456
Peaches	219	3.70	0.023	0.00	0.40	728
Pecans	56	2.80	0.022	0.00	0.40	136
Plums	235	3.70	0.023	0.00	0.40	781
Prunes	290	3.70	0.023	0.00	0.40	964
Pomegranates	240	3.70	0.023	0.00	0.40	798
Total Nursery	81	1.90	0.120	0.00	0.20	147
Walnuts	335	2.80	0.022	0.00	0.40	811
Wheat	10	2.80	0.002	0.00	0.50	23
Misc. Crops	258	2.80	0.012	0.00	0.20	674
Crop Acres	23,741					74,598

Total Irrig. Acres _____ (If this number is larger than your known total, it may be due to double cropping)

2. Types of irrigation systems used for each crop in current year

Crop name	*Total Acres*	*Level Basin - acres*	*Furrow – acres (inc. flood)*	*Sprinkler - acres*	*Low Volume - acres*	*Multiple methods - acres*
Alfalfa	1,527		1,527			
Almonds	542				542	
Apples	95				95	
Avocados	11				11	
Beans, dry & edible	34		34			
Berries	40				40	
Cherries	135				135	
Corn (Silage)	1,007		1,007			
Corn, sweet	388		388			
Cotton (Upland)	378		378			
Kiwis	64				64	
Grapefruit	29				29	
Grapes, table	1,502		1,502			
Lemons and Limes	40				40	
Persimmons	105				105	
Oats	22		22			
Olives	4,338				4,338	
Oranges, Tangerines	11,760		2,502		9,258	
Peaches	219		219			
Pecans	56				56	
Plums	235		235			
Prunes	290		290			
Pomegranates	240				240	
Total Nursery	81				81	
Walnuts	335		335			
Wheat	10		10			
Misc. Crops	258					258

3. Urban use by customer type in current year

Not Applicable

4. Urban Wastewater Collection/Treatment Systems serving the service area – current year

Not Applicable

5. Ground water recharge/management in current year (Table 6)

None – no water available.

6. *Transfers and exchanges into or out of the service area in current year (Table 6)*

None.

7. *Trades, wheeling, wet/dry year exchanges, banking or other transactions in current year (Table 6)*

None.

8. *Other uses of water in current year*

Pumped groundwater to fill system. System emptied to basins and returns to groundwater reservoir at end of season.

F. Outflow from the District (Agricultural only)

Districts included in the drainage problem area, as identified in "A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)," should also complete Water Inventory Table 7 and Appendix B (include in plan as Attachment L)

See Facilities Map, **Attachment A**, for the location of surface and subsurface outflow points, outflow measurement points, outflow water-quality testing locations

1. *Surface and subsurface drain/outflow in current year*

There are no surface outflow points from the District.

2. *Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program*

Not Applicable – there is no outflow.

3. *Outflow (surface drainage & spill) Quality Testing Program*

Not Applicable – there is no outflow.

Outflow (subsurface drainage) Quality Testing Program

Not Applicable – there is no outflow.

4. Provide a brief discussion of the District's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Individual landowners are signator to the Kaweah Sub-watershed or the Tule Sub-watershed of the Southern San Joaquin Valley Water Quality Coalition.

G. Water Accounting (Inventory)

1. Water Supplies Quantified

a. Surface water supplies, imported and originating within the service area, by month (Table 1)

See Section 5, Table 1.

b. Ground water extracted by the district, by month (Table 2)

See Section 5, Table 2.

c. Effective precipitation by crop (Table 5)

See Section 5, Table 5.

d. Estimated annual ground water extracted by non-district parties (Table 2)

See Section 5, Table 2.

e. Recycled urban wastewater, by month (Table 3)

See Section 5, Table 3.

f. Other supplies, by month (Table 1)

See Section 5, Table 1.

2. Water Used Quantified

a. Agricultural conveyance losses, including seepage, evaporation, and operational spills in canal systems (Table 4) or
Urban leaks, breaks and flushing/fire uses in piped systems (Table 4)

See Section 5, Table 4.

b. Consumptive use by riparian vegetation or environmental use (Table 6)

See Section 5, Table 6.

c. Applied irrigation water - crop ET, water used for leaching/cultural practices (e.g., frost protection, soil reclamation, etc.) (Table 5)

See Section 5, Table 5.

d. Urban water use (Table 6)

See Section 5, Table 6.

e. Ground water recharge (Table 6)

See Section 5, Table 6.

f. Water exchanges and transfers and out-of-district banking (Table 6)

See Section 5, Table 6.

g. Estimated deep percolation within the service area (Table 6)

See Section 5, Table 6.

h. Flows to perched water table or saline sink (Table 7)

See Section 5, Table 7.

i. Outflow water leaving the district (Table 6)

See Section 5, Table 6.

j. Other

None.

3. Overall Water Inventory

a. Table 6

See Section 5, Table 6.

H. Assess Quantifiable Objectives:

Identify the Quantifiable Objectives that apply to the District (Planner, chapter 10) and provide a short narrative describing past, present and future plans that address the CALFED Water Use Efficiency Program goals identified for the District.

The District has been identified as having lands within its boundary that are subject to quantifiable objectives. The identified quantifiable objectives address providing improved long-term diversion flexibility to increase the water supply for beneficial uses and to decrease flows to salt sinks to increase the water supply for beneficial uses.

In addition to importing surface water for irrigation and groundwater recharge purposes, District growers have improved on-farm irrigation systems to the extent that in excess of 63 percent of these systems are permanent, low volume systems. This has resulted in reduced losses to the soil mantle outside of the root zone. Resultant water savings have first been dedicated to improving crop yields with the periodic residual being the negotiating tool to allow the District to deal with reduced water supplies resulting from settlement of the San Joaquin River litigation and diversion reductions from the Sacramento-San Joaquin Rivers delta.

Section 3: Best Management Practices (BMPs) for Agricultural Contractors

A. Critical Agricultural BMPs

1. *Measure the volume of water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%*

Number of turnouts that are unmeasured or do not meet the standards listed above: 0

Number of measurement devices installed last year: 0, but 200 repaired or replaced

Number of measurement devices installed this year: 4, but 200 repaired or replaced

Number of measurement devices to be installed next year: 0, but 200 removed/check is the target

Types of Measurement Devices Being Installed	*Accuracy*	*Total Installed During Current Year*
Propeller Meters	±5%	8

2. *Designate a water conservation coordinator to develop and implement the Plan and develop progress reports*

Name: Michael D. Hagman *Title:* General Manager

Address: 240 W. Lindmore Avenue / P.O. Box 908 Lindsay, CA 93247

Telephone: (559) 562-2534 *E-mail:* mhagman@lindmoreid.com

3. *Provide or support the availability of water management services to water users*

See **Attachment F**, Notices of District Education Programs and Services Available to Customers.

The District supports the use of Mobile Labs by its growers to evaluate the irrigation practices of all users. This service is provided by several Mobile Labs in the San Joaquin Valley. Growers are responsible for contacting these labs for assistance. Although the District will assist in this effort, the final choice is up to the respective farm units. Growers receive a *Water Supply Outlook* report from the District each March. The report tabs include links to the Mobile Labs in

the area and reiterates the District support for the program.

a. On-Farm Evaluations

1) On farm irrigation and drainage system evaluations using a mobile lab type assessment

Note: Notwithstanding how notice of availability of farm evaluation services have been in the past, the newly minted conservation bulletin will contain specific details regarding the program purposes, elements and participation specifics.

	Total in district	*# surveyed last year*	*# surveyed in current year*	*# projected for next year*	*# projected 2nd yr in future*
Irrigated acres	23,741	0	0	2,200	2,200
Number of farms	961	0	0	50	50

2) Timely field and crop-specific water delivery information to the water user

Crop irrigation totals and field water use can be determined by the growers from data reported on their monthly water billing. Individual water events are recorded by on and off dates, with total water delivered summarized on the statements. Growers may inquire at the District office at any time if they want to know flows or delivery amounts to a specific turnout. Ditchtenders have this information with them on the canals each day and may also be asked specific water delivery questions. Since turnouts may deliver to multiple fields, it is the grower's responsibility to notify the Ditch tenders when a switch occurs. If this information is accurate, then statements can reflect accurate delivery amounts.

In addition, to the District supplied data noted above, each week, the Friant Water Authority issues a reproduction of crop coefficients to all of its contractors which are compiled by the Kings River Conservation District and made available by the District to its growers. The table lists the daily average for the previous seven (7) days and estimate of the average for the subsequent seven (7) days of crop coefficients. District water delivery information is provided to

each water user, each month in which delivery to a water user is made. This information can then be used by a water user to manage water used by field and crop.

b. Real-time and normal irrigation scheduling and crop ET information

See **Attachment F**, Notices of District Education Programs and Services Available to Customers.

Each week, the Friant Water Authority issues a reproduction of crop coefficients and CIMIS evapotranspiration rates to all of its contractors which are compiled by the Kings River Conservation District and made available by the District to its growers. The crop coefficients table lists the daily, average for the previous seven (7) days and an estimate of the average for the subsequent seven (7) days, while the CIMIS evapotranspiration rates table lists data for twelve (12) CIMIS stations located within the Friant Division, CVP service area and details daily, total for the previous seven (7) days, normal previous seven (7) days, variance percentage from normal and normal next seven (7) days, evapotranspiration rates.

Most normal year information pertaining to irrigation scheduling and crop evapotranspiration (ET), such as CIMIS data and crop coefficients, is available to the landowner/grower through many agencies or services. The following are examples of services and information that are available to growers:

- The office of Water Use Efficiency (OWUE), through the Department of Water Resources (DWR) provides CIMIS data free of charge to the public for the use in estimating crop water use for irrigation scheduling. This information can be found through the OWUE's CIMIS website at www.cimis.water.ca.gov;
- During the growing season, crop ET information is published in the local newspapers and broadcast daily over the radio for reference and use by any water user;
- The U.S. Weather Service currently provides real-time CIMIS ET data and forecasts on their local weather channels and on the NOAA website.

The examples listed above provide crop specific ET data that is based on real-time. In an effort to assist District landowners in the understanding of crop coefficient and

evapotranspiration rates, and how to develop water use for a specific crop, calculated examples will be published within the on-farm water conservation tools and strategies found in the Water Conservation Information Bulletins, as described in Section 3.3.d. of this report.

c. Surface, ground, and drainage water quantity and quality data provided to water users

A considerable portion of the acreage within the District is enrolled as participating in the Tule Sub-watershed and/or the Kaweah Sub-watershed of the Southern San Joaquin Water Quality Coalition. The Deer Creek and Tule River Authority and the Kaweah Delta Water Conservation District are the lead agencies for said sub-watersheds and each publish periodic newsletters dealing with current Irrigated Lands Regulatory Program issues, current water quality issues and responses and upcoming activities. The Southern San Joaquin Water Quality Coalition maintains a website which contains links to all submitted data, prepared reports and documents and links to state maintained water quality databases such as SWAMP. All of these sites are designed to be user friendly.

d. Agricultural water management educational programs and materials for farmers, staff, and the public

Program	*Co-Funders (If Any)*	*Yearly Targets*
Water Conservation Information Bulletins	Keller/Wegley Consulting Engineers Client Group	Quarterly Publications/Mailings
Friant Water Authority	Friant Division Contractors	Monthly Publications

See **Attachment F** for samples of materials and notices provided.

The Water Conservation Information Bulletins will be provided to the District to inform both the District and its growers of on-farm water conservation tools and strategies. This educational program is being partially funded by Keller/Wegley Consulting Engineers with the

balance of the cost covered by the District. See **Attachment F**, Notices of District Education Programs and Services Available to Customers, for the first and second publications.

e. other

None – no other information is currently provided.

4. Pricing structure - based at least in part on quantity delivered
Describe the quantity-based water pricing structure, the cost per acre-foot, and when it became effective.

The District has a water pricing policy which reflects the cost of providing water service to the landowner. The water bill which the landowner/grower receives reflects metered usage, date service started, the date service stopped and the quantity delivered in acre-feet. A sample of the District's billing form is attached.

In order to optimize the use of available supplies, the District establishes a common return pool each year. Landowners who are not able to, or desire not to use all of their water entitlement are able, by a defined cut-off date, to return supply to the pool for use by others. This return provision provides the incentive that, if release of the available supply occurs, the grower is relieved of the economic related costs of the retention of the supply. As the District is only able to provide a supplemental source of water and as a mechanism to address the overdraft issue, the District desires to see that the available contract supply is delivered each year. The District Board of Directors is of the opinion that sufficient relief mechanisms are in place to provide transfer and economic relief to any grower who, for whatever reason(s), opts not to schedule delivery of his/her entitlement during any given year.

5. Evaluate and describe the need for changes in policies of the institutions to which the district is subject

The Board of Directors and the District Manager review, at least on an annual basis, the policies of others effecting the District to insure consistency with the then current rules and

regulations of the District. Over the last several years, as is the current situation, there are a number of policies which the District has involved itself, both from a District perspective as well as that of the growers which it represents. These policy and resulting rules and regulations documents have been generated by local agencies such as the County of Tulare and the Friant Water Authority. Others have been generated at the state level such as the Irrigated Lands Regulatory Program. The bulk of the issues at the federal level involve Reclamation and concern, in particular, San Joaquin River Settlement implementation and water quality issues.

6. Evaluate and improve efficiencies of district pumps

Describe the program to evaluate and improve the efficiencies of the contractor's pumps.

The District contracts for efficiency test on both the main line pumps and the reservoir recovery pumps. Tests are conducted on an annual basis rotating between pumps and targeting pumps which demonstrate declining efficiency.

B. Exemptible BMPs for Agricultural Contractors

(See Planner, Chapter 2, Appendix C for examples of exemptible conditions)

1. Facilitate alternative land use

Drainage Characteristic	*Acreage*	*Potential Alternate Uses*
High water table (<5 feet)	0	Not Applicable
Poor drainage	0	Not Applicable
Ground water Selenium concentration > 50 ppb	0	Not Applicable
Poor productivity	0	Class 6 Lands are not eligible for water service

Describe how the contractor encourages customers to participate in these programs.

2. Facilitate use of available recycled urban wastewater that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils.

Sources of Recycled Urban Waste Water	*AF/Y Available*	*AF/Y Currently Used in District*
City of Lindsay	896	Unknown[(1)]
Strathmore Public Utility District	224	

[(1)]The majority of the water is recycled outside of the District boundary.

The basis exists for the District to be exempted from this BMP. Operations of and discharges from the wastewater treatment and disposal facilities of the City of Lindsay and the Strathmore Public Utility District are subject to compliance with orders adopted by the Regional Water Quality Control Board, Central Valley Region (RWQCB), an agency under the control of the California Environmental Protection Agency. These orders are specifically designed to insure that the discharges of treated effluent from and the management of biosolids generated by these facilities meet all applicable federal and state health and safety criteria. In addition, the adopted orders require applications of effluent and biosolids to crops and soils to be consistent with the demands. In order to insure compliance, each order contains specific monitoring and reporting requirements, including a monitor well network. Said network exists to insure that the leaching fraction from effluent applications and percolation from operational and storage facilities do not lead to degradation of the area's resources and interfere with subsequent beneficial uses of available resources. Results of the required monitoring programs are available to any interested party from the State's GAMA and SWAMP databases. This information is in the public domain.

When the RWQCB promulgates a new order, or proposes a change to an existing order, the District has the capability to respond as a Responding Party. The District has the capability, at this juncture in time, to comment on the RWQCB proposal. The District does not, however, have any jurisdictional or police authorities in this regard.

The District is impacted with respect to quantities of treated effluent available for meeting of crop demand. Amounts recycled to growers' lands are in lieu of ordering and delivery of District water. The relationships between the entities which generate treated wastewater and the growers who take possession of this supply for irrigation of their crops are

accomplished without action of the District. Availability and use of this supply offsets pumped groundwater as well as District surface water entitlement as the net effect is to allow release of the allocated surface entitlement from the grower accepting effluent to another grower requesting supplemental supply. It should be further noted that the majority of the treated effluent made available for recycling purposes has as its origin, water diverted from the Friant-Kern Canal. Recycled effluent therefore has a net positive effect on available District surface water as well as groundwater conditions.

3. Facilitate the financing of capital improvements for on-farm irrigation systems

The District maintains a listing of potential funding sources and has an established policy to provide assistance in completing funding application documents. The District is a member of the Farm Service Agency (FSA), formerly known as the Agricultural Stabilization and Conservation Service, which is part of the United States Department of Agriculture. The FSA administers programs concerning on farm conservation and grants loans to farms, through a 50 percent cost-share program for conservation related improvements. The District also financially participates in on-farm efficiency evaluations. Additional notice is planned for upcoming editions of the informational newsletter.

4. Incentive pricing

The following paragraphs describing incentive pricing are applicable to the pricing policy of the District. While certain conditions may change the price in any given year, the incentive and reasons for price adjustments remain the same from year to year. Rates have been set to encourage use of each grower's District allocation, with the option to return unneeded water to the District for re-allocation to others. This enables each grower to manage his supply as efficiently as possible, while assisting others and the District in utilizing the total supply where it

is needed. A recent policy change denies this capability to any parcel where a District lien is in place. (Refer to **Appendix C**, Number 20).

The inherent conservation tool which exists within the District is the contract and subsequent managed price of delivered water. Price is a significant factor in determining and assuring the most efficient use and management of irrigation water by water users within the District. A high level of efficient distribution and application systems exists within the District and growers are continuously increasing the efficiency of these systems. The incentive to decrease the cost of applied water, when applied water does not result in increased yield, is the primary element of cost control as is the farm operator's desire to improve on-farm efficiency, through reduced labor and power costs.

Billing policies for delivered surface water supply have been developed and are periodically modified based on a multiple number of factors, many of which are beyond the control of the District. These include billing policies of the USBR, the water pricing policies and procedures of the USBR, the reserve position of the District, the payment capability of the farm operators and the basis of assurance provided by the farm operator that the District will receive payment. Significant farm operator and landowner input is both sought out and received with regard to these policies.

The pricing policy of the District is based on striving for the delivery of surface water on a price basis which is competitive with groundwater pumping costs. This encourages the use of surface water to meet irrigation demands, when available, thereby preserving the groundwater resource for times when little or no surface water is available.

Water pricing policies established by the District are based on recouping a portion of the costs of securing and delivering the supply. As the basic goal for direct surface deliveries is to

optimize the conjunctive use capabilities of the District and to deliver in-lieu pumping water when same is available, verification by the District is accomplished on a periodic basis to assure that the price for delivered water is competitive with power costs associated with pumping groundwater within the District. The District tracks, by way of external inquiries, as well as landowner input, the costs associated with groundwater pumping and utilizes this input to verify the competitiveness of the established price for District supplies.

The billing process is fashioned in such a manner that, for delivered supplies, the farm operators are charged for water on a metered basis and billed following deliveries. In this fashion, farm operators are encouraged only to utilize that water which they need and are not penalized for unused water which may be available.

Certain growers have a historical habit of retaining, undelivered, all or a portion of the allocated portion of their declared available supply for the entire year. They opt to act in this manner to retain the supply so it is available in the event of the failure of a groundwater well or related pump and motor installation. The District has implemented rules and regulations to discourage this "insurance policy" attitude and its related impacts on District delivered water costs. The rules and regulations require that a party retaining their water supply in this fashion, even if it results in the available supply not being delivered, must pay for the cost of the water. The payment requirement grew out of the prior procedures where growers would retain their allocation, never run the water and no penalty would apply for making those decisions. The Board of Directors felt that, given the demand for surface water, such actions should be discouraged.

5. a) Line or pipe ditches and canals

Not applicable. The District's distribution system is a closed pipeline system.

b) Construct regulatory reservoirs

Regulatory reservoirs required for proper system operation have been constructed.

6. Increase flexibility in water ordering by, and delivery to, water users

See **Attachment G**, contractor 'agricultural water order' form
See Section 3.B.4

Ordering flexibility has been optimized. Orders can be hand delivered, phoned in, faxed in or electronically transmitted. Consideration being given to short of normal time shut-off capability, potentially with coverage of costs associated with extra staff time associated with modified service termination procedures.

7. Construct and operate district spill and tailwater recovery systems

All District spills are to the existing regulatory reservoirs as the delivery system consists of closed, pressurized pipelines. On farm tailwater, if any, is contained to grower lands. No water, once delivered, is returned to the District distribution system.

8. Plan to measure outflow.

The District distributes water supply through a closed, low-head piped system. Operational spills are minimal and are contained in regulatory reservoirs which are placed in locations in the District design to accept said waters and to recharge same to the groundwater reservoir. The distribution system is operated exclusively by District personnel, therefore minimizing such spill events. There are no outflows from the District. The District requests exemption from implementing this BMP as there are no outflows to measure or outflow locations where measuring devices can be installed.

Total # of outflow (surface) locations/points 0
Total # of outflow (subsurface) locations/points 0
Total # of measured outflow points 0
Percentage of total outflow (volume) measured during report year None

Identify locations, prioritize, determine best measurement method/cost, submit funding proposal

Location & Priority	*Estimated cost (in $1,000s)*				
	2009	*2010*	*2011*	*2012*	*2013*
There are no outflows from the District.	$0	$0	$0	$0	$0

9. Optimize conjunctive use of surface and ground water

The nature of the water supply available to the District is such that it can only supply supplemental water to the farm operators within the District. The District makes no guarantees or warranties as to the delivery of surface waters and has no areas which rely solely on the delivery of such supplies. Decisions are made on at least an annual basis as to whether or when surface water will be made available to the farm operators. There are periodic modifications made to the initial decision during years when considerable modification is made to the declaration of available supply by Reclamation and by reservoir release operations during the flood control season. In addition to the decision being based on information such as a determination by Reclamation as to the quantity of water available, added variables, such as the timing of the availability of such supplies based on storability characteristics in Millerton Reservoir and the crop types of farm operators, influence the decision.

To the maximum extent possible, the District establishes the delivery schedule on a basis to meet demands of the farm operators. Due to soil characteristics in the area, the District cannot deliver water for accrual to the groundwater basin which is not demanded instantaneously by the farm operators and then later retrieve supply from that reservoir on a schedule which farm operators control in order to meet crop demands.

10. Automate canal structures

Automation of the 1st Avenue lateral is in the implementation stage. This is the first element of the automation system. Subsequent elements will be considered for implementation based on the success of this element in achieving operational goals.

11. Facilitate or promote water customer pump testing and evaluation

See **Attachment F**, Notices of District Education Programs and Services Available to Customers

The District has and will continue to provide information to the growers relative to the availability of pump testing and efficiency services provided by the serving utility or local pump companies. The involvement of the District with private pump efficiencies is related to water conservation and overall resource management. The fact that a farmer may apply a given amount of water to a field with a pump which is operating at a less than optimum efficiency does affect the application time and the total quantity of water which is being demanded by the crop. With Board approval of this Plan, the District has plans to initially distribute and continuously make available a memorandum informing landowners with a listing of local participating pump test companies.

12. Mapping

GIS maps	*Estimated costs (in $1,000s)*[1]				
	2009	*2010*	*2011*	*2012*	*2013*
Layer 1 – Distribution system/base	*4*	*1*	*7*	*1*	*1*
Layer 2 – Drainage system (None)					
Suggested layers:					
Layer 3 – Ground water information	0	0	1	0	0
Layer 4 – Soils map (complete)					
Layer 5 – Natural & cultural resources (None)					
Layer 6 – Problem areas (None)					

[1] In thousands of dollars.

C. Provide a 3-Year Budget for Implementing BMPs

1. Amount actually spent during current year (2009).

BMP #		BMP Name	Actual Expenditure (not including staff time)	Staff Hours[1]
A	1	Measurement	$9,000	650
	2	Conservation staff	1,000	6
	3	On-farm evaluation /water delivery info	0	0
		Irrigation Scheduling	475	25
		Water quality	0	0
		Agricultural Education Program	6,000	10
	4	Quantity pricing	0	0
	5	Policy changes	0	12
	6	Contractor's pumps	30,000	24
B	1	Alternative land use	$0	0
	2	Urban recycled water use	0	0
	3	Financing of on-farm improvements	0	4
	4	Incentive pricing	0	8
	5	Line or pipe canals/install reservoirs	30,000	1,000
	6	Increase delivery flexibility	0	0
	7	District spill/tailwater recovery systems	0	0
	8	Measure outflow	0	0
	9	Optimize conjunctive use	16,000	80
	10	Automate canal structures	0	0
	11	Customer pump testing	0	0
	12	Mapping	0	0
		Total	$92,475	1,819

[1] Contracted Staff.

2. Projected budget summary for the next year (2010).

BMP #		BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours[2]
A	1	Measurement	$15,000	800
	2	Conservation staff	2,000	30
	3	On-farm evaluations/water delivery info	1,000	8
		Irrigation Scheduling	100	25
		Water quality	0	0
		Agricultural Education Program	10,000	10
	4	Quantity pricing	0	0
	5	Policy changes	0	0
	6	Contractor's pumps	500	8
B	1	Alternative land use	$0	0
	2	Urban recycled water use	300	4
	3	Financing of on-farm improvements	300	4
	4	Incentive pricing	0	8
	5	Line or pipe canals/install reservoirs	0	40
	6	Increase delivery flexibility	0	0
	7	District spill/tailwater recovery systems	0	0
	8	Measure outflow	0	0
	9	Optimize conjunctive use	15,000	100
	10	Automate canal structures	0	0
	11	Customer pump testing	0	0
	12	Mapping	1,000	24
		Total	$45,200	1,028

3. Projected budget summary for 3rd year (2011).

BMP #		BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours[2]
A	1	Measurement	$15,000	800
	2	Conservation staff	5,000	30
	3	On-farm evaluations/water delivery info	1,000	8
		Irrigation Scheduling	100	10
		Water quality	0	0
		Agricultural Education Program	10,000	10
	4	Quantity pricing	0	0
	5	Policy changes	0	0
	6	Contractor's pumps	500	8

[2]Contracted Staff

(continued)

BMP #		BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours[3]
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*300*	*4*
	3	*Financing of on-farm improvements*	*300*	*4*
	4	*Incentive pricing*	*0*	*8*
	5	*Line or pipe canals/install reservoirs*	*10,000*	*250*
	6	*Increase delivery flexibility*	*0*	*0*
	7	*District spill/tailwater recovery systems*	*0*	*0*
	8	*Measure outflow*	*0*	*0*
	9	*Optimize conjunctive use*	*15,000*	*100*
	10	*Automate canal structures*	*25,000*	*100*
	11	*Customer pump testing*	*0*	*8*
	12	*Mapping*	*8,000*	*24*
		Total	*$90,200*	*1,364*

4. Projected budget summary for 3rd year (2012).

BMP #		BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours[3]
A	*1*	*Measurement*	*$15,000*	*800*
	2	*Conservation staff*	*5,000*	*30*
	3	*On-farm evaluations/water delivery info*	*5,000*	*24*
		Irrigation Scheduling	*100*	*10*
		Water quality	*0*	*0*
		Agricultural Education Program	*10,000*	*10*
	4	*Quantity pricing*	*0*	*0*
	5	*Policy changes*	*0*	*0*
	6	*Contractor's pumps*	*500*	*8*
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*300*	*4*
	3	*Financing of on-farm improvements*	*1,000*	*8*
	4	*Incentive pricing*	*0*	*8*
	5	*Line or pipe canals/install reservoirs*	*10,000*	*250*
	6	*Increase delivery flexibility*	*0*	*0*
	7	*District spill/tailwater recovery systems*	*0*	*0*
	8	*Measure outflow*	*0*	*0*
	9	*Optimize conjunctive use*	*15,000*	*100*
	10	*Automate canal structures*	*25,000*	*100*
	11	*Customer pump testing*	*0*	*8*
	12	*Mapping*	*8,000*	*24*
		Total	*$94,900*	*1,384*

[3] Contract Staff

5. Projected budget summary for 3rd year (2013).

BMP	#	BMP Name	Budgeted Expenditure (not including staff time)	Staff Hours[4]
A	*1*	*Measurement*	*$15,000*	*800*
	2	*Conservation staff*	*5,000*	*30*
	3	*On-farm evaluations/water delivery info*	*5,000*	*24*
		Irrigation Scheduling	*100*	*10*
		Water quality	*0*	*0*
		Agricultural Education Program	*10,000*	*10*
	4	*Quantity pricing*	*0*	*0*
	5	*Policy changes*	*0*	*0*
	6	*Contractor's pumps*	*500*	*8*
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*300*	*4*
	3	*Financing of on-farm improvements*	*1,000*	*8*
	4	*Incentive pricing*	*0*	*8*
	5	*Line or pipe canals/install reservoirs*	*10,000*	*250*
	6	*Increase delivery flexibility*	*0*	*0*
	7	*District spill/tailwater recovery systems*	*0*	*0*
	8	*Measure outflow*	*0*	*0*
	9	*Optimize conjunctive use*	*15,000*	*100*
	10	*Automate canal structures*	*25,000*	*100*
	11	*Customer pump testing*	*0*	*8*
	12	*Mapping*	*8,000*	*24*
		Total	*$94,900*	*1,384*

[4] Contract Staff

Section 4: Best Management Practices for Urban Contractors

(Due to the adoption of revised BMPs in December 2008, this section will be updated in Spring 2009.)

Not Applicable

A. Urban BMPs

1. *Utilities Operations*
   - *1.1 Operations Practices*
   - *1.2 Pricing*
   - *1.3 Metering*
   - *1.4 Water Loss Control*

2. *Education*
   - *2.1 Public Information Programs*
   - *2.2 School Education*
3. *Residential*

4. *CII*
5. *Landscape*

B. Provide a 3-Year Budget for Expenditures and Staff Effort for BMPs

1. Amount actually spent during current year.

Year 2010 BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1.	*Utilities Operations*		
	1.1 Operations Practices	*$0*	*0*
	1.2 Pricing	*$0*	*0*
	1.3 Metering	*$0*	*0*
	1.4 Water Loss Control	*$0*	*0*
2.	*Education*		
	2.1 Public Information Programs	*$0*	*0*
	2.2 School Education	*$0*	*0*
3.	*Residential*	*$0*	*0*
4.	*CII*	*$0*	*0*
5.	*Landscape*	*$0*	*0*
	Total	*$0*	*0*

2. Projected budget summary for 2nd year.

Year 2011		Projected Expenditures	
BMP #	BMP Name	(not including staff hours)	Staff Hours
1. Utilities Operations			
	1.1 Operations Practices	*$0*	*0*
	1.2 Pricing	*$0*	*0*
	1.3 Metering	*$0*	*0*
	1.4 Water Loss Control	*$0*	*0*
2. Education			
	2.1 Public Information Programs	*$0*	*0*
	2.2 School Education	*$0*	*0*
3. Residential		*$0*	*0*
4. CII		*$0*	*0*
5. Landscape		*$0*	*0*
	Total	*$0*	*0*

3. Projected budget summary for 3rd year.

Year 2012		Projected Expenditures	
BMP #	BMP Name	(not including staff hours)	Staff Hours
1. Utilities Operations			
	1.1 Operations Practices	*$0*	*0*
	1.2 Pricing	*$0*	*0*
	1.3 Metering	*$0*	*0*
	1.4 Water Loss Control	*$0*	*0*
2. Education			
	2.1 Public Information Programs	*$0*	*0*
	2.2 School Education	*$0*	*0*
3. Residential		*$0*	*0*
4. CII		*$0*	*0*
5. Landscape		*$0*	*0*
	Total	*$0*	*0*

Section 5: District Water Inventory Tables

Table 1

Surface Water Supply

2009 Month	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Other Water (define) (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
Method							
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	493	0	0	0	0	0	493
April	1,199	0	0	0	0	0	1,199
May	2,628	0	0	0	0	0	2,628
June	3,714	0	0	0	0	0	3,714
July	5,216	0	0	0	0	0	5,216
August	6,821	0	0	0	0	0	6,821
September	6,186	0	0	0	0	0	6,186
October	3,261	0	0	0	0	0	3,261
November	2,060	0	0	0	0	0	2,060
December	0	0	0	0	0	0	0
TOTAL	31,578	0	0	0	0	0	31,578

Table 2

Ground Water Supply

2009 Month	District Groundwater (acre-feet)	Private Groundwater *(acre-feet)
Method		
January	0	815
February	0	1,895
March	73	2,359
April	0	687
May	0	13,011
June	0	16,381
July	0	20,981
August	0	9,248
September	0	2,031
October	0	0
November	0	0
December	0	0
TOTAL	73	67,408

*estimated

Table 2 indicates that extractions (67,661 af) exceeded safe yield (42,000 af) for the year. Water percolated from the irrigation leaching fraction was estimated at 24,641 af. In addition, a normal water supply allocation was not available for delivery.

Table 3

Total Water Supply

2009 Month	Surface Water Total (acre-feet)	District Groundwater (acre-feet)	Recycled M&I (acre-feet)	Total District Water (acre-feet)
Method				
January	0	0	27	27
February	0	0	27	27
March	493	0	27	520
April	1,199	0	27	1,226
May	2,628	0	27	2,655
June	3,714	0	27	3,741
July	5,216	0	27	5,243
August	6,821	0	27	6,848
September	6,186	0	27	6,213
October	3,261	0	27	3,288
November	2,060	0	27	2,087
December	0	0	27	27
TOTAL	31,578	0	324	31,902

*Recycled M&I Wastewater is treated urban wastewater that is used for agriculture.

Table 4

Distribution System

2009 Canal, Pipeline, Lateral, Reservoir	Length (feet)	Width (feet)	Surface Area (square feet)	Precipitation (acre-feet)	Evaporation (acre-feet)	Spillage (acre-feet)	Seepage (acre-feet)	Total (acre-feet)
Pipelines	649,440	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
TOTAL	649,440	0	0	0	0	0	0	0

Table 5

Crop Water Needs

2009 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requirement (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitation (AF/Ac)	Appl. Crop Water Use (acre-feet)
Alfalfa	1,527	5.00	0.200	0.00	0.40	7,330
Almonds	542	2.80	0.022	0.00	0.40	1,313
Apples	95	3.70	0.023	0.00	0.40	316
Avocados	11	3.70	0.023	0.00	0.40	37
Beans, dry & edible	34	2.80	0.012	0.00	0.20	89
Berries	40	1.90	0.012	0.00	0.20	68
Cherries	135	3.70	0.023	0.00	0.40	449
Corn (Silage)	1,007	3.40	0.012	0.00	0.20	3,234
Corn, sweet	388	3.40	0.012	0.00	0.20	1,246
Cotton: (Upland)	378	3.90	0.005	0.00	0.10	1,438
Kiwis	64	3.80	0.020	0.00	0.20	232
Grapefruit	29	2.90	0.100	0.30	0.20	90
Grapes, table	1,502	3.80	0.020	0.00	0.20	5,437
Lemons and Limes	40	2.90	0.100	0.30	0.20	124
Persimmons	105	3.70	0.023	0.00	0.40	349
Oats	22	2.80	0.002	0.00	0.50	51
Olives	4,338	2.80	0.100	0.00	0.30	11,279
Oranges,Tangerines	11,760	2.90	0.100	0.30	0.20	36,456
Peaches	219	3.70	0.023	0.00	0.40	728
Pecans	56	2.80	0.022	0.00	0.40	136
Plums	235	3.70	0.023	0.00	0.40	781
Prunes	290	3.70	0.023	0.00	0.40	964
Pomegranates	240	3.70	0.023	0.00	0.40	798
Total Nursery	81	1.90	0.120	0.00	0.20	147
Walnuts	335	2.80	0.022	0.00	0.40	811
Wheat	10	2.80	0.002	0.00	0.50	23
Misc. Crops	258	2.80	0.012	0.00	0.20	674
Crop Acres	23,741					74,598

Total Irrig. Acres_____ (If this number is larger than your known total, it may be due to double cropping)

Table 6

2009 District Water Inventory

Water Supply	Table 3		31,902
Riparian ET	(Distribution and Drain)	minus	0
Groundwater recharge	(intentional - ponds, injection)	minus	0
Seepage	Table 4	minus	0
Evaporation - Precipitation	Table 4	minus	0
Spillage	Table 4	minus	0
Transfers/exchanges/trades/wheeling	(into or out of the district)	plus/minus	0
Non-Agri deliveries	(delivered to non-ag customers)	minus	0
Water Available for sale to agricultural customers			31,902
Compare the above line with the next line to help find data gaps			
2009 Actual Agricultural Water Sales	From District Sales Records		31,578
Private Groundwater	Table 2	plus	67,408
Crop Water Needs	Table 5	minus	74,598
Drainwater outflow	(tail and tile not recycled)	minus	0
Percolation from Agricultural Land	(calculated)		24,388

Note: Groundwater was pumped to fill the distribution system prior to start-up. The distribution system was pumped down at the end of the irrigation season and allowed to percolate back to groundwater. As multiple pumps were used to dewater the system and they were of the portable type, no physical measurements were taken of the pumped quantity. The fill and void quantities should be almost the exact same amount. The balance of the pumping was to cover system leaks & seepage with pumpage being more than offset by percolation from the leaching fraction.

Table 7

Influence on Groundwater and Saline Sink

2009

Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence on	0
Estimated actual change in ground water storage, including natural recharge)	0
Irrigated Acres (from Table 5)	23,741
Irrigated acres over a perched water table	0
Irrigated acres draining to a saline sink	0
Portion of percolation from agri seeping to a perched water table	0
Portion of percolation from agri seeping to a saline sink	0
Portion of On-Farm Drain water flowing to a perched water table/saline sink	0
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink	0
Total (AF) flowing to a perched water table and saline sink	0

Table 8

Annual Water Quantities Delivered Under Each Right or Contract

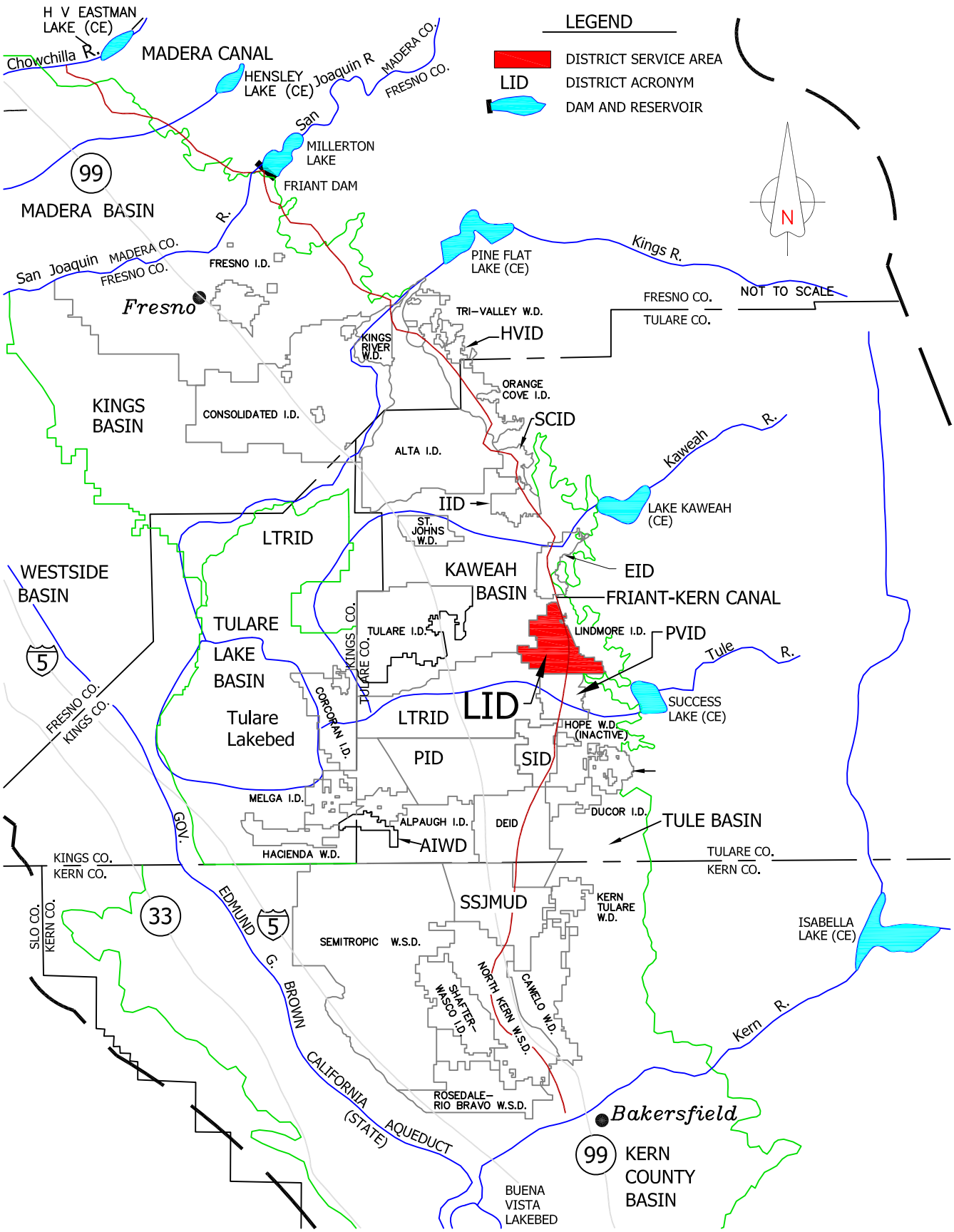
Year	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Other Water (define) (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
2000	35,999	0	0	0	0	0	35,999
2001	37,815	0	0	0	0	0	37,815
2002	34,416	0	0	0	0	0	34,416
2003	42,335	0	0	0	0	0	42,335
2004	38,119	0	0	0	0	0	38,119
2005	41,952	0	0	0	0	0	41,952
2006	41,727	0	0	0	0	0	41,727
2007	20,277	0	0	0	0	0	20,277
2008	33,984	0	0	0	0	0	33,984
2009	31,578	0	0	0	0	0	31,578
Total	358,202	0	0	0	0	0	358,202
Average	35,820	0	0	0	0	0	35,820

PLATES

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT



LOCATION MAP
AGRICULTURAL WATER MANAGEMENT PLAN
LINDMORE IRRIGATION DISTRICT

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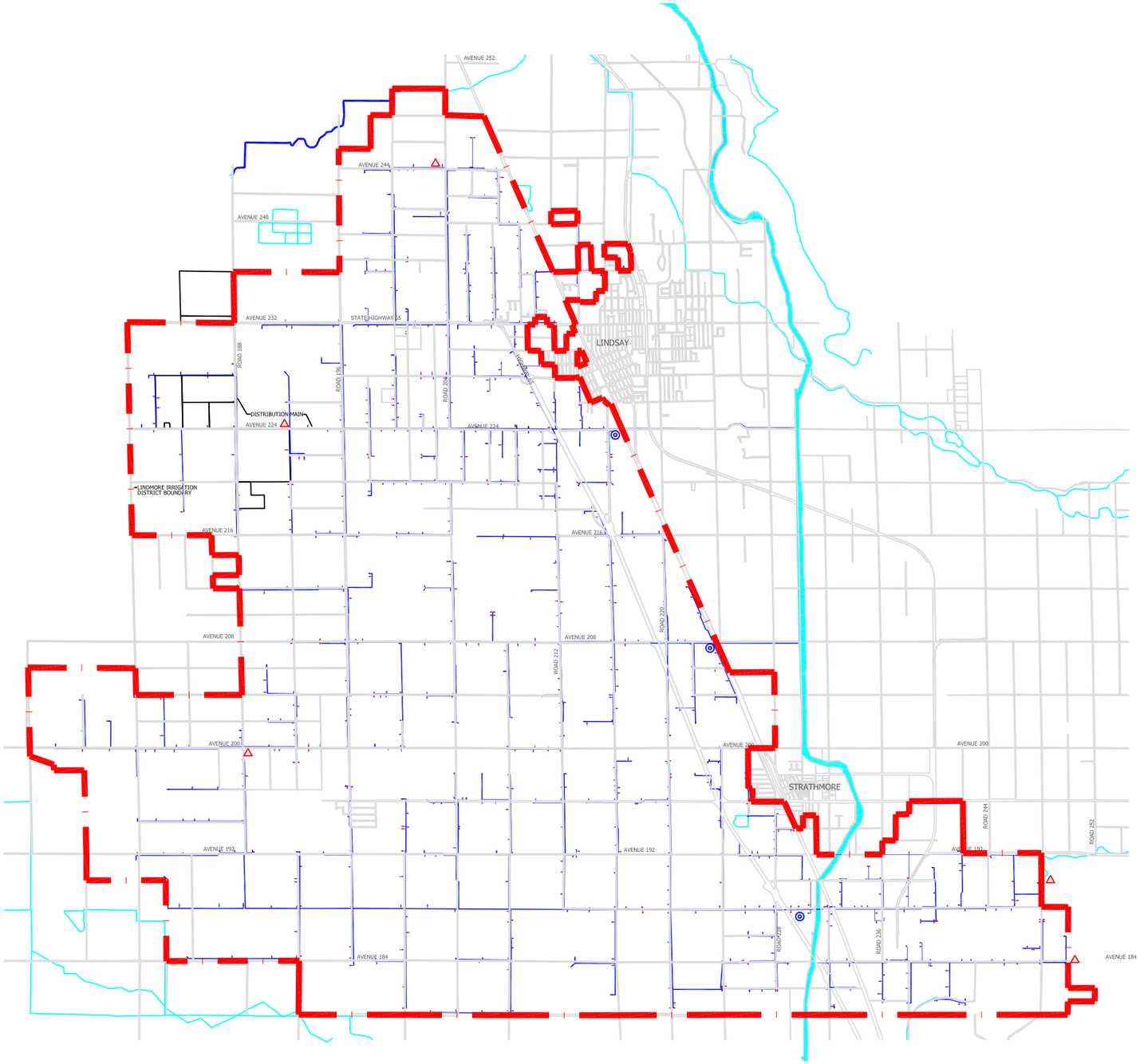
ATTACHMENT A

DISTRICT FACILITIES MAP

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT



DISTRIBUTION SYSTEM
AGRICULTURAL WATER MANAGEMENT PLAN
LINDMORE IRRIGATION DISTRICT

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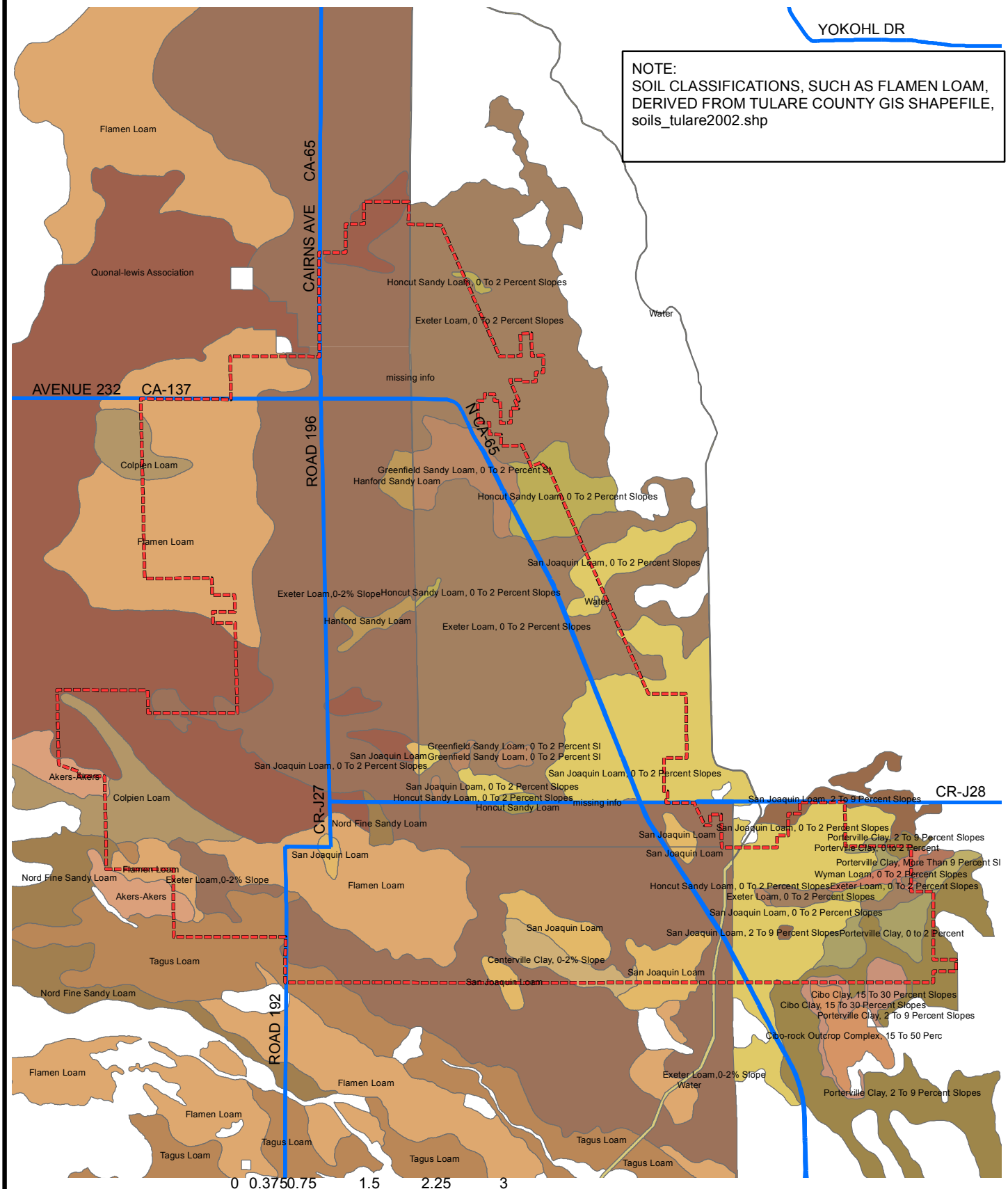
ATTACHMENT B

DISTRICT SOILS MAP

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT


YOKOHL DR
NOTE:
SOIL CLASSIFICATIONS, SUCH AS FLAMEN LOAM, DERIVED FROM TULARE COUNTY GIS SHAPEFILE, soils_tulare2002.shp
CA-65
CAIRNS AVE
AVENUE 232
CA-137
ROAD 196
CR-J27
CR-J28
ROAD 192
Flamen Loam
Quonal-lewis Association
Honcut Sandy Loam, 0 To 2 Percent Slopes
Exeter Loam, 0 To 2 Percent Slopes
Water
missing info
Colpien Loam
Greenfield Sandy Loam, 0 To 2 Percent Sl
Hanford Sandy Loam
San Joaquin Loam, 0 To 2 Percent Slopes
Exeter Loam,0-2% Slope
Akers-Akers
Nord Fine Sandy Loam
San Joaquin Loam
Centerville Clay, 0-2% Slope
Tagus Loam
Cibo Clay, 15 To 30 Percent Slopes
Porterville Clay, 2 To 9 Percent Slopes
Cibo-rock Outcrop Complex, 15 To 50 Perc
0 0.375 0.75 1.5 2.25 3
Miles
N
Legend
Lindmore ID Boundary
HIGHWAYS
SOIL CLASSIFICATIONS
WATER MANAGEMENT PLAN - UPDATE 2011
LINDMORE IRRIGATION DISTRICT
Path: S:\Lindmore ID\WMP UPDATE 2011\UPDATE 2011.mxd

ATTACHMENT C

DISTRICT RULES AND REGULATIONS

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT

LINDMORE IRRIGATION DISTRICT
RULES AND REGULATIONS
ADOPTED BY ACTION OF THE BOARD ON MARCH 8, 2011

NOTE: INFORMATION IN THE BODY OF THE RULES THAT ARE IN BOLD INDICATE A POLICY CHANGE FROM PRIOR YEARS. PLEASE CONTACT THE DISTRICT OFFICE IF YOU NEED CLARIFICATION OF ANY RULES.

ALLOCATION OF WATER

1. At the beginning of each irrigating season all water allocated to the Lindmore Irrigation District by the United States Bureau of Reclamation shall be pro-rated to each acre of land within the District equally according to the latest Assessed Valuation of the land (Article 2, Section 22250, Water Code of the State of California). (Board Policy exception – See item #3). Billings for the use of water will be billed monthly based on the quantity of water used by each landowner during the preceding month.

2. Unused quantities pro-rated water will be billed after the end of the season and payment shall be due no later than December 31 of each year. The end of the season will be when the distribution system operation is closed down for maintenance and pipeline replacement (generally the day before Thanksgiving). Unused water shall not be carried over to succeeding irrigation years.

3. No water shall be apportioned to parcels of five acres or less unless a specific request is made by the landowner. The standby charge will remain on those parcels that requested pro-rate.

4. Water pro-rated to any parcel may be transferred from one parcel of land to another, and from one parcel to another, including to other landowners within the boundaries of Lindmore Irrigation District (Article 2, Section 22250, Water Code). Prior to said transfer all current standby, water charges or fees due the District must be paid in full. Forms for such transfer may be secured at the Lindmore Irrigation District office. Such transfers can occur anytime during the operating water season (typically March 1 through the Monday before Thanksgiving**).** Landowners with the need and ability to beneficially use water in excess of their pro-rated allotment may contact the District to inquire if additional water is available due to another landowner's nonpayment of District fees such as the nonpayment of standby charges that have resulted in liens being placed on such property. Upon such an inquiry, the District hereby determines, pursuant to the Public Records Act, to release the names and addresses (but not usage records pursuant to Government Code § 6254.16) of landowners that the District has recorded liens on and who are not current on all payments so that the inquiring landowner may contact the delinquent landowner regarding a proposed transfer. Notwithstanding anything to the contrary, no transfer may occur without either the inquiring landowner or the delinquent landowner first paying all current standby, water charges and/or other fees due to the District. Once the transfer is approved, the obligation to pay for the water transferred shall be an obligation of the transferee.

5. All water introduced into the District is the property of the District and is subject to diversion, control and use by the District. No landowner or consumer acquires any proprietary right in the water by reason of such use, nor does such landowner or consumer acquire any right to resell or transfer (other than as provided herein) the water purchased or used, nor the right to use it on the premises or for a purpose other than that for which it was applied.

If a party uses water on land outside the District that was applied for use within the District, whether by routing through a conduit, first flowing the water through the land within the District, by recapturing it from drains, or otherwise, the District may (i) refuse future service; (ii) charge for the use of water on the outside land, at a rate fixed by the Board; and/or (iii) condition further receipt of water upon the landowner making such physical changes in his fields or irrigation system that the Board deems necessary and adequate to assure the District that no future use of District water to outside lands will occur.

6. Landowners having water entitlements greater than they can use will be allowed to assign their excess water to the "District Common Pool" for use by other growers in the District. However, Landowner shall not be relieved from his/obligation to pay for pro-rated supply until all water in the pool is used. If there is a balance in the pool at the end of the operating season, the assignee will be responsible to pay for an amount of the water in the pool in proportion to the relationship of pro-rated water to the total pool, and will then be billed for the water as unused. The annual deadline for the pool is typically the last business day of July. However, in the annual allocation and rate letter this date will be noted.

DISTRIBUTION OF WATER

7. The distribution of water shall be under the general supervision of the Operations Officer.

8. Orders for turn-on and turn-off shall be made at the office of the District, or telephoned to the office (559) 562-2534. No orders except those made through the office as above directed are authorized or accepted.

9. Orders for turn-on and turn-off shall be made not later than 9:00 o'clock in the morning of the day before the delivery of water is requested. Orders will be accepted any time during the day, for delivery at a time later than the following day.

10. No changes in water delivery, except for emergencies, will be made on Sundays.

11. No order for a flow of less than ten inches will be accepted for delivery through a six inch or larger meter, except where the user is willing to accept a charge for a ten inch flow, or to install a smaller meter or adapter at their cost.

12. On the day the water is ordered on or off, the watertender will service the meter at the time he passes on his regular run for the day. Orders for a certain hour cannot be accepted, but the watertender will co-operate with the wateruser as far as is possible to do so compatible with the efficient operation of the system. It is the wateruser's responsibility to see that the meter has been turned on or off as ordered.

13. When water has been turned on it shall run continuously day and night at the flow set by the watertender until he turns it off, and no turn-on will be made for runs of less than 24 hours. Changes to the flow must be called in to the District and a District staff person shall make the necessary adjustment. Excessive call backs during regular work periods will result in a charge (see Fines/Charges below). Call backs after regular hours, except for a District emergency or a power failure, will be assessed a charge (see Fines/Charges below).

14. Water used each month will be billed the first part of the following month.

15. Bills for water are due and payable at the office of Lindmore Irrigation District upon presentation.

16. Bills may be paid at the office of the District at **315 E. Lindmore Avenue in Lindsay, California** or payment may be mailed to Post Office Box 908, Lindsay, California 93247-0908.

17. If bills for water are not paid on or before the 25th (postmarks accepted) of the month the bills are presented, the account becomes delinquent and will be assessed a penalty.

18. A penalty for delinquent accounts (as noted above) will be charged at the rate of one and one half (1 ½) percent per month.

19. No water will be delivered to any land upon which there is a delinquent water account. Similarly, delinquent landowners shall not be allowed to transfer water to another landowner within the District without first bringing all delinquent accounts current and paid in full.

20. No water will be delivered to any land if the wateruser's stand-by account is delinquent.

<u>Though an allocation of water will occur on all eligible accounts at the beginning of the water season, Landowners must have all delinquent accounts cleared prior to receiving project water.</u>

GENERAL

21. The Board of Directors of Lindmore Irrigation District may regulate the use of water to prevent waste (Article 2, Section 22250, Water Code).

22. The landowner will be responsible for any leaks developing in the discharge side of meter stands.

23. No person shall modify, molest, tamper with or interfere with structures or devices used for the delivery of water owned by the district (typically all items before the turnout valve) without express written permission of the District.

24. The structures and lines of the District's system shall neither be used for the application of fertilizer nor for any other purpose which might damage or interfere with the operation of the system.

25. Water furnished by Lindmore Irrigation District shall not be used for drinking purposes, is not treated to make it safe for drinking purposes, and any person making such use of Lindmore water does so contrary to the purpose of the District, violating this definite order of the Board of Directors of the District at your own risk.

26. Any landowner in the Lindmore Irrigation District who sells a portion of a parcel of land served by one meter shall reach an agreement with the buyer relative to water service, and if such agreement indicated the installation of another meter, such meter shall be installed by Lindmore Irrigation District at its convenience and all costs of the installation shall be paid by either the seller of the land or the purchaser, as their agreement sets forth.

27. Persons interfering with the regulation of water in the District conduits are subject to prosecution and or fines. If any person takes water without permission of the District or authorized District staff, they may be subject to criminal prosecution and fines.

28. All water introduced into the District by District works is District water and is subject to re-diversion and use by the District. All such water, whether waste and/or seepage water, intercepted and used by consumers will be charged for at the rate established by the District. All return flows from water served by the District shall become the property of the District when such return flows enter a District lateral or surface drainage system, leave the boundaries of the landowner's property, or percolate into the District's sub-surface drainage system or other District facility. All such water, whether return flow, tail water, waste, and/or seepage water is subject to re-diversion and use by the District.

29. The agents, staff and employees of the District shall have free access at all times to the property being supplied with water from the District's system for the purpose of examining the lands irrigated, the flow of water thereon, the water facilities and any private canal, ditches, sumps or drains, and for any and all other lawful purposes.

30. Wateruser's shall be required at all times to keep their ditches and facilities for conveying and distributing waters in good condition so that water can be used without undue loss or unreasonable waste, and without damage to other lands. Lands must be prepared so that water can be distributed without waste and landowners shall construct adequate drainage facilities so that adjacent land will not be damaged. The District may refuse to deliver water to a consumer whose ditches and structures are not in a proper state of repair or whose land is not prepared to convey or use water in an economic and non-wasteful manner. Landowners shall use District water in a reasonable manner by applying said water to beneficial use.

EMERGENCIES

31. Under emergency circumstances, the District may be required to shut off all or some meters within in the District. If such an event occurs, District staff will inform all affected wateruser's when it is to be shut off and turned on whenever practicable.

32. To report an emergency or an emergency shut-off during business hours (weekdays at 7 am – 4:00 pm) simply call the District office at (559) 562-2534. During non-business hours, please call the District Emergency Response Phone at (559) 333-2386. The Emergency Response phone is with someone at all times. Additional numbers for emergency response (other than District issues) can be located in your phone book.

FINES/CHARGES

33. A $50.00 charge will be assessed to the wateruser's account for each emergency turn-off requested after regular working hours, unless due to loss of electrical power at the power company meter or when the event is a District operational malfunction.

34. A $150.00 fine will be made for turning on any water meter without following the proper ordering procedure and a $150.00 fine will be made for turning off a water meter without proper notification.

35. A $25.00 charge will be assessed to a wateruser's account for each emergency shut off/modification request during regular business hours (except for in the case of a District emergency or power supplier failure) in excess of three times per meter per year.

CHANGE IN RULES AND REGULATIONS

36. These rules and regulations are adopted in whole or part annually and may be amended or changed at any time by action of the Board of Directors of Lindmore Irrigation District.

LINDMORE IRRIGATION DISTRICT
RULES AND REGULATIONS

ADOPTED: January 8, 1963
AMENDED: January 13, 1970, February 9, 1971, June 10, 1975, December 16, 1975, July 11, 1978, March 13, 1979, November 10, 1981, January 11, 1983, January 10, 1984, January 14, 1986, January 12, 1988, January 10, 1989, July 11, 1989, June 12, 1990, March 10, 1998, September 8, 1998 and February 8, 2000, November 13, 2001.

ALLOCATION OF WATER

1. At the beginning of each irrigating season all water allocated to the Lindmore Irrigation District by the United States Bureau of Reclamation shall be pro-rated to each acre of land within the District equally according to the latest Assessed Valuation of the land (Article 2, Section 22250, Water Code of the State of California). (Board Policy exception – See item #3).

2. Unused pro-rate will be billed after the end of the season. The end of the season will be when the distribution system operation is closed down for maintenance and pipeline replacement (generally the day before Thanksgiving). Unused water will be billed and not carried over.

3. No water shall be apportioned to parcels of five acres or less unless a specific request is made by the landowner. The standby charge will remain on those parcels that requested pro-rate **(note the change in policy).**

4. Water may be transferred from one parcel of land to another, and from one landowner to another, in the Lindmore Irrigation District (Article 2, Section 22250, Water Code). Forms for such transfer may be secured at the Lindmore Irrigation District office.

5. LANDOWNERS HAVING WATER ENTITLEMENTS GREATER THAN THEY CAN USE WILL BE ALLOWED TO ASSIGN THEIR EXCESS WATER TO A COMMON POOL FOR USE BY OTHERS (IT IS SUGGESTED THAT ARRANGEMENTS BE MADE EARLY IN THE SEASON). ANY WATER REMAINING IN THE COMMON POOL AT THE END OF THE IRRIGATION SEASON WILL BE BILLED PROPORTIONALLY TO THOSE WHO PLACED WATER IN THE POOL.

DISTRIBUTION OF WATER

6. The distribution of water shall be under the general supervision of the watermaster.

7. Orders for turn-on and turn-off shall be made at the office of the District, or telephoned to the office (559) 562-2534. No orders except those made through the office as above directed are authorized or accepted.

8. Orders for turn-on and turn-off shall be made not later than 9:00 o'clock in the morning of the day before the delivery of water is requested. Orders will be accepted any time during the day, for delivery at a time later than the following day.

9. No changes in water delivery, except for emergencies, will be made on Sundays.

10. No order for a flow of less than ten inches will be accepted for delivery through a six inch or larger meter, except where the user is willing to accept a charge for a ten inch flow, or to install a smaller meter or adapter at his own cost.

11. On the day the water is ordered turned on or off, the watertender will service the meter at the time he passes on his regular run for the day. Orders for a certain hour cannot be accepted, but the watertender will co-operate with the wateruser as far as is possible to do so compatible with the efficient operation of the system. It is the waterusers responsibility to see that the meter has been turned on or off as ordered.

12. When water has been turned on it shall run continuously day and night at the flow set by the watertender until he turns it off, and no turn-on will be made for runs of less than 24 hours.

13. Water used each month will be billed the first part of the following month.

14. Bills for water are due and payable at the office of Lindmore Irrigation District upon presentation.

15. Bills may be paid at the office of the District, located at the intersection of Road 216 (Lindsay Boulevard) and Avenue 224 (Lindmore Avenue) or payment may be mailed to Post Office Box 908, Lindsay, California 93247-0908.

16. If bills for water are not paid on or before the 25th of the month the bills are presented, the account becomes delinquent.

17. One and one half (1 ½) percent per month penalty will be added to delinquent accounts on the 25th day of the month the bills are presented.

18. No water will be delivered to any land upon which there is a delinquent water account. **Landowners must have all delinquent accounts cleared prior to receiving project water for the season.**

19. **No water will be delivered to any land if either the first or second installment of the Standby charge becomes delinquent.**

GENERAL

20. The Board of Directors of Lindmore Irrigation District may regulate the use of water to prevent waste (Article 2, Section 22250, Water Code).

21. The landowner will be responsible for any leaks developing in the discharge side of meter stands.

22. No person shall modify, molest, tamper with or interfere with structures or devices used for the delivery of water, that interferes with the operation of the system.

23. Structures and lines of the District system shall not be used for application of fertilizer nor for any other purpose which might damage or interfere with the operation of the system.

24. Water furnished by Lindmore Irrigation District shall not be used for drinking purposes, is not treated to make it safe for drinking purposes, and anyone making such use of Lindmore water does so contrary to the purpose of the District, violating this definite order of the Board of Directors of the District and at his own risk.

25. Any landowner in the Lindmore Irrigation District who sells a portion of a parcel of land served by one meter shall reach an agreement with the buyer relative to water service, and if such agreement indicated the installation of another meter, such meter shall be installed by Lindmore Irrigation District at its convenience and all costs of the installation shall be paid by either the seller of the land or the purchaser, as their agreement sets forth.

EMERGENCIES

26. An emergency may occur when canal water may be shut off from the District lines. In such case, if possible, the water user will be notified of the shut-off and when service will be resumed.

27. During hours when the District office is not open, an emergency may occur making it necessary for the wateruser to have a meter shut off. In such case (after hours) call (559) 562-2534, the phone mate will give you the standby phone numbers. In case of actual emergency, you may telephone Bill Garland (559) 568-2291, Barry Collier (559) 562-2424, Marv Rowe (559) 781-3325 or Robert Baranek (559) 781-6098. Do not call these numbers except for actual emergency and in no case call them when the District office is open or for a water turn-on.

28. A charge of $25.00 will be made for each emergency turn-off requested after regular working hours, i.e., between 3:30 p.m. and 7:00 a.m. of the following day, and on Sunday, unless due to loss of electrical power at the power company meter.

29. A $25.00 fine will be made for turning on any water meter without following the proper ordering procedure and a $25.00 fine will be made for turning off a water meter without proper notification.

CHANGE IN RULES AND REGULATIONS

30. These rules and regulations may be amended or changed at any time by action of the Board of Directors of Lindmore Irrigation District.

ATTACHMENT D

DISTRICT SAMPLE BILLS

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT

STATEMENT

LINDMORE IRRIGATION DISTRICT

P.O. BOX 908 LINDSAY, CA 93247-0908

SMITH, JOE
[redacted]

BILLING PERIOD FROM	BILLING PERIOD TO	BILLING DATE
[redacted]	[redacted]	[redacted]

METER NUMBER

93.2WP-0.03N-0.4W

ACCOUNT NUMBER	AMOUNT ENCLOSED
950400	**$81.38**

DETACH AND RETURN THIS PORTION WITH YOUR REMITTANCE

REMIT TO: LINDMORE IRRIGATION DISTRICT
P.O. BOX 908, LINDSAY, CA 93247-090

BEGINNING DATE	BEGINNING READING	ENDING DATE	ENDING READING	ACRE FEET	RATE	DESCRIPTION	DATE	AMOUNT
[redacted]	319.23	10-29-02	320.78	1.55	$52.50	FORWARD	[redacted]	$81.38

ACRE FOOT ALLOTMENT THIS YEAR	TOTAL USED	REMAINING
45.00	74.00	-29.00

1½% PENALTY ADDED MONTHLY TO DELINQUENT ACCOUNTS. WATER ACCOUNTS BECOME DELINQUENT IF NOT PAID BY THE 25TH DAY OF THE MONTH

LINDMORE IRRIGATION DISTRICT
P.O BOX 908, LINDSAY, CA 93247-0908

950400

TOTAL DUE

BALANCE **$81.38**

TRANSFERRED -0-

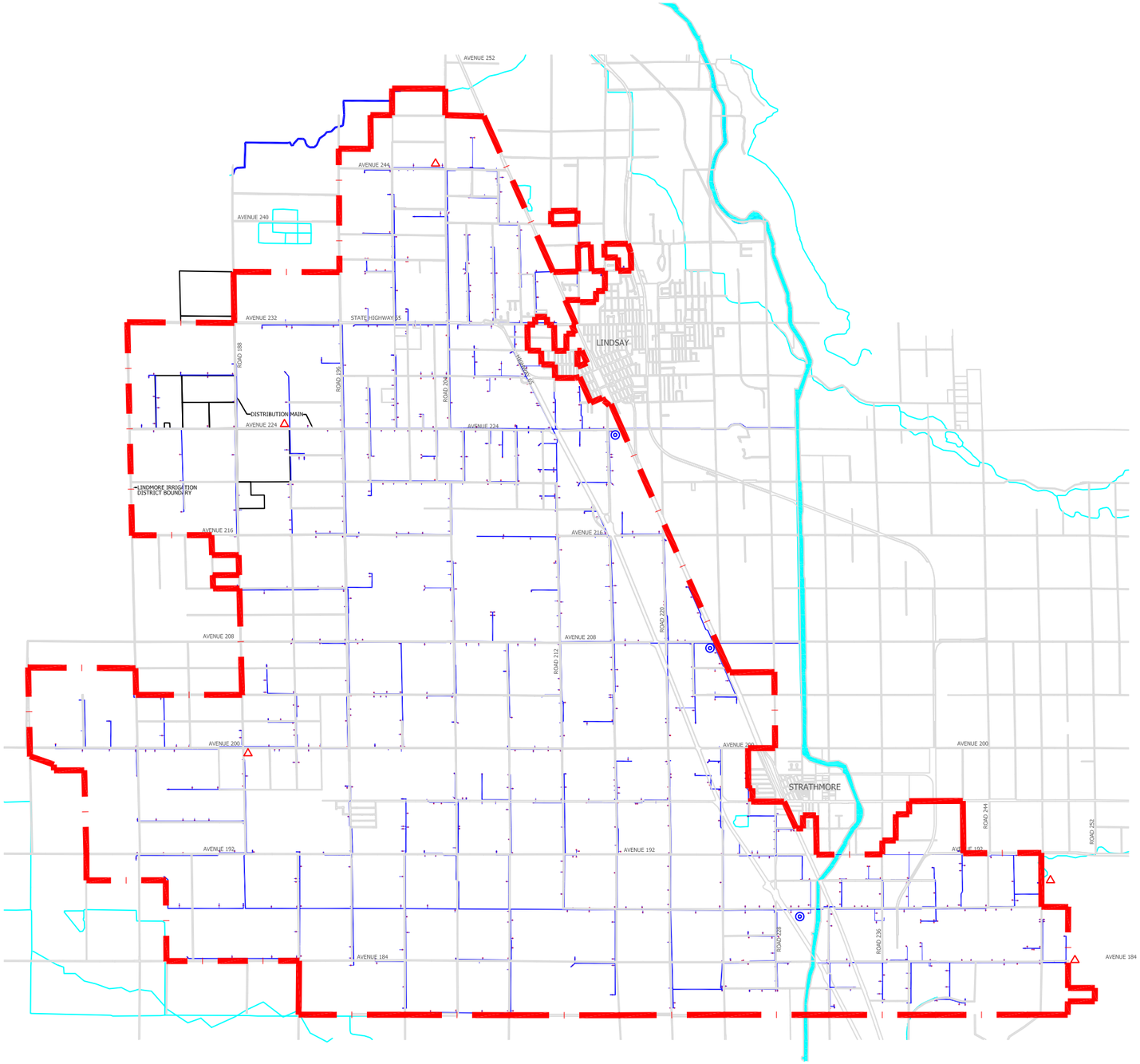
ATTACHMENT E

DISTRICT MAP OF GROUNDWATER FACILITIES

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT



MAP OF GROUNDWATER FACILITIES
AGRICULTURAL WATER MANAGEMENT PLAN
LINDMORE IRRIGATION DISTRICT

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ATTACHMENT F

NOTICES OF DISTRICT EDUCATION PROGRAMS AND SERVICES AVAILABLE TO CUSTOMERS

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT

LINDMORE IRRIGATION DISTRICT

P.O. BOX 908
315 E. LINDMORE
LINDSAY, CALIFORNIA 93247

Phone: (559) 562-2534
Facsimile: (559) 562-5642

Michael D. Hagman
General Manager

January 8, 2013

TO: DISTRICT LANDOWNERS

FROM: LID BOARD OF DIRECTORS

RE: AGRICULTURAL PUMP EFFICIENCY TESTING COMPANIES

This memorandum is being distributed to inform Landowners within the Lindmore Irrigation District of local companies which provide services related to pump efficiency testing. It should be noted that some of these companies are eligible for reimbursement through various programs or may conduct this service free of charge.

Allied Energy & Field Services, Inc.
P.O. Box 2606
Visalia, CA 93279
Office: (559) 622-9082

Farm Pump & Irrigation Co., Inc.
535 N. Shafter Avenue
Shafter, CA 93263

Irrigation Concepts
32151 Elmo Highway
McFarland, CA 93250
Office: (661) 792-1886

Kaweah Pump
15499 Avenue 280
Visalia, CA 93292
Office: (559) 747-0755

Kemble Hydro Tech
1111 Norboe Avenue
Corcoran, CA 93212
Office: (559) 992-3166

Mid Valley Pump Testing
P.O. Box 1751
Tulare, CA 93275
Office: (559) 684-7867

Pacific Irrigation, Inc.
11845 School Street
Bakersfield, CA 93307
Office: (661) 366-5555

Pacific Gas & Electric Company
1918 H Street
Bakersfield, CA 93301
Office: (800) 743-5000

Provost & Pritchard Consulting Group
1800 30th Street, Suite 280
Bakersfield, CA 93301
Office: (661) 616-5900

SA Camp Pump Company
17876 Zerker Road
Bakersfield, CA 93308
Office: (661) 399-2976

Southern California Edison Company
www.sce.com/forms/RequestPump Test.aspx

Valley Pump and Dairy Systems
2280 South "K" Street
Tulare, CA 93274
Office: (559) 686-2000

FRIANT WATER AUTHORITY

April 2011

Volume 23, No. 206

FRIANT Waterline

Big Runoff Begins But Is Under Control

Bureau's Restoration Water Decision Boosts Friant Use

Peak snowmelt and runoff have begun with remaining snowpack water content within the San Joaquin River watershed double what it should normally be on May 1.

U.S. Bureau of Reclamation and Friant Water Authority water managers, however, are not particularly worried. A well-planned strategy of aggressive Friant Dam releases, coupled with cooler than average spring temperatures to date, has carved out a great deal of welcomed storage space in Millerton Lake.

STORAGE CUT IN HALF

As of May 2, the reservoir behind Friant Dam contained 223,674 acre-feet of water, less than half of what was in storage on March 26 during a late winter and early spring stretch of potent storms.

With the San Joaquin River's full natural flow and actual Millerton inflow remaining at least a few thousand cubic feet per second less than releases on each

Please see **Runoff**, Page 3

Arvin-Edison Water Storage District

Accident victim John Collins, former Bakersfield College President, is reached on his partially submerged car in the Arvin-Edison Canal April 13 by a Bakersfield emergency staff member suspended from a helicopter following a harrowing accident.

Arvin, Friant Staffs Help Save Driver

Friant Water Authority and Arvin-Edison Water Storage District canal operations staff members assisted with quick and effective emergency water management actions during a dramatic April 13 rescue of former Bakersfield College President John Collins, driver of a car that veered into the Arvin-Edison Canal in Bakersfield.

The car driven by the 93-year-old Collins drifted across Truxton Avenue, through a fence and into the canal not far below its headworks from the Friant-Kern Canal.

SNAGGED BY CABLE

By good fortune, the car landed backwards in the canal, its trunk sprung open. Although the rushing current rapidly pushed the car nearly a half mile downstream, the trunk lid jammed into a safety cable where the vehicle wedged in place.

Had the vehicle not been snagged, the car might have been swept further down the

Please see **Rescue**, Page 3

Restoration Leader

Alicia (Ali) Forsythe, the new San Joaquin River Management Program Manager, and her colleagues will be kept busy with the draft environmental study. *(For more on her appointment, please see Page 3.)*

Friant Water Authority / J. Randall McFarland

SAN JOAQUIN RIVER RESTORATION PROGRAM

Draft Environmental Study Issued

An 8,000-page environmental blueprint that is to guide San Joaquin River Restoration Program (SJRRP) planners and designers has been released for public review and comment.

The long-awaited series of documents – a draft federal program environmental impact statement and state environmental impact report (PEIS/R) was released April 22 by the U.S. Bureau of Reclamation and the California Department of Water Resources (DWR).

'UNAVOIDABLY' DELAYED

For the first time in so public a manner, the Bureau acknowledged that the program that is to restore flows and a salmon fishery to all San Joaquin River reaches between Friant Dam and the Merced River has run into delays.

"Reclamation recognizes that some actions required by the Settlement are unavoidably behind schedule," the Bureau stated in a news release. "This includes certain channel and structural improvement projects that may be beneficial for

Please see **Study**, back page

New Deputy Resources Chief Meral Meets Friant Leaders

Jerry Meral, Governor Brown's new State Resources Agency Deputy Director, has had a first-hand look at key San Joaquin River Restoration Program locations and has received a primer on Friant Division water issues, needs, programs and hopes explained by numerous Friant water leaders.

Meral's April 7 view of the central San Joaquin Valley was marked by heavy rain and flood releases that swelled the San Joaquin River's flows and obscured evidence of critically dry conditions which had prevailed until this winter's big storm events.

VIEWS SWOLLEN RIVER

Friant Water Authority leaders conducted a tour of portions of west valley reaches of the San Joaquin River and its associated flood control bypass channels.

"We had planned to show some of the in-channel challenges being faced by the

Please see **Meral**, back page

Deputy Resources Secretary Jerry Meral (left) with Tulare Irrigation District General Manager J. Paul Hendrix

Friant Water Authority

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HOUSE WATER AND POWER SUBCOMMITTEE

Hearing In Fresno Airs Valley Water Frustration

San Joaquin Valley water supply frustrations were the focus of an April 11 House Water and Power Subcommittee field hearing at Fresno City Hall.

The hearing's published theme – "Creating Jobs by Overcoming Man-Made Drought: Time for Congress to Listen and Act" – set the tone that one speaker after another followed.

One Friant Water Authority board member, Kaweah-Delta Water Conservation District Vice President Mark Watte, testified during the well-attended hearing.

Those attending armed themselves with signs linking water supply curtailments – such as those that plagued the valley in the years before the current above-average precipitation – with job losses, economic woes, social problems, higher food costs and environmental difficulties.

FEDS BLAMED

The overwhelming mood was one of placing blame on federal government agencies, bureaucrats, regulations and court decisions for the grief caused in cutting Central Valley Project water supplies in the west valley to as low as 5% in 2009. That resulted in thousands of job losses, hundreds of thousands of idle acres and millions of dollars in economic damage.

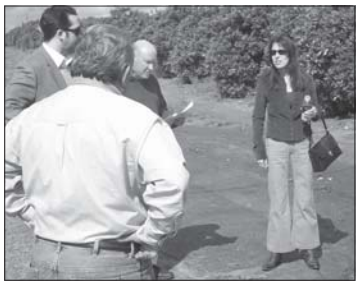
Water and Power Subcommittee Chairman Tom McClintock (*R-Elk Grove*) blamed the political left for advocating what he termed "politically motivated junk science."

"The House and Senate must act now," said a valley Congressman, Rep. Devin Nunes (*R-Visalia*) in commenting on the valley's water crisis and Delta pumping restraints. "The time for studying and talking is over."

Rep. Jim Costa (*D-Fresno*) told an interviewer after the hearing, "I think anytime you can continue to find greater awareness to the problems we're facing here. That's helpful."

One of the few dissenting voices was that of Larry Collins, Pacific Coast Federation of Fishermen's Associations Vice President, who defended

Please see **Hearing**, Page 3



Friant Water Authority

Assembly Member Makes Friant Visit

Assembly member Linda Halderman listens to a presentation by Orange Cove Irrigation District Manager Fergus Morrissey during an April 8 Friant Division tour. Also listening (left) is Assembly Republican Caucus Chief Consultant Doug Haaland and Friant Water Authority Assistant General Manager Mario Santoyo.

AROUND FRIANT

TULE RIVER

Corps Says No To Testing Higher Storage In Lake Success

Lake Success on the Tule River will remain less than half full in the wake of a U.S. Army Corps of Engineers decision to scrap a data gathering test this spring that would have increased permitted storage .

Had the plan been approved, the lake's maximum water surface elevation would have been increased 10 feet.

Storage in Lake Success has been restricted by the Corps since 2004 due to seismic safety concerns.

The surface level now is normally allowed no higher than 630 feet above sea level, or 40,000 acre-feet. That is 10 feet higher than the initial restriction.

The reservoir's as-built capacity is 82,300 acre-feet.

Corps officials for several years have been working on a solution to concerns that the dam's foundation and structure might be susceptible to failure in a major earthquake. The test had been intended to help the Corps find the highest safe level for water storage.

The Corps felt the risk was too high to undertake such a test..

Increased storage would have been beneficial to Tule River water users, and would have enhanced recreation.

Favoring the test were the Porterville Irrigation District, Tulare County, City of Porterville, Lower Tule River Irrigation District and Vandalia Irrigation District.

President Obama's 2012 budget includes funds to begin purchasing land below the dam, including a mobile home park. No funding is in place for replacing Success Dam. Published reports indicate the project cost is now estimated to be more than $450 million.

KERN RIVER

Isabella Dam Plans Expected

The U.S. Army Corps of Engineers is expected to conduct public meetings during May to explain how it believes problems with Isabella Dam can best be resolved.

The facility is now ranked among the Corps' most at-risk dams.

Seepage below the auxiliary dam, concerns over an earthquake fault running through the site and fears of insufficient spillway size have dogged the facility and led to restrictions on water storage.

A bigger auxiliary spillway will be proposed to be part of the solution so a greater spill could be handled without overtopping the earth-fill dams.

Lawsuit Will Challenge New Take Limits

State's Salmon Fishermen Are Gleeful Over 2011 Prospects, Long Season

While commercial salmon fishermen are ecstatic over prospects for what they believe could be their best season in years, a lawsuit is being prepared against two agencies over this season's expanded take limits.

A complaint was expected to be filed in early May (after WATERLINE press time) on behalf of the San Joaquin River Group Authority, of which the Friant Water Authority is a member, against the National Marine Fisheries Service (NMFS) and Pacific Fishery Management Council (PFMC).

The San Joaquin River Group Authority (SJRGA) is a joint powers authority that includes irrigation and water districts in the San Joaquin River Basin.

TAKE LIMITS QUESTIONED

The lawsuit, expected to be filed in a U.S. District Court, will seek a court determination that the agencies were arbitrary in their permitting of this season's salmon take limits, and requiring that the agencies start over.

At the heart of the suit is an allegation that the large amount of ocean take of salmon to be allowed by the new limits will cause species recovery programs in California rivers to suffer, resulting in even fewer fish in the future.

With the salmon season opening, the lawsuit is not expected to be of much help to the SJRGA this year.

"There is nothing we can do to put a stop to the current fishing season. Federal law does not allow that," a SJRGA statement said. "The best we can do is hope that over harvesting salmon is not permitted again in the future."

The lawsuit will reportedly seek to show that the PFMC's forecasting model is flawed and that hatcheries are having too much harmful influence. The plaintiff believes hatchery fish are increasing in the proportion of the fall-run Chinook salmon stock, leading to progressively less genetic diversity, less species resilience, and greater vulnerability to catastrophic occurrences such as poor ocean conditions that existed from 2007-09.

SALMON RECOVERY

Ronald D. Jacobsma, Friant Water Authority General Manager, said the SJRGA, as well as many other state and federal agencies, is working hard to promote recovery of fall-run Chinook and spring-run Chinook salmon in the San Joaquin basin.

Spring-run is a "threatened" species under the Endangered Species Act. It was extirpated from the basin, but there are substantial on-going efforts now to reintroduce spring-run.

A major part of that effort is to be the San Joaquin River Restoration Program in which Friant Division contractors of Central Valley Project water are involved deeply. The SJRGA's Vernalis Adaptive Management Program is also aimed in restoring salmon in the San Joaquin River Basin.

Fall-run salmon are not listed, but are an ESA candidate species.

AGENCIES TARGETED

SJRGA officials point out that the same state agency – the Department of Fish and Game (DFG) – and federal agencies (NMFS and U.S. Fish and Wildlife Service [USFWS]) authorizing a substantial commercial harvest of salmon this year have acted in past years to stop or critically reduce Delta water export pumping from the Delta to, in part, protect spring and winter-run salmon.

"The amount of fishing those agencies are allowing this year will kill many, many times more salmon than the Delta pumps ever did," the SJRGA said in a statement. The same state and federal agencies continually demand higher flows and more water released from reser-

Please see **Lawsuit**, Page 3

Arvin-Edison Water Storage District

Even with lower post-rescue flows, water still poured over the car.

Rescue: Water Cut To Help Victim Escape From Canal

Continued from front page

canal to where its cold and rushing waters fall into a siphon that carries Arvin-Edison's water under the Kern River.

Collins was also able to open the car's sunroof and stand on a seat as the car filled with cold water.

Four Arvin-Edison Water Storage District staff members responded immediately as did Bakersfield police and fire rescuers, who initially reported having trouble locating the car in the high rushing water.

FWA STAFF CUTS FLOWS

Once at the scene, rescuers got a life vest to Collins that he put on but could not secure. With the water moving too fast to put a swimmer in the water, Arvin-Edison asked the Friant Water Authority staff for an emergency cutoff of flows from the Friant-Kern Canal.

Friant's staff was able to quickly reduce the diversion by 485 cubic feet per second to greatly ease the rescue effort.

A helicopter was used to lift Collins out of the vehicle and onto a gurney. He was rushed to a Bakersfield hospital. Collins was cold but not injured. The car was then lifted by crane from the canal.

Eric Quinley, Friant Water Authority Maintenance Manager, said the Authority coordinated with the City of Bakersfield and river operators but no spill into the Kern River from the Friant-Kern Canal's Terminal Check was necessary during the 45 minutes that water was cut off from the Arvin-Edison Canal.

Hearing: Fresno Frustration

Continued from Page 2

the government's role in salmon protection by saying, "The more water you take out of [the Delta], the more you guarantee the death spiral of my industry." Collins blamed "corporate billionaire agribusinesses" for the troubles of fishermen, an assertion that was aggressively challenged by Nunes.

BAKERSFIELD MEETING

Meanwhile, a Bakersfield meeting was held April 27 by Kern County farmers, the Kern County Water Agency and Rep. Kevin McCarthy to seek solutions to the water supply crisis, including easing Endangered Species Act restrictions to curtail water deliveries.

Means of resolving Delta problems, including new water conveyance facilities such as a user-financed canal or tunnel, were discussed.

"We are not asking the government to pay for it, we are just asking to find common sense regulations so we can get it into the ground and get it moving," said McCarthy.

Frustration was also expressed over difficulties in separately meeting similar state and federal regulations.

Delta Bypass Study Hits A Snag In Court

A San Joaquin County judge has thrown a monkey wrench into state plans to drill and take soil samples for a water conveyance bypass tunnel or canal through or around the Delta.

The court ruled access to private lands proposed by the state Department of Water Resources under the Bay Delta Conservation Plan is a taking of land.

The ruling is a major problem for the facility's planners but was cheered around Stockton where a modern-day version of the Peripheral Canal is strongly opposed.

State officials said they may appeal but will work toward obtaining access by using eminent domain.

The state wants to take core samples at hundreds of locations for facility planning and design.

Lawsuit: Salmon Actions Targeted

Continued from Page 2

voirs to preserve and enhance the salmon fishery.

A state and federal goal of doubling natural production of Chinook salmon "will not be achieved if high levels of salmon fishing are allowed to continue," the SJRGA said.

SALMON RETURNS UP

Meanwhile, it is estimated this year's Chinook salmon run will be the best since 2007, with an estimated 730,000 Chinook now expected to return to the Sacramento River.

In 2009, a record-low 39,500 Chinook returned to the river to spawn. The commercial salmon season is to last through September. California's salmon fishing season in recent years has been cancelled or greatly curtailed.

SAN JOAQUIN RIVER RESTORATION

Reclamation Names New Program Manager

The San Joaquin River Restoration Program has a new U.S. Bureau of Reclamation manager.

Alicia (Ali) Forsythe, who has been the Acting Program Manager since January 2011, was named earlier this spring to head the complex planning and implantation effort.

"Ali is a great selection to head the Restoration Program," said Friant Water Authority General Manager Ronald D. Jacobsma. "She is uniquely qualified and experienced to deal with the multi-faceted challenges the program is already facing. We look forward to working with her as the Program Manager."

IMPLEMENTATION

The Restoration Program is being implemented as a result of the San Joaquin River litigation Settlement agreed to nearly five years ago by the lawsuit's environmental plaintiffs, led by the Natural Resources Defense Council (NRDC); Friant Division water agencies; and the U.S. government.

Restoration of flows and fishery habitat, with an objective of restoring a salmon fishery between Friant Dam and the Merced River, are program objectives along with a co-equal Water Management Goal. Under the Settlement, the Settling Parties agreed to strive to return all or much of the water given up by Friant districts for river restoration.

The Bureau's Regional Director, Donald Glaser, said Forsythe "has been involved with San Joaquin River issues for many years and has gained the respect of the organizations and individuals who are working together to implement this important restoration program."

COORDINATION

Forsythe is to coordinate with:

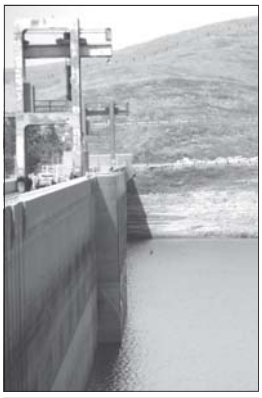
- The other SJRRP Implementing Agencies (U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Water Resources, California Department of Fish and Game).
- The Settling Parties (NRDC and Friant Water Authority).
- The Restoration Administrator (selected jointly by NRDC and FWA to provide recommendations regarding specific elements of the Settlement).
- Downstream landowners and water districts, and many other entities.

BACKGROUND

Forsythe has managed various National Environmental Policy Act, California Environmental Quality Act, water rights and restoration projects in both the public and private sectors.

She began her federal career with Reclamation in 2009 on the SJRRP staff. Forsythe led the program's interim flow activities and three on-going site-specific channel and structural improvements projects, oversaw the program's budget and schedule, and helped establish and implement SJRRP policies and direction. Prior to joining the Mid-Pacific Region, she was a project manager with CH_2M Hill.

Forsythe holds Bachelor of Science degrees in Environmental Studies and Hydrologic Sciences from the University of California, Santa Barbara.



Friant Water Authority

Millerton Lake's level, which looked low in mid-April, has dropped even more since then.

Runoff: Millerton Storage Makes Room For Snowmelt

Continued from front page

day for well over a month, reservoir storage has continued to decline. Flood releases into the river, which briefly were near the channel capacity of 8,000 c.f.s., have been reduced as demands have increased and reservoir storage has dropped. Nearly all of that flood release water has flowed to the ocean.

Friant districts were slow to step up water orders, for irrigation or groundwater recharge purposes, because all local streams have also been handling flood release flows. Until recently, spring rains had made many fields too wet for cultural work or irrigation.

RECOVERED WATER

A help in creating demand in early April was a decision by the U.S. Bureau of Reclamation to make available 460,000 acre-feet of Recovered Water Account (RWA) water credits for Friant Division long-term contractors under the San Joaquin River Restoration Program's Water Management Goal.

RWA water is available at a cost of $10 per acre-foot to all Friant Division long-term contractors who experience a reduction in water deliveries due to the flows called for in the Settlement to restore the San Joaquin River.

"These advanced RWA water credits are being made available to take advantage of this year's unusually wet hydrologic conditions for the purpose of reducing or avoiding future water supply impacts," a Bureau statement said. "The additional 460,000 acre-feet of RWA water credits is based on projections of anticipated future water supply impacts as a direct result of the flows called for in the Settlement."

FULL SUPPLY FOR NOW

In addition, the current Friant "uncontrolled season" water supply conditions – featuring full supplies of Class 1 and Class 2 water – are to continue throughout May and possible into June, according to Michael Jackson, Reclamation's Area Director in Fresno.

Deliveries of "Section 215" (unstorable) water to non-Central Valley Project contractors will continue until demands fill the Madera and Friant-Kern canals, Bureau staff member Ed Salazar said. He explained that even with the big storage reduction, a huge snowpack remains and more water needs to be moved out of fairly small Millerton Lake.

The May 1 snow surveys of nine San Joaquin River watershed courses show snowpack water content that is 199% of the May 1 average, and 163% of what is considered normal for April 1, the date upon which snow conditions are assumed to peak.

San Joaquin River runoff is currently expected to be 164% of average in the April-through-July peak period, or 2,060,000 acre-feet.

Corps Faces Lawsuit Over Rules For Levees

At a time when one federal agency after another is striving for improved riparian and fishery habitats along and in California rivers, another agency is demanding that vegetation vanish from Central Valley levees.

The U.S. Army Corps of Engineers in 2007 began imposing a clear-off-the-levees policy across the nation.

Now, two environmental organizations have served notice they will sue the Corps for violating the Endangered Species Act (ESA).

The Sacramento *Bee* reported that the Corps' rules do not state implicitly that all trees and vegetation – except for grass – must be eliminated but such is the practical effect.

Should levee operators not comply and a damaging flood were to occur, federal aid would not be forthcoming.

The Corps has suspended the rules from taking effect within the Central Valley until 2012.

ALLEGATIONS

Friends of the River and Defenders of Wildlife plan to sue against the rules. They allege the Corps failed to consult as required with other federal agencies to ensure the rules would not cause environmental harm. Nor did the Corps study environmental consequences, as required by the ESA, the organizations say.

Friant Water Authority / J. Randall McFarland

As the flood release-swollen San Joaquin River flows by at Sand Slough, north of Dos Palos, Friant Water Authority Water Resources Manager Stephen Ottemoeller points to a map to show state Deputy Resources Secretary Jerry Meral key locations in the San Joaquin River Restoration Program between Friant Dam and Merced River.

Study: Restoration's Impacts

Continued from front page

successful reintroduction of salmon." The latter is currently scheduled to occur by the end of 2012.

The schedule and projects were included in the Settlement of 18-year litigation reached several years ago by the plaintiffs – an environmental coalition led by the Natural Resources Defense Council – on one hand and the U.S. government along with the FWA and many of its member Friant Division districts on the other.

The Bureau says it "will promptly initiate consultation with the parties to the [San Joaquin River] Settlement to develop a new schedule based upon the PEIS/R that assures implementation of the Restoration Program in a manner that addresses the requirements of the Settlement for expeditious action while meeting the requirements of the legislation to minimize impacts on third party interests."

FOUR HEARINGS IN MAY

Four public hearings and open houses of 2½ hours each have been scheduled in valley locations during May to explain the PEIS/R, which took three years to compile, as part of a 60-day public comment period. (*Please see story, lower left.*)

Federal and state officials say the joint document describes direct, indirect and cumulative impacts of implementing the SJRRP. Agencies involved include Reclamation, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the California Department of Fish and Game and DWR.

General Manager Ronald D. Jacobsma said the Friant Water Authority's first task is to coordinate review and comment responsibilities among Authority and member district staff members. Comments on the massive document are due June 21.

The PEIS/R is required under federal and state laws, and is considered crucial to implementing the comprehensive, long-term effort to restore flows to the San Joaquin River below Friant Dam to restore a self-sustaining Chinook salmon fishery in the river. The SJRRP is also to reduce or avoid adverse water supply impacts from restoration flows.

Four Hearings Set On Restoration's Environmental Plan

Four public hearings will be held from May 24-26 around the Central Valley as the U.S. Bureau of Reclamation and California Department of Water Resources solicit input on the San Joaquin River Restoration Program's newly released draft program environmental impact statement and environmental impact report.

Each public hearing will include an open house portion during which the Restoration Program staff will be available to talk with public. Formal public hearings will follow to gather comments.

The meetings will be held:

In Visalia

- Tuesday, May 24, 10 a.m. - 12:30 p.m., Lampliter Inn, 3300 West Mineral King Avenue.

In Fresno

- Tuesday, May 24, 6 p.m. - 8:30 p.m., Piccadilly Inn-University, 4961 North Cedar Avenue.

In Los Banos

- Wednesday, May 25, 6 p.m. - 8:30 p.m., Merced County Fairgrounds, 403 F Street.

In Sacramento

- Thursday, May 26, 1:30 p.m. - 4 p.m., Holiday Inn-Capitol Plaza, 300 J Street.

Meral: Visits River, Friant

Continued from front page

Bureau of Reclamation and Department of Water Resources in implementing river restoration, but most of what we'd hoped to see was under water from the flood releases," said Ronald D. Jacobsma, Friant Water Authority General Manager.

STORAGE NEED

The extremely soggy condition had an upside, Jacobsma added, including an opportunity to view local West Side seepage under levees and resulting field-flooding problems, caused by high groundwater, of the sort that have occurred during early San Joaquin River Restoration Program interim flows.

"It also gave us a great opportunity to show the need for more storage – on the surface and underground – to capture high runoff flows when they are occurring, reduce flooding threats and gain longer-lasting water supply benefits for the environment and Friant users who are providing the river restoration flows," he said.

Meral in the past has expressed reservations on the need for new surface water storage projects.

The San Joaquin River has one proposed new reservoir project – Temperance Flat in the upper end of the CVP's Millerton Lake, northeast of Fresno.

'MUCH IN TOUCH'

Jacobsma noted that Meral, who served as Department of Water Resources Deputy Director during Brown's first administration from 1975-83, is well known for his support and involvement in the environment and its issues.

"Jerry Meral is also very much in touch with the practical problems and real needs that California water providers have to deal with for their customers," Jacobsma said.

> **'He was keenly interested in everything we showed him and points of view we presented'**
> —RONALD D. JACOBSMA

"He was keenly interested in everything we showed him and points of view we presented on surface water storage development, infrastructure needs, Delta solutions and conveyance, groundwater issues and river restoration."

TULARE MEETING

During a luncheon meeting later in Tulare hosted by the Friant Water Authority and Tulare Irrigation District, Meral listened intently as directors and managers from several Friant Division contractors of Central Valley Project water spoke.

They outlined past and present programs, along with future plans and desires.

All of the projects they discussed have been aimed at further improving beneficial water delivery and on-farm use efficiency, and the region's already extensive system of groundwater storage and water banking.

DELTA OVERSIGHT

Meral is in charge of the Bay-Delta Conservation Program, which is charged with finding solutions to the Delta's many infrastructure, environmental, water quality and water supply problems.

Meral, former Planning and Conservation League Executive Director, is again on the front line in debate over whether to build alternative water conveyance through or around the Delta. Even while many in the environmental community were opposing such a plan, Meral pushed for the construction of a controversial Peripheral Canal that was ultimately defeated by California voters in November 1982.

A renewed plan is now focusing increasingly on development of a large tunnel to bypass the fragile Delta in order to move north state water to the CVP and state Water Project pumps near Tracy.

Friant Water Authority / J. Randall McFarland

Harvey Bailey, Friant Water Authority Chairman and Orange Cove Irrigation District President, explains the importance of San Joaquin River water delivered to Orange Cove growers and city residents through the Friant-Kern Canal (background). Fifty-five participants in the Water Education Foundation's San Joaquin Valley tour also visited Friant Dam, the San Joaquin River and many other valley water features April 12-15.

FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA

		THIS YEAR 07/27/11	LAST WEEK	LAST YEAR 07/28/10
RESERVOIR STORAGE (A.F.)	CAPACITY		STORAGE	
Southern California Edison:				
Vermillion (Edison)	125,000	122,485	123,001	122,126
Florence	64,400	63,750	61,717	58,539
Huntington	89,000	87,177	87,162	87,421
Shaver	135,300	134,260	131,614	122,624
Sub-total (Big Creek)	413,700	407,672	403,494	390,710
Mammoth Pool	122,000	120,892	120,981	116,420
Redinger	26,100	24,168	24,235	24,270
Sub-total Southern California Edison	561,800	552,732	548,710	531,400
Pacific Gas & Electric:				
Crane Valley (Bass Lake)	45,400	34,557	34,620	34,370
Kerckhoff	4,200	4,157	3,621	3,630
Sub-total P G & E	49,600	38,714	38,241	38,000
TOTAL UPSTREAM STORAGE	611,400	591,446	586,951	569,400
MILLERTON LAKE	520,500	498,774	515,245	440,617
TOTAL STORAGE	1,131,900	1,090,220	1,102,196	1,010,017
INFLOW & RELEASE DATA (C.F.S.)				
Millerton Releases:				
Madera Canal		1,149	1,048	894
Friant-Kern Canal		4,195	4,111	3,608
San Joaquin River		347	349	349
Spillway		0	0	0
Total Millerton Releases		5,691	5,508	4,851
Actual Millerton Inflow		5,252	4,698	2,330
Computed Natural River (@Friant)		4,626	5,233	1,377
SAN JOAQUIN RIVER (A.F.)				
This Month:				
Actual to-date		434,059	366,678	228,648
Forecasted		840,000	840,000	300,000
April/July Period:				
Actual to-date		2,199,963	2,132,582	1,520,936
Forecasted		2,240,000	2,240,000	1,550,000
Last Year Actual				1,535,227
Water Year:				
Actual to-date		3,081,730	3,014,349	1,951,497
Forecasted		3,313,000	3,313,000	2,081,000
Last Year Actual				2,028,707
ESTIMATED WATER YET TO BE DELIVERED (A.F.)				
Contract Year Ending February 28		921,397*	1,046,245*	599,202

*Figure is based on 100% Class I, 20% Class II, plus estimated carry over of 63,390 AF, minus District usage and SJR releases.

Not included in estimated water to be delivered is the current uncontrolled season water now available.

FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA

PRECIPITATION DATA

REPORTING STATIONS:	AVERAGE (INCHES)	THIS YEAR 07/27/11 ACCUMULATIVE TO DATE (INCHES/PERCENT AVG)	LAST YEAR 07/28/10 ACCUMULATIVE TO DATE (INCHES/PERCENT AVG)
HUNTINGTON			
This Month	0.32	0.20 / 63	0.04 / 13
Seasonal Average*	0.32	0.20 / 63	0.04 / 13
Annual Average	42.73	0.20 / 0	0.04 / 0
CRANE VALLEY			
This Month	0.06	0.00 / 0	0.00 / 0
Seasonal Average*	0.06	0.00 / 0	0.00 / 0
Annual Average	40.62	0.00 / 0	0.00 / 0
FRIANT			
This Month	0.01	0.00 / 0	0.00 / 0
Seasonal Average*	0.01	0.00 / 0	0.00 / 0
Annual Average	14.33	0.00 / 0	0.00 / 0

* Seasonal Average (July - June) is through the current month

MISC RIVER/RESERVOI	CAPACITY (A.F.)	STORAGE (A.F.)	RELEASE (C.F.S.)	INFLOW (C.F.S.)
Chowchilla/Buchanan	150,000	136,746	170	37
Fresno/Hidden	90,000	49,798	285	0
Kings/Pine Flat	1,000,000	938,709	7,141	4,561
Kaweah/Terminus	185,000	149,942	2,225	859
Tule/Success	82,314	40,255	117	89
Kern/Isabella	570,000	339,597	2,464	1,848

FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA

CVP/SWP SAN LUIS OPERATIONS

PUMPING INSTANTANEOUS	MAX. FLOWRATE (C.F.S.)	THIS YEAR 07/27/11	LAST WEEK FLOWRATE (C.F.S.)	LAST YEAR 07/28/10 Average
Tracy P.P.	4,600	4,191	4,067	4,248
Banks P.P.	10,000	7,095	7,112	6,010
MONTH TO DATE				
Tracy P.P.		215,157	157,173	220,421
Banks P.P.		362,659	263,267	281,208
SEASON TO DATE (Since October 1)				
Tracy P.P.		1,996,117	1,938,133	1,585,260
Banks P.P.		3,049,675	2,950,283	1,638,198
SAN LUIS RESERVOIR	CAPACITY (A.F.)		(A.F.)	
Federal	980,000	793,658	833,952	421,040
State	1,060,000	930,693	930,439	517,125
Total	2,040,000	1,724,351	1,764,391	938,165
SAN LUIS RESERVOIR		NET DAILY STORAGE CHANGE		
Federal		(8,556)	(4,697)	(8,114)
State		261	94	(1,701)

SACRAMENTO-SAN JOAQUIN DELTA FLOW INDICES

	FLOWRATE (C.F.S.)
Delta Outflow Index	8,598
Sacramento River @ Freeport	16,455
San Joaquin River @ Vernalis	5,449
Total Delta Inflow	24,476

FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA

CIMIS EVAPOTRANSPIRATION RATES

REPORTING STATION #	REPORTING STATION	YESTERDAY 7/26/2011 (Inches)	TOTAL PAST 7 DAYS (Inches)	NORMAL PAST 7 DAYS (Inches)	VARIANCE FROM NORMAL (%)	NORMAL NEXT 7 DAYS* (Inches)
5	Shafter/USDA	0.26	1.81	1.82	-1	1.78
15	Stratford	0.30	2.08	1.93	8	1.88
39	Parlier	0.25	1.78	1.77	1	1.71
80	Fresno State	0.28	2.01	1.91	5	1.87
86	Lindcove	0.26	1.83	1.80	2	1.75
125	Arvin-Edison	0.30	2.09	1.93	8	1.89
138	Famoso	0.26	1.83	1.94	-6	1.89
142	Orange Cove	0.29	2.10	1.93	9	1.88
145	Madera	0.28	1.99	2.14	-7	2.08
148	Merced	0.26	1.86	1.76	6	1.73
169	Porterville	0.25	1.83	1.86	-2	1.82
182	Delano	0.26	1.83	1.94	-6	1.89

FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA

CROP COEFFICIENTS 27-Jul-11

Crop (Description)	Today	Avg. Prev. 7 Days	Avg. Next 7 Days
Alfalfa (average)	0.95	0.95	0.95
Almonds (Feb. 20 leafout, Nov. 15 leafdrop)	0.96	0.97	0.95
Almonds (Mar. 1 leafout, Nov. 15 leafdrop)	0.97	0.97	0.96
Beans (Apr. 1 plant date, Aug. 1 harvest)	0.42	0.53	0.25
Beans (May 1 plant date, Aug. 15 harvest)	0.90	1.03	0.77
Beans (Jun. 1 plant date, Sep. 15 harvest)	1.09	1.08	1.09
Citrus (year round)	0.65	0.65	0.65
Corn (Apr. 15 plant date, Sep. 15 harvest)	1.10	1.10	1.10
Cotton (Apr. 1 plant date, Sep. 20 defoliate)	1.25	1.25	1.24
Cotton (Apr. 15 plant date, Oct. 1 defoliate)	1.27	1.28	1.26
Cotton (May 1 plant date, Oct. 1 defoliate)	1.28	1.29	1.27
Wheat, Oats, Barley (Dec. 1 plant date, Jun. 1 harvest)	0.00	0.00	0.00
Grapes, Raisin (Mar. 15 leafout, Oct. 15 leafdrop)	0.63	0.63	0.63
Grapes, Table (Mar. 15 leafout, Oct. 15 leafdrop)	0.80	0.80	0.80
Kiwi (Mar. 15 leafout, Nov. 1 leafdrop)	1.00	1.00	1.00
Melons (Apr. 1 plant date, Jul. 15 harvest)	0.00	0.00	0.00
Melons (May 1 plant date, Aug. 15 harvest)	0.90	0.90	0.73
Melons (Jun. 1 plant date, Sep. 20 harvest)	0.56	0.47	0.66
Melons (Jul. 1 plant date, Oct. 10 harvest)	0.16	0.16	0.16
Olives (year round)	0.75	0.75	0.75
Pasture Grass	0.84	0.83	0.85
Pistachio (Apr. 1 leafout, Nov. 15 leafdrop)	1.19	1.19	1.19
Safflower (Mar. 1 plant date, Aug. 1 harvest)	0.34	0.58	0.11
Low Chilling Stone Fruit (Feb. 15 leafout, Dec. 1 leafdrop)	0.95	0.95	0.95
Stone Fruit (Mar.1 leafout, Nov. 15 leafdrop)			
[Peach, Nectarine, Plum, Apricot]	0.95	0.95	0.95
Late Stone Fruit (Mar. 16 leafout, Nov. 1 leafdrop)	0.95	0.95	0.95
Soft Fruit (Apr. 1 leafout, Nov. 15 leafdrop)			
[Apple, Pear]	0.96	0.96	0.96
Tomato (Mar. 1 plant date, Jul. 20 harvest)	0.00	0.10	0.00
Tomato (Apr. 1 plant date, July 30 harvest)	0.76	0.88	0.20
Walnut, Early (Mar. 15 leafout, Nov. 1 leafdrop)	1.15	1.15	1.15
Walnut, Late (Apr. 1 leafout, Nov. 1 leafdrop)	1.15	1.15	1.15

NOTE: *This information is a reproduction of information compiled by Kings River Conservation District. This information is provided as a general guideline and may not exactly be reflective of all locations or varieties.*

Water Conservation Information Bulletin

Vol. 1 Spring 2013

THE INFORMATION PROVIDED IN THIS BULLETIN IS PUT FORTH AS A TOOL TO ASSIST GROWERS IN DECISIONS RELATED TO WATER CONSERVATION AND WATER MANAGEMENT.

CONSERVING WATER SUPPLY

As farmers throughout the Friant Division of the Central Valley Project enter into the second year of "dry" conditions, securing an adequate water supply to meet crop demand becomes of top priority. Typically, when desiccated conditions are present, especially for concurrent years, crop demand is satisfied by groundwater, with surface water, where available, as a supplemental source. It is also noted that, during these extreme conditions, direct recharge activities are almost non-existent and replenishment to the groundwater aquifer comes only as a result of in-lieu events during on-farm irrigation.

Conservation tip: In-lieu recharge occurs when surface water deliveries are made to satisfy crop demand "in-lieu" of extracting groundwater. This effort allows an equal amount of surface water delivered to remain in storage within the groundwater aquifer.

In an effort to conserve both groundwater and surface water supplies, it is suggested that in "normal" and "below-normal" conditions, those growers with surface water allocations should rely initially on groundwater supplies to meet crop demand during the spring months (March – June), therefore reserving scheduling and delivery of their surface water allocations until needed in the summer to early fall months. The theory behind this suggestion being, given the unpredictable nature of weather patterns during the spring months, a greater percentage of crop demand will have the potential to be met through effective precipitation and that the remaining, demand, if present, is met through groundwater extraction, when depths to…*(cont. on pg. 2)*

WEBSITE SPOTLIGHT

Each quarter, we spotlight a website which we feel could provide helpful assistance in water conservation and water management to our growers. This quarter's spotlight is on:

CENTER FOR IRRIGATION TECHNOLOGY (*http://www.fresnostate.edu/jcast/cit/*)

The Center for Irrigation Technology (CIT), a center of the California Agricultural Technology Institute at California State University, Fresno, works in cooperation with the irrigation industry, local, state and federal agencies and irrigation users, to demonstrate new technology and develop performance specifications and standards for all types of irrigation equipment.

CIT offers the following services:

- Irrigation equipment testing/evaluation;
- Irrigation equipment selection;
- Improving irrigation efficiency; and
- Computer applications in irrigation

Conserving Water Supply … continued: groundwater are at its shallowest, which would also have the result of groundwater extraction costs being at their lowest of the year.

In runoff conditions such as those currently being experienced, an additional potential benefit can result from the early use of groundwater, reserving surface water for later use. The loss of a pump, driver or well can result in significant impacts to crop production and, in some cases, to the viability of permanent plantings. Scheduling of at least a portion of available surface water for delivery late in the irrigation season affords the insurance opportunity of some surface water being available in the event of a mechanical or well failure.

The District encourages farmers to take these considerations into account in their water scheduling procedures.

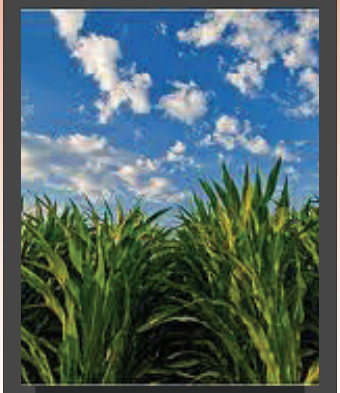
Lindmore Irrigation District

315 E. Lindmore Street

Lindsay, CA 93247-0908

Water Conservation Information Bulletin

Vol. 2 Summer 2013



THE INFORMATION PROVIDED IN THIS BULLETIN IS PUT FORTH AS A TOOL TO ASSIST GROWERS IN DECISIONS RELATED TO WATER CONSERVATION AND WATER MANAGEMENT.

CONSERVATION TILLAGE

Conservation Tillage is a term that covers a broad range of tillage systems that leave residue cover on the soil surface. Conservation Tillage systems are methods of soil tillage, either through chisel plow, disk, ridge-till, or no-till, which leave a minimum of 30 percent of crop residue on the soil surface or at least 1,000 lb/ac of residue on the surface during the critical soil erosion period. The process slows water movement, which reduces the amount of soil erosion. Soil erosion has four effects on cropland: nutrient loss, decreased water storage capacity, crop damage and decreased farm ability.

Conservation tip: Conservation tillage in the spring rather than the fall will leave the soil protected for a longer period of time, which could lead to higher crop yields during below-normal to dry water conditions.

Loss of topsoil due to erosion is important because it contains the richest supply of soil nutrients of any soil layer. The organic matter in the topsoil contains most of the micronutrients that are lost with excessive erosion. In addition, erosion reduces the amount of soil available to store moisture, while water that causes the erosion is lost and cannot be used to satisfy crop demand. Water erosion causes the majority of production loss, however, when conservation tillage practices are adopted, soil erosion is reduced by protecting the soil surface from water energy, principally through rain drops, that detaches soil particles from the soil surface. In addition, residue left on the soil surface also creates small dams that might have the potential…*(cont. on pg. 2)*

WEBSITE SPOTLIGHT

Each quarter, we spotlight a website which we feel could provide helpful assistance in water conservation and water management to our growers. This quarter's spotlight is on:

"The agricultural water stewardship is the use of water in a way that optimizes agricultural production while also addressing co-benefits for the environment and human health." The California Agricultural Water Stewardship Initiative (CAWSI) is managed by Ag Innovation Network and guided by an Editorial Board appointed by the California Roundtable on Water and Food Supply.

The website *www.agwaterstewards.org* is a "resource center for growers, ranchers, and others interested in sound farm water management." Information which can be found on the website includes: On-farm water stewardship practices, an interactive case study database and a technical resource and document library.

Conservation Tillage … continued: to store water so it can be absorbed by the soil at a later time. Conservation tillage systems also have the potential to benefit farmers by reducing fuel consumption and soil compaction. By reducing the number of times the farmer travels over the field, farmers have come to realize a significant savings in fuel and labor.

TIP ON MEASURING SOIL RESIDUE TO ENSURE CONSERVATION TILLAGE METHODS ARE WORKING

The standard method of measuring residue is with a 50-foot tape with markings every 6 inches. The tape is stretched diagonally across the rows and the number of points where soil residue is directly under the leading edge of the 6-inch marks is recorded. This number represents the percentage of soil residue coverage. This procedure is performed at three different places in a field to arrive at an average value. If rain is received after planting and before measuring, two things may happen. First, lightly incorporated soil residue will be uncovered by the rain, which will increase the soil residue reading. Second, a heavy rain will wash soil residue off of side slopes and reduce the residue reading.

*Information represented in this article was derived, in part, from a publication by Dr. Kris Kohl, Field Specialist—Agricultural Engineering Department, Iowa State University, entitled "Conservation Tillage—Effects on Soil Erosion".

Lindmore Irrigation District

315 E. Lindmore Street

Lindsay, CA 93247-0908

ATTACHMENT G

DISTRICT AGRICULTURAL WATER ORDER FORM

FIVE YEAR UPDATE

WATER MANAGEMENT PLAN

LINDMORE IRRIGATION DISTRICT

Lindmore Irrigation District Tele: (559) 562-2534

Fax to : (559) 562-5642 or e-mail to: waterorders@lindmoreid.com

Application for Water

Date Filed _____ Acct. No. _____

Owner _____

Meter No. _____

CUT - TO _____ INC. - TO _____

ON/OFF _____ Day _____ Date _____

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