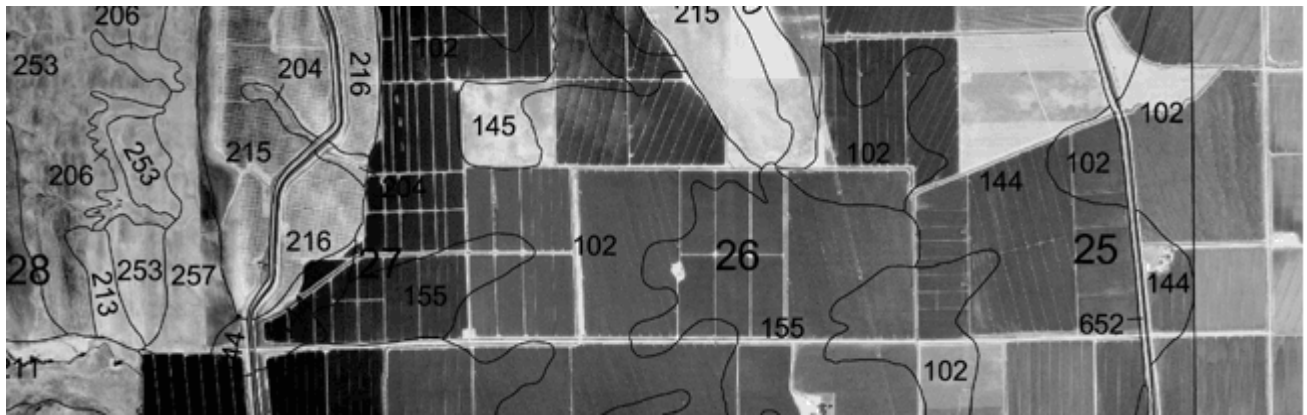


LaGrande Water District
SPHERE OF INFLUENCE
Colusa LAFCO



http://www.ca.nrcs.usda.gov/mlra02/colusa/manorslo_qd.html

ADOPTED

Resolution 2009-0004

MARCH 5, 2009

Colusa LAFCO
John Benoit, Executive Officer
PO Box 2694, Granite Bay CA 95746

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1 INTRODUCTION

1.1 LAFCO's Responsibilities

This Municipal Service Review (MSR) and Sphere of Influence (SOI) have been prepared for the Colusa Local Agency Formation Commission (Colusa LAFCO). Local Agency Formation Commissions are quasi-legislative local agencies created in 1963 to assist the State in encouraging the orderly development and formation of local agencies. This MSR consists of a review of water service as provided by the La Grande Water District.

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code §56000 et seq.) is the statutory authority for the preparation of an MSR, and periodic updates of the Sphere of Influence of each local agency.

The Governor's Office of Planning and Research has issued Guidelines for the preparation of an MSR. This MSR adheres to the procedures set forth in the MSR Guidelines.

A Sphere of Influence is a plan for the probable physical boundaries and service area of a local agency, as determined by the affected Local Agency Formation Commission (Government Code §56076). Government Code §56425(f) requires that each Sphere of Influence be updated not less than every five years, and §56430 provides that a Municipal Service Review shall be conducted in advance of the Sphere of Influence update.

1.2 Sphere of Influence Requirements

In determining the Sphere of Influence for each local agency, LAFCO must consider and prepare a written statement of determinations with respect to each of the following:

1. The present and planned land uses in the area, including agricultural and open space lands;
2. The present and probable need for public facilities and services in the area;
3. The present capacity of public facilities and adequacy of public services which the agency provides, or is authorized to provide; and
4. The existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency.

1.3 LAFCO Policies and Procedures Related to Spheres of Influence

The Colusa LAFCO adopted policies and procedures related to Spheres of Influence on February 5, 2004.

1.4 Description of Public Participation Process

Colusa LAFCO is a legislative body authorized by the California Legislature and delegated powers as stated in the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (the Act). The LAFCO proceedings are subject to the provisions of California's open meeting law, the Ralph M. Brown Act (Government Code Sections 54950 et seq.)

The Brown Act requires advance posting of meeting agendas and contains various other provisions designed to ensure that the public has adequate access to information regarding the proceedings of public boards and commissions. Colusa LAFCO complies with the requirements of the Brown Act.

SOI policies have been adopted by the Colusa LAFCO. Colusa LAFCO has discussed and considered the SOI process in open session, and has adopted a schedule for completing the various municipal service reviews and sphere of influence updates for Colusa County. Each Sphere of Influence will be prepared as a draft, and will be subject to public and agency comment prior to final consideration by the Colusa LAFCO.

1.5 Possible Approaches to the Sphere of Influence

LAFCO may recommend government reorganizations to particular agencies in the county, using the SOIs as the basis for those recommendations. Based on review of the guidelines of Colusa LAFCO as well as other LAFCOs in the

State, various conceptual approaches have been identified from which to choose in designating an SOI. These seven approaches are explained below:

1) Coterminous Sphere:

The Sphere of Influence for a city or special district that is the same as its existing boundaries. (This is the recommendation for the LaGrande Water District.)

2) Annexable Sphere:

A sphere larger than the agency's boundaries identifies areas the agency is expected to annex. The annexable area is outside its boundaries and inside the sphere.

3) Detachable Sphere:

A sphere that is smaller than the agency's boundaries identifies areas the agency is expected to detach. The detachable area is the area within the agency bounds but not within its sphere.

4) Zero Sphere:

A zero sphere indicates the affected agency's public service functions should be reassigned to another agency and the agency should be dissolved or combined with one or more other agencies.

5) Consolidated Sphere:

A consolidated sphere includes two or more local agencies and indicates the agencies should be consolidated into one agency.

6) Limited Service Sphere:

A limited service sphere is the territory included within the SOI of a multi-service provider agency that is also within the boundary of a limited purpose district which provides the same service (e.g., fire protection), but not all needed services. Territory designated as a limited service SOI may be considered for annexation to the limited purpose agency without detachment from the multi-service provider.

This type of SOI is generally adopted when the following conditions exist:

- a) the limited service provider is providing adequate, cost effective and efficient services,
- b) the multi-service agency is the most logical provider of the other services,
- c) there is no feasible or logical SOI alternative, and
- d) inclusion of the territory is in the best interests of local government organization and structure in the area.

Government Code §56001 specifically recognizes that in rural areas it may be appropriate to establish limited purpose agencies to serve an area rather than a single service provider, if multiple limited

purpose agencies are better able to provide efficient services to an area rather than one service district.

Moreover, Government Code Section §56425(i), governing sphere determinations, also authorizes a sphere for less than all of the services provided by a district by requiring a district affected by a sphere action to “establish the nature, location, and extent of any functions of classes of services provided by existing districts” recognizing that more than one district may serve an area and that a given district may provide less than its full range of services in an area.

7) Sphere Planning Area:

LAFCO may choose to designate a sphere planning area to signal that it anticipates expanding an agency’s SOI in the future to include territory not yet within its official SOI.

1.6 SOI Update Process

LAFCO is required to establish SOIs for all local agencies and enact policies to promote the logical and orderly development of areas within the SOIs. Furthermore, LAFCO must update those SOIs every five years. In updating the SOI, LAFCO is required to conduct a municipal service review (MSR) and adopt related determinations.

This report identifies preliminary SOI policy alternatives and recommends the SOI option for the LaGrande Water District. Development of actual SOI updates will involve additional steps, including opportunity for public input at a LAFCo public hearing, and

consideration and changes made by Commissioners.

LAFCO must notify affected agencies 21 days before holding a public hearing to consider the SOI and may not update the SOI until after that hearing. The LAFCO Executive Officer must issue a report including recommendations on the SOI amendments and updates under consideration at least five days before the public hearing.

1.7 SOI Amendments and CEQA

LAFCO has the discretion to limit SOI updates to those that it may process without unnecessarily delaying the SOI update process or without requiring its funding agencies to bear the costs of environmental studies associated with SOI expansions. Any local agency or individual may file a request for an SOI amendment. The request must state the nature of and reasons for the proposed amendment, and provide a map depicting the proposal.

LAFCO may require the requester to pay a fee to cover LAFCO costs, including the costs of appropriate environmental review under CEQA. LAFCO may elect to serve as lead agency for such a review, may designate the proposing agency as lead agency, or both the local agency and LAFCO may serve as co-lead agencies for purposes of an SOI amendment.

Local agencies are encouraged to consult with LAFCO staff early in the process regarding the most appropriate approach for the particular SOI amendment under consideration.

Certain types of SOI amendments are likely exempt from CEQA review. Examples are SOI expansions that include territory already within the bounds or service area of an agency, SOI reductions, and zero SOIs. SOI expansions for limited purpose agencies that provide services (e.g., fire protection, levee protection, cemetery, and resource conservation) needed by both rural and urban areas are typically not considered growth-inducing and are likely exempt from CEQA. Similarly, SOI expansions for districts serving rural areas (e.g., irrigation water) are typically not considered growth-inducing.

Remy et al. write

In *City of Agoura Hills v. Local Agency Formation Commission* (2d Dist.1988) 198 Cal.App.3d480, 493-496 [243 Cal.Rptr.740] (*City of Agoura Hills*), the court held that a LAFCO's decision to approve a city's sphere of influence that in most respects was coterminous with the city's existing municipal boundaries was not a "project" because such action did not entail any potential effects on the physical environment.¹

Since the recommendation is to expand the Sphere of Influence for the LaGrande Water District to allow 77.2 acres of agricultural land to be annexed in the future, there will be no environmental impacts from the adoption of the Sphere and no environmental document is required.

¹ Remy, Michael H., Tina A. Thomas, James G. Moose, Whitman F. Manley, *Guide to CEQA*, Solano Press Books, Point Arena, CA, February 2007, page 111.

2 SETTING

2.1 Colusa County

Colusa County is one of the original counties of California, created in 1850 at the time of statehood. Parts of the county's territory were given to Tehama County in 1856 and to Glenn County in 1891.

According to the U.S. Census Bureau, the County has a total area of 1,156 square miles including 6 square miles of water. A large number of streams drain the County including Elk Creek and Salt Creek.

The County's eastern boundary is formed, in part, by the Sacramento River. There are two incorporated cities in Colusa County: Colusa and Williams. There is one census-designated place: Arbuckle.²

Year	1980	1990	2000	2005	2006
Population	12,738	16,275	18,804	21,095	21,272

Colusa County is an agricultural based county, and with around 24% of the 2007 workforce classified as agricultural, the employment/unemployment patterns directly reflect that condition. The number of jobs in all industries had a decrease of 5.3% (-410 jobs) in 2007. The forecast for 2008, based on actual data through December, is for a slight turnaround with an increase of 0.1%.

Disregarding the agriculture employment for Colusa County, the seasonal variation remains because of the impact agriculture has on the rest of the employment sectors. Non-farm Employment growth in Colusa County grew in 2007 with a 3.1% (170 jobs) increase. The forecast for 2008, based on actual data through December, is for a slower increase of 0.3% (20 jobs).

The annual Unemployment Rate for Colusa County in 2007 increased a half of a percentage point to 13.1%, up from the 12.6% rate in 2006. The forecast for 2008, based on actual data through December, is a slightly higher 13.2%.⁴

The total value of agricultural crops produced in Colusa County in 2007 was \$484,525,000, up from \$422,729,000 in 2006. The value of rice, the County's largest crop was \$188,027,000 in 2007.⁵

² http://en.wikipedia.org/wiki/Colusa_County,_California

³ <http://quickfacts.census.gov/qfd/states/06/06011.html>

⁴

<http://www.csus.edu/indiv/j/jensena/sfp/sa11/yol2/col/colusa.htm>

⁵ Colusa County Department of Agriculture, Harry A. Krug, Agricultural Commissioner, 100 Sunrise Blvd. Suite F, Colusa CA 95932, Phone: 530-458-0580, "2007 Colusa County Crop Report."

2.2 Central Valley Project and Tehama-Colusa Canal

The Sacramento Canals Unit of the Central Valley Project, which includes the Tehama-Colusa and Corning Canals, was designed to provide irrigation water in the Sacramento Valley, principally in Tehama, Glenn, Colusa and Yolo Counties. Authorized in 1950, the unit consists of Red Bluff Diversion Dam, Funks Dam, Corning Pumping Plant, Tehama-Colusa Canal (TCC), and Corning Canal. Full and supplemental irrigation service is provided to about 140,000 acres.⁶

Water for the La Grande Water District is available from the Central Valley Project. The water is diverted from the Sacramento River into the TCC and thence conveyed to the District.

The system was designed to divert water from the Sacramento River into the TCC by virtue of the Red Bluff Diversion Dam across the Sacramento River located in Red Bluff, California. Although the system operated in this manner for some years, environmental concerns and regulatory requirements have altered the operational practices of the Dam.

Where, at one time, the Red Bluff Diversion Dam was operated to divert water essentially year round, current regulations generally prevent the dam gates from being lowered until May 15th.⁷ This restricts water diversions, although a system of temporary and research pumps, and a diversion at

Stony Creek allows for some water delivery even when the gates are out.

To overcome this limitation and provide water to irrigators, the Bureau of Reclamation installed three pumps in the latter half of the 1990's, each with a capacity of between 80 and 100 cfs (cubic feet per second), with provisions for the placement of a fourth pump. The installation of the fourth pump occurred in 2006. Current temporary and research pumping capacity is 465 cfs. However, irrigation demand can reach between 800 and a 1000 cfs before May 15th, when the Dam becomes operational.

Current practice is to dam up Stony Creek in Orland and back flow water through canal gates that were actually intended to let water out of the canal into Stony Creek. Between the pumps on the Sacramento River at Red Bluff, and the reverse flow diversion at Stony Creek, the demands of irrigators have been met, but generally without any reserve.⁸

The District's CVP water supply is available under two water service contracts with the Bureau of Reclamation. The District contracts with the Bureau to purchase up to 7,200 acre feet of water per year from the CVP. If there is not sufficient CVP water available (due to lack of precipitation or regulatory restrictions), the District's supply can be reduced by up to 100%.

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<http://www.usbr.gov/dataweb/html/sacramento.html#general>

⁷ <http://www.tccanal.com/>

⁸ <http://www.tccanal.com/>

3 LAGRANDE WATER DISTRICT

3.1 LaGrande Water District Description

The LaGrande Water District includes 1,448 acres⁹ in central Colusa County, west of Interstate 5, northwest of Williams between the Glenn-Colusa Irrigation District Canal and the Tehama-Colusa Canal. The US Bureau of Reclamation breaks down the acreage as follows:

LaGrande Water District Acreage¹⁰

Gross Acres = 1,470
Arable Acres = 1,465
Irrigable acres = 1,392
Productive acres = 1,322

The District gets water from the Sacramento River through the Tehama-Colusa Canal.

The Board of Directors of the LaGrande Water District is as follows:¹¹

Director/
Term

Ron LaGrande, President/
12/2/2005-12/4/2009
Phone: 530-473-5923

Ken LaGrande, Vice-President/
12/7/2007-12/2/2011
Phone: 530-458-4744

⁹ Tehama-Colusa Canal Authority, Jeff Sutton, General Manager, PO Box 1025, Willows CA 95988, Phone 530-934-2125, Fax 530-934-2355, Fax August 15, 2008.

¹⁰ USBR, Jacob Berens, jberens@mp.usbr.gov, April 30, 2008.

¹¹ LaGrande Water District, Doris Pearson, Secretary, PO Box 756, Williams, CA 95987, Phone 530-473-3433, Fax October 7, 2008.

Larry LaGrande, Director/
12/2/2005-12/4/2009
Phone: 530-473-2184

Zachary Dennis, Director/
12/2/2005-12/4/2009

Mike LaGrande, Director/
12/7/2007-12/2/2011
Phone: 530-473-2227

Contact information for the LaGrande Water District is as follows:

LaGrande Water District, PO Box 756,
Williams CA 95987
Phone: 530-473-3433 (Doris Pearson,
Secretary)

3.2 LaGrande Water District Crops

The following crops are grown in the LaGrande Water District:¹²

Crop	Acres
Rice	1182
Wheat	22
Irrigated pasture	86
Non-agricultural	35
Fallow/Idle	<u>123</u>
Total	1448

¹² Tehama-Colusa Canal Authority, Jeff Sutton, General Manager, PO Box 1025, Willows CA 95988, Phone 530-934-2125, Fax 530-934-2355, Fax August 15, 2008.

3.3 LaGrande Water District Soils

The following soils are found in the LaGrande Water District. Each soil is described in detail in Appendix A at the end of this report.¹³

102—Capay clay loam, 0 to 1 percent slopes

127—Mallard clay loam, 0 to 1 percent slopes

144—Hillgate clay loam, 0 to 2 percent slopes

145—Hillgate loam, 0 to 2 percent slopes

155—Alcapay clay, 0 to 1 percent slopes

215—Altamont-Sehorn complex, 15 to 30 percent slopes

3.4 Service Provision and Water Supply

The 2008 water contract for the LaGrande Water District from the Tehama-Colusa Canal Authority was 7,200 acre-feet.¹⁴ However, the District received approximately 45% of this water due to low rainfall.¹⁵ In 2007 the LaGrande Water District received 5,423 acre-feet which cost \$17.90 per acre-

foot.¹⁶ The water cost is paid directly to the Bureau of Reclamation and the Canal Maintenance cost (\$8.42 per acre-foot) is paid to the T-C Canal Authority.¹⁷

The “Colusa County Groundwater Management Plan” shows the LaGrande Water District getting 99 percent of the irrigation water from surface water and one percent of the irrigation water from groundwater in 2003.¹⁸

¹³ USDA Natural Resource Conservation Service
http://www.ca.nrcs.usda.gov/mlra02/colusa/manorslo_qd.html

¹⁴ Tehama-Colusa Canal Authority, Jeff Sutton, General Manager, PO Box 1025, Willows CA 95988, Phone 530-934-2125, Fax 530-934-2355, August 14, 2008.

¹⁵ LaGrande Water District, Doris Pearson, Secretary, PO Box 756, Williams, CA 95987, Phone 530-473-3433

¹⁶ USBR, Jacob Berens, jberens@mp.usbr.gov, August 14, 2008.

¹⁷ Tehama-Colusa Canal Authority, Jeff Sutton, General Manager, PO Box 1025, Willows CA 95988, Phone 530-934-2125, Fax 530-934-2355, August 14, 2008.

¹⁸ Colusa County, “Colusa County Groundwater Management Plan”, September 2008, by Wood Rodgers Inc., Table II.5

3.5 LaGrande Water District Finances

2008 LaGrande Water District Budget¹⁹		
Income		
Interest	\$500	
Refunds and Reimbursements	0	
Water Charges	0	
Total Income	\$500	
Expenses		
Bank Charges		200.00
Bookkeeping		3900.00
Custom Work		3400.00
Dues/Donations		200.00
Fees (SWRCB)		5000.00
Insurance		6000.00
Legal & Professional		4000.00
Meeting Expense		325.00
Misc		500.00
O&M-TCCA --\$4451.81/month		53,421.72
Office Supplies		300.00
Postage		50.00
Repairs & Maintenance		4000.00
Utilities		7500.00
Water		51,224.40
Water Order Service		1,225.00
Total Expenses		\$141,246.12
Water Cost	Total	Per Acre-Foot
Water Purchases (Assuming 3240 A-F)	\$51,224.40	\$15.81
TCCA O&M	\$53,421.72	\$16.49
District O&M	\$38,475.00	\$11.25
Total	\$143,121.12	\$43.55

¹⁹ LaGrande Water District, Doris Pearson, Secretary, PO Box 756, Williams, CA 95987, Phone 530-473-3433, Fax October 7, 2008.

4 SPHERE OF INFLUENCE FOR LAGRANDE WATER DISTRICT

Information contained in this Sphere of Influence is only current as of the date of adoption. LAFCo Policy 3.3 (e) calls for an updated Master Services Element at the time a proposal is made. Policy 2.14 essentially requires an updated Master Services Element anytime conversion of agricultural land meeting the definition contained in the California Government Code Section 56064 is proposed.

The Sphere of Influence for the LaGrande Water District in Colusa County will allow the annexation of 77.2 acres to the District. This land is used for agriculture and will still be used for agriculture after annexation to the District.

The current and planned development of properties within the proposed Spheres of Influence will continue to require irrigation water from the Tehama-Colusa Canal.

4.1 Land Use

4.1.1 Present and Planned Land Uses in the Area, Including Agricultural and Open Space Lands

The 1989 Colusa County General Plan states the following:

The Colusa County General Plan provides the basis for decisions regarding growth and land development. It is the County's official statement of public policy for the use of private and public land.

The Plan provides a framework for encouraging economic development while managing growth, conserving agricultural lands, protecting the environment, and preserving the qualities that make Colusa County unique.

It reflects the aspirations and values of Colusa County residents regarding the future character and form of their communities.²⁰

The land use in the area is agricultural. The General Plan and the zoning of Colusa County support the agricultural use of this land. There is no conflict with the LaGrande Water District and the Colusa County General Plan and Zoning.

4.1.2 SOI Determinations on Present and Planned Land Use for the LaGrande Water District

- 1-1] The Sphere of Influence for the LaGrande Water District will allow the annexation of 77.2 acres.
- 1-2] There are no conflicts with the LaGrande Water District and existing or proposed land uses in the area because the Colusa County General Plan designates the area for agricultural land use.
- 1-3] The LaGrande Water District has water to serve the land within the present boundary and has limited capacity to expand.
- 1-4] There is only one logical area for expansion of the LaGrande Water District since other districts serve most of the surrounding land.

²⁰<http://library.ceres.ca.gov/docs/data/1900/1951/HYPERO CR/hyperocr.html>

4.2. Municipal Services: Present Need

4.2.1 Service Need for LaGrande Water District

The lands within the LWD need the services that are provided. There is limited additional water to provide service for more land. The Sphere of Influence for the LWD will allow the annexation of 77.2 acres.

4.2.2 SOI Determinations for Facilities and Services Probable Need for the LaGrande Water District

- 2-1] The land within the LaGrande Water District will need irrigation water as long as agriculture is a profitable business in Northern California.
- 2-2] The LaGrande Water District makes a valuable contribution to the local economy for Colusa County by providing water for agriculture. This generates many jobs.
- 2-3] The proposed addition to the Sphere of Influence for the LaGrande Water District also needs the services of the District.

4.3 Public Facilities Future Capacity

4.3.1 Facilities and Capacity

The LaGrande Water District would be able to serve and additional 77.2 acres so this area is included in the Sphere of Influence.

4.3.2 SOI Determinations for Public Facilities Present and Future

- 3-1] The LaGrande Water District has adequate water supplies to provide irrigation water to the landowners as it is available from the USBR for the foreseeable future.
- 3-2] The District promotes water conservation and the use of technology to prevent waste.

**4.4 Social or Economic
Communities of Interest**

4.4.1 LaGrande Water District

The LaGrande Water District does not serve a community in the traditional sense of the word because there are no residents within the District. There is an economic community of landowners who formed the District and who benefit from the agricultural water service provided.

Although the landowners are part of the larger community of agricultural landowners in Colusa County it would not be feasible or economical to combine this Water District with other Water Districts in the County because each district has different enabling acts, different contracts with the Bureau of Reclamation, and different means of financing their water conveyance infrastructure.²¹

4.4.2 *SOI Determinations for Social or Economic Communities of Interest for LaGrande Water District*

4-1] The landowners for the LaGrande Water District live within the surrounding communities.

²¹ Tehama-Colusa Canal Authority, J. Mark Atlas, Attorney, 134 West Sycamore Street, Willows, CA 95988, 530-934-5416, jma@jmatlaslaw.com, E-Mail: January 9, 2009.

ABBREVIATIONS

AB	Assembly Bill
AF	Acre-foot (of water)
CKH Act	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CVP	Central Valley Project
District	LaGrande Water District
EIR	Environmental Impact Report (California)
EIS	Environmental Impact Statement (US)
FWS	U.S. Fish and Wildlife Service
I-5	Interstate 5
LAFCO	Local Agency Formation Commission
LWD	LaGrande Water District
MSR	Municipal Service Review
NMFS	National Marine Fisheries Service
SOI	Sphere of Influence
TCC	Tehama-Colusa Canal
TCCA	Tehama-Colusa Canal Authority
USBR	United States Bureau of Reclamation

DEFINITIONS

Acre foot: The volume of water that will cover one acre to a depth of one foot, 325,850 U.S. Gallons or 1,233,342 liters (approximately).

Bureau of Reclamation: (USBR, Reclamation, BOR). The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.²²

Central Valley Project: The Central Valley Project, one of the Nation's major water conservation developments, extends from the Cascade Range in the north to the semi-arid but fertile plains along the Kern River in the south. Initial features of the project were built primarily to protect the Central Valley from crippling water shortages and menacing floods, but the CVP also improves Sacramento River navigation, supplies domestic and industrial water, generates electric power, conserves fish and wildlife, creates opportunities for recreation, and enhances water quality.²³

Drip irrigation: Drip irrigation, also known as trickle irrigation or micro-irrigation is an irrigation method that minimizes the use of water and fertilizer by allowing water to drip slowly to the roots of plants, either onto the soil surface or directly onto the root zone, through a network of valves, pipes, tubing, and emitters. Modern drip irrigation has arguably become the most important innovation in agriculture since the invention of the impact sprinkler in the 1930s, which replaced wasteful flood irrigation. Drip irrigation may also use devices called micro-spray heads, which spray water in a small area, instead of dripping emitters. These are generally used on tree and vine crops with wider root zones.²⁴

Exempt land: Irrigation land in a district to which the acreage limitation and pricing provisions of Reclamation law do not apply.²⁵

Gravity flow: flow of water in a pipe on a descending path.

Irrigate: To supply (dry land) with water by means of ditches, pipes, or streams; water artificially.

Irrigation system: a complete set of system components including the water source, the water distribution network, and the general irrigation equipment.

Lateral: a pipe line other than the main water pressure line used to move water to the various delivery devices.

²² <http://www.usbr.gov/library/glossary/#hmr>

²³ <http://www.usbr.gov/dataweb/html/cvp.html>

²⁴ http://en.wikipedia.org/wiki/Drip_irrigation

²⁵ <http://www.usbr.gov/library/glossary/#hmr>

Operations and maintenance costs: The ongoing, repetitive costs of operating and maintaining a water system.

Pumping plant: Facility that lifts water up and over hills.

Pumplift (pumping lift): The vertical distance that a pump will raise waters. Distance water must be lifted in a well from the pumping level to the ground surface.

Tehama-Colusa Canal: The Tehama Colusa Canal is 110 miles long and serves 14 water districts. The system was designed to divert water from the Sacramento River into the settling basin by virtue of a dam across the Sacramento River located in Red Bluff, California.

Tehama-Colusa Canal Authority: The Tehama-Colusa Canal Authority (TCCA) is a Joint Powers Authority of water agencies which operates and maintains the Tehama-Colusa and Corning Canals of the federal Central Valley Project (CVP) under a long-term contract with the Department of the Interior. Through these canals, the TCCA delivers CVP water to 17 districts which serve approximately 140,000 acres of farmland in Tehama, Glenn, Colusa and Yolo Counties.²⁶

Water transfers: Selling or exchanging water or water rights among individuals or agencies. Artificial conveyance of water from one area to another.

Water user: Any individual, district, association, government agency, or other entity that uses water supplied from a Reclamation project.

Water year (WY): Period of time beginning October 1 of one year and ending September 30 of the following year and designated by the calendar year in which it ends. A calendar year used for water calculations. (Note: CVP water service contracts define the water year as March 1 to the last day of the following February.)

²⁶ http://www.delta.dfg.ca.gov/afrp/acronym_template.asp?code=371

REFERENCES

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MAPS

Figure 1 USBR Map LaGrande Water District

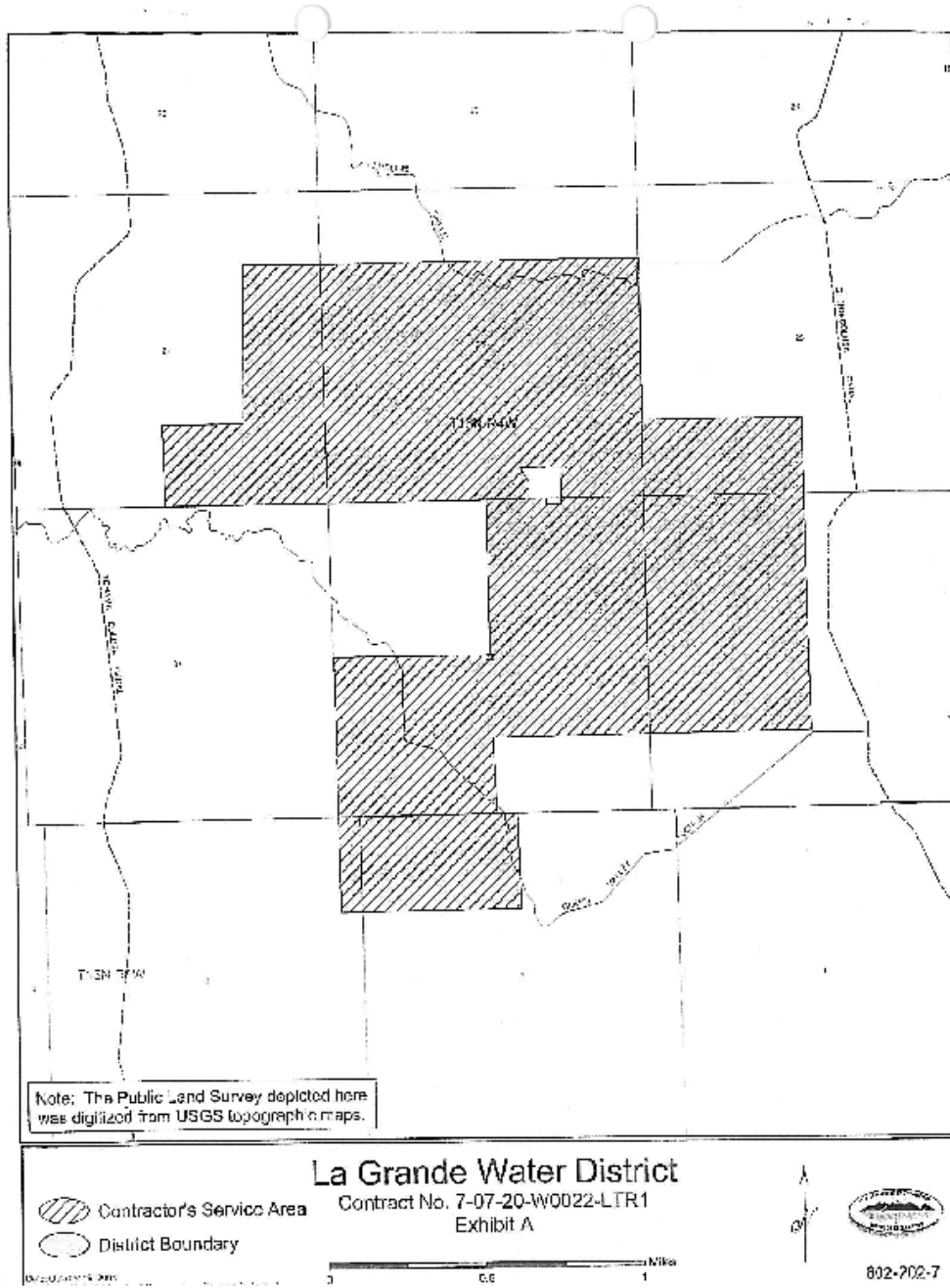


Figure 2 Location Map LaGrande Water District

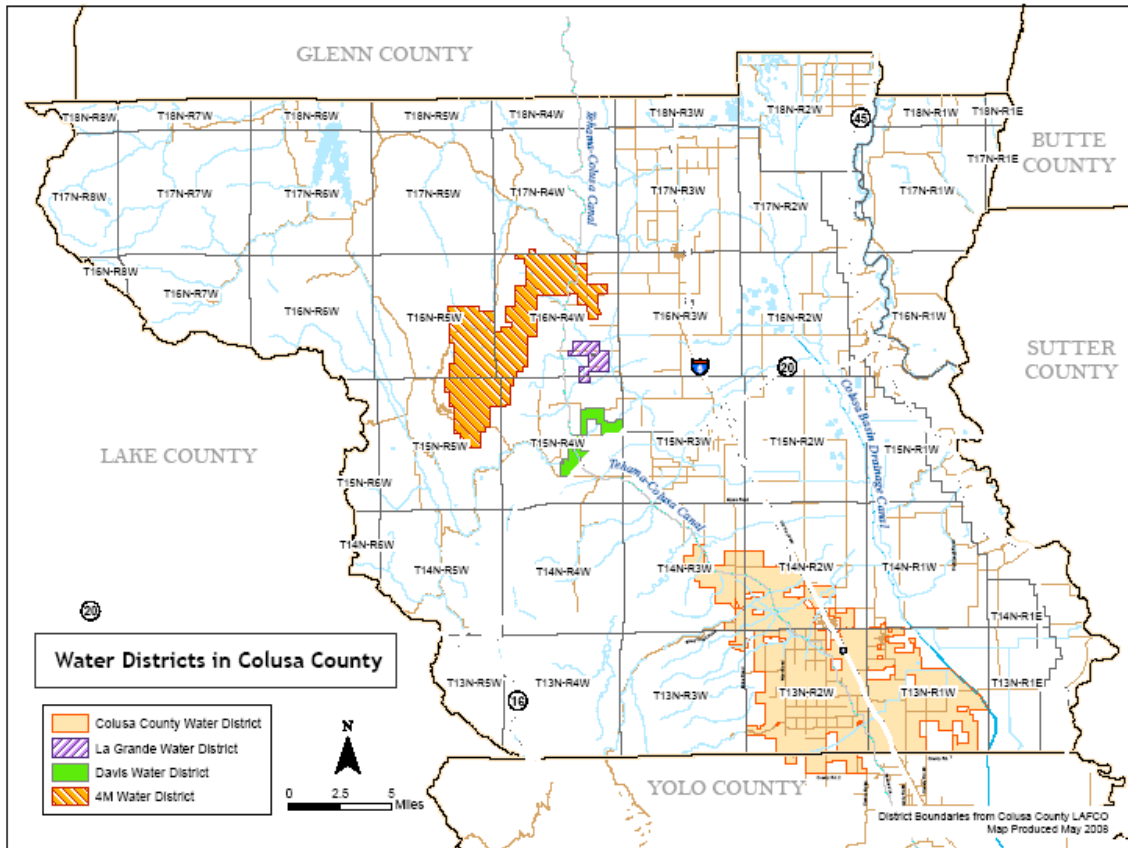
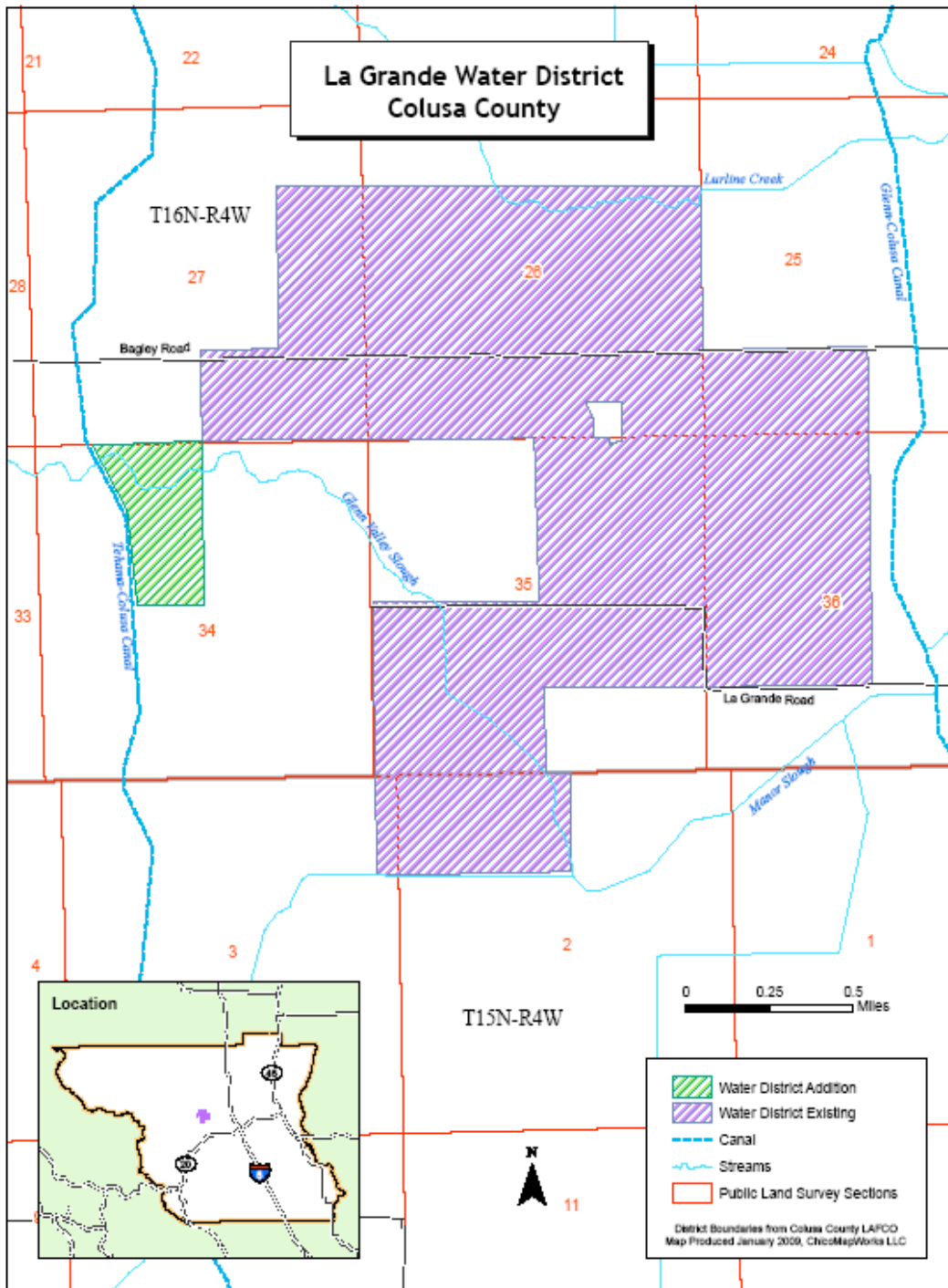


Figure 3 LaGrande Water District Sphere of Influence



APPENDIX A SOIL INFORMATION

102—Capay clay loam, 0 to 1 percent slopes

Map Unit Setting

General location:	On the west side of the Colusa Basin near the towns of Williams and Maxwell
Map unit geomorphic setting:	Basin floor
Elevation:	25 to 140 feet (9 to 43 meters)
Mean annual precipitation:	14 to 16 inches (355 to 405 millimeters)
Mean annual air temperature:	61 to 63 degrees F. (16 to 17 degrees C.)
Frost-free period:	225 to 250 days

Capay clay loam—90 percent	Minor components: 10 percent
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Major Component Description Capay clay loam

Component geomorphic setting:	Basin floor
Parent material:	Alluvium
Typical vegetation:	Irrigated cropland

Component Properties and Qualities

Slope:	0 to 1 percent
Runoff:	Very low
Surface features:	None noted.
Percent area covered by surface coarse fragments:	None noted.
Depth to restrictive feature:	None noted
Slowest permeability class:	Very slow
Salinity:	Not saline
Sodicity:	Not sodic
Available water capacity:	About 9.9 inches (High)

Component Hydrologic Properties

Present flooding:	Rare
Present ponding:	None
Current water table:	Present
Natural drainage class:	Moderately well drained

Altered hydrology:

Water tables have been lowered by rice drainage ditches. Most of these areas were rarely or occasionally flooded under natural conditions. There are no soil redoximorphic features above 36 inches.

Interpretive Groups:	Land capability irrigated: 2s-5
	Land capability nonirrigated: 4s-5

127—Mallard clay loam, 0 to 1 percent slopes

Map Unit Setting

General location:	Near the towns of Arbuckle and Williams
Map unit geomorphic setting:	Alluvial fan
Elevation:	45 to 140 feet (15 to 43 meters)
Mean annual precipitation:	14 to 16 inches (355 to 405 millimeters)
Mean annual air temperature:	61 to 63 degrees F. (16 to 17 degrees C.)
Frost-free period:	225 to 250 days

Mallard clay loam—85 percent
Minor components: 15 percent

Major Component Description **Mallard clay loam**

Component geomorphic setting:	Lower alluvial fan
Parent material:	Alluvium
Typical vegetation:	Irrigated cropland

Component Properties and Qualities

Slope:	0 to 1 percent
Runoff:	Very low
Surface features:	None noted.
Percent area covered by surface coarse fragments:	None noted.
Depth to restrictive feature:	None noted
Slowest permeability class:	Slow
Salinity:	Not saline
Sodicity:	Not sodic
Available water capacity:	About 10.4 inches (Very high)

Component Hydrologic Properties

Present flooding:	Rare
Present ponding:	None
Current water table:	Present
Natural drainage class:	Somewhat poorly drained
Altered hydrology:	Water tables have been lowered by rice drainage ditches.

Interpretive Groups

Land capability irrigated: 2w-3
Land capability nonirrigated: 4w-3

144—Hillgate clay loam, 0 to 2 percent slopes

Map Unit Setting

General location: Western margins of the Sacramento Valley,
west of Williams and north to the Glenn
County boundary

Map unit geomorphic setting: Terrace
Elevation: 130 to 450 feet (40 to 138 meters)
Mean annual precipitation: 14 to 16 inches (355 to 405 millimeters)
Mean annual air temperature: 61 to 63 degrees F. (16 to 17 degrees C.)
Frost-free period: 225 to 250 days

Hillgate clay loam—85 percent Minor components: 15 percent

Major Component Description Hillgate clay loam

Component geomorphic setting: Terrace
Parent material: Alluvium
Typical vegetation: Irrigated cropland

Component Properties and Qualities

Slope: 0 to 2 percent
Runoff: Very low
Surface features: None noted.
Percent area covered by surface coarse fragments: None noted.
Depth to restrictive feature: Abrupt textural change—
19 inches
Slowest permeability class: Slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (Low)

Component Hydrologic Properties

Present flooding: None
Present ponding: None
Current water table: None noted.
Natural drainage class: Well drained

Interpretive Groups: Land capability irrigated: 2s-3
Land capability nonirrigated: 4s-3

145—Hillgate loam, 0 to 2 percent slopes

General location: West of Williams and Maxwell in the
Sacramento Valley and in the foothill valleys.
Map unit geomorphic setting: Terrace
Elevation: 130 to 450 feet (40 to 138 meters)
Mean annual precipitation: 14 to 16 inches (355 to 405 millimeters)
Mean annual air temperature: 61 to 63 degrees F. (16 to 17 degrees C.)
Frost-free period: 225 to 250 days

Hillgate loam—90 percent
Minor components: 10 percent

Major Component Description Hillgate loam

Component geomorphic setting: Terrace
Parent material: Alluvium
Typical vegetation: Annual grasses and forbs

Component Properties and Qualities

Slope: 0 to 2 percent
Runoff: Very low
Surface features: None noted.
Percent area covered by surface coarse fragments: None noted.
Depth to restrictive feature: Abrupt textural change—19 inches
Slowest permeability class: Slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.0 inches (Low)

Component Hydrologic Properties

Present flooding: None
Present ponding: None
Current water table: None noted.
Natural drainage class: Well drained

Interpretive Groups

Land capability irrigated: 2s-3
Land capability nonirrigated: 4s-3

155—Alcapay clay, 0 to 1 percent slopes

General location: North of Maxwell, near Bagley Road and east of Williams

Map unit geomorphic setting: Basin floor
Elevation: 45 to 110 feet (14 to 35 meters)

Mean annual precipitation: 14 to 16 inches (355 to 405 millimeters)

Mean annual air temperature: 61 to 63 degrees F. (16 to 17 degrees C.)

Frost-free period: 225 to 250 days

Alcapay clay—90 percent **Minor components: 10 percent**

Major Component Description--Alcapay clay

Component geomorphic setting: Basin floor

Parent material: Alluvium

Typical vegetation: Irrigated Cropland



Wheat, La Grande Ranch Old Antone Soils, Alcapay Series

Component Properties and Qualities

Slope: 0 to 1 percent Runoff: Very low

Surface features: None noted.

Percent area covered by surface coarse fragments: None noted.

Depth to restrictive feature: None noted

Slowest permeability class: Slow

Salinity: Saline within 40 inches

Sodicity: Sodic within 40 inches

Available water capacity: About 8.9 inches (High)

Component Hydrologic Properties

Present flooding: Rare

Present ponding: None

Current water table: Present

Natural drainage class: Somewhat poorly drained

Altered hydrology: Water tables have been lowered by rice drainage ditches.

Interpretive Groups

Land capability irrigated: 3w-5 Land capability nonirrigated: 4w-5

215—Altamont-Sehorn complex, 15 to 30 percent slopes

General location:	Lower Coast Range foothills on steep ridges
Map unit geomorphic setting:	Hill
Elevation:	200 to 800 feet (61 to 244 meters)
Mean annual precipitation:	14 to 18 inches (355 to 458 millimeters)
Mean annual air temperature:	61 to 63 degrees F. (16 to 17 degrees C.)
Frost-free period:	225 to 250 days

Altamont silty clay—45 percent
Sehorn silty clay—35 percent
Minor components: 20 percent

Major Component Description--Altamont silty clay

Component geomorphic setting:	Lower sideslopes and north slopes of hill
Parent material:	Residuum weathered from sandstone-shale
Typical vegetation:	Annual grasses with scattered blue oak

Component Properties and Qualities

Slope:	15 to 30 percent
Runoff:	Medium
Surface features:	Polygonal cracking pattern, approximately 24 inches in diameter.
Percent area covered by surface coarse fragments:	None noted.
Depth to restrictive feature:	Bedrock (paralithic)—40 to 60 inches
Slowest permeability class:	Slow above the bedrock
Salinity:	Not saline
Sodicity:	Not sodic
Available water capacity:	About 7.9 inches (High)

Component Hydrologic Properties

Present flooding:	None
Present ponding:	None
Current water table:	None noted.
Natural drainage class:	Well drained

Interpretive Groups

Land capability irrigated: Not calculated
Land capability nonirrigated: 4e-5