

6.6 Yuba County

6.6.1 *Introduction and Summary*

The following summarizes the local setting, and current and future land and water use conditions in Yuba County. YCWA is preparing an IRWMP for the valley floor of Yuba County. The plan is due to be completed in mid-2007. This section of the Sacramento Valley IRWMP contains preliminary information from the YCWA plan that is being developed with the input of Yuba County officials, YCWA staff, and local stakeholders. This plan identifies the following preliminary key and/or highest priority water and land use related issues:

- Improved flood management for Yuba County with a focus on completing the Reclamation District 784 and Marysville Levee Commission levee improvements.
- Implementation of the Lower Yuba River Accord Agreement.
- Integration of land use planning and water resources planning to accommodate future water demands including urban development on the valley floor of the county.
- Groundwater management and protection including conjunctive use operations.
- Improved wastewater discharge water quality.

6.6.1.1 Local Setting

Yuba County is located about 50 miles north of Sacramento on the east side of the Sacramento Valley. The county extends from the Sacramento Valley floor at less than 100 feet msl high into the Sierra Nevada with peaks in excess of 8,000 feet above msl. The mountainous portions of the county are relatively undeveloped compared to the valley floor area, which has historically been dominated by agricultural land uses. The valley floor has relied on good soils and access to surface water from the Yuba and Feather Rivers and groundwater to support an agricultural based economy. Within Yuba County, YCWA delivers the vast majority of the surface water to its seven Member Units to meet a part of their agricultural water demands. The Member Units supplement the surface water supplies with groundwater from the alluvial groundwater basins underlying the valley floor.

The Yuba River Basin drains approximately 1,339 square miles of the western Sierra Nevada and is tributary to the Feather River, which is a tributary of the Sacramento River. The average annual unimpaired flows of the Yuba River below Englebright Dam at Smartville is about 2.45 million ac-ft and ranges from a high of 4.9 million ac-ft in 1986 to a low of 370,000 ac-ft in 1977.

The following four significant recent events are reshaping water management within Yuba County and the region:

- Flood management, including new regulations for levees, along the Yuba, Bear, and Feather Rivers
- The urbanization of agricultural lands
- The proposed Lower Yuba River Accord to settle water rights issues
- New wastewater discharge requirements implementing the California Toxics Rule

These events present a new set of challenges and opportunities for the region's water managers. The Yuba County IRWMP is being prepared to address these water supply and other water management issues, and develop water management strategies to address these issues for the valley floor portion of Yuba County. The Yuba County IRWMP is being led by the Regional Water Management Group, which consists of representatives from public agencies and water purveyors in the region, including the following:

- Yuba County Water Agency (Lead Agency)
- Reclamation District 784
- Linda County Water District
- Yuba County
- Browns Valley Irrigation District
- City of Marysville
- Olivehurst Public Utility District
- Yuba City (in Sutter County for regional wastewater discharge plans)

A complete list of the agencies with land and water resources management responsibilities within the Yuba County IRWMP area are listed below and their locations are shown on Figure 6.6-1.

- **Member Units of Yuba County Water Agency**

- Browns Valley Irrigation District
- Ramirez Water District
- Hallwood Irrigation Company
- Brophy Water District
- Wheatland Water District
- South Yuba Water District
- Dry Creek Mutual Water Company

- **Other Agricultural Water Purveyors**
 - Cordua Irrigation District
 - Yuba County Water District
 - Camp Far West Irrigation District
 - Plumas Mutual Water Company
- **Urban and Industrial Water Purveyors**
 - City of Marysville
 - City of Wheatland
 - Yuba County Water District
 - Linda County Water District
 - Olivehurst Public Utility District
 - Beale Air Force Base
- **Flood Management Agencies**
 - Reclamation District 784
 - Reclamation District 10
 - Reclamation District 2103
 - Reclamation District 817
 - Marysville Levee Commission
 - Three Rivers Levee Improvement Authority
- **Land Use Planning and Resource Agencies**
 - Yuba County
 - Yuba County Resource Conservation District

YCWA is also participating in the Cosumnes, American, Bear, and Yuba IRWMP that focuses on the upper watersheds of each river basin. The CABY IRWMP is outside of the planning region of the Yuba County IRWMP.

6.6.1.2 Land Use Patterns

The current general land use mix, shown on Figure 6.6-2, shows the area consists of agricultural lands (including annual, permanent crops, and rice), urban lands, and undeveloped lands. The orchards are typically grown adjacent to the rivers, and the rice is grown in the central low-lying areas between the rivers. The primary urban areas within the plan area include the Cities of Marysville and Wheatland and the communities of Linda, Olivehurst, and Arboga. Several of these urban areas are participating with Yuba City (in Sutter County) to explore regional wastewater treatment and recycling opportunities because these areas share common wastewater management objectives.

6.6.1.3 Water Use and Water Supply Patterns

YCWA currently delivers approximately 310,000 ac-ft of water per year to its Member Units from the Yuba River to meet agricultural demands. There are current plans for expansion of surface water delivery to the Wheatland area for a total demand of 350,000 af/yr. The Member Units supplement these supplies with additional local surface water supplies and groundwater. Other agricultural areas rely on riparian surface water supplies and groundwater.

The urban areas within the valley floor of the county rely entirely on groundwater to meet M&I water demands.

6.6.1.4 Existing and Ongoing Planning

YCWA plays a major role in the management and allocation of surface water supplies in the region. YCWA was created in 1959 by the Yuba County Water Agency Act for flood protection and to develop and promote the beneficial use and regulation of the water resources of Yuba County. YCWA owns and operates the Yuba River Development Project, a primary feature of which is New Bullards Bar Dam and Reservoir on the North Yuba River (Figure 6.6-3). This multi-purpose development began operation in 1970, and provides electric power generation, water supply, flood control, and instream flows for fisheries and recreation. Using the Yuba River Development Project, YCWA provides water supply to its Member Units through its facilities on the Yuba River.

YCWA has prepared a groundwater management plan in compliance with SB1938, the Groundwater Management Planning Act of 2002, and has commissioned studies of groundwater use and conducted groundwater levels and groundwater quality monitoring. In addition, since 1991, YCWA, in cooperation with Member Units has managed groundwater substitution transfers that provide water to other parts of California and generate revenue that funds YCWA programs such as flood control.

One of the goals of the Yuba County IRWMP is to refine water management activities to develop integrated water management strategies that address current and future water management issues. YCWA and the local agencies have prepared numerous studies documenting land use and water management activities. Table 6.6-1 provides a summary of the planning documents for the Yuba County IRWMP area.

TABLE 6.6-1

Existing and Relevant Yuba County Water Resources Planning Documents

| Planning Document | Description | Date Published |
|------------------------------------|--|---|
| YCWA Groundwater Management Plan | Summarizes groundwater management and monitoring of BMOs in the North Yuba and South Yuba Groundwater Subbasins. | March 2005 |
| Flood Management-related Documents | Over 30 documents prepared to address flood management issues in Yuba County. | 1997 to present |
| Land Use Planning Documents | Eighteen (18) land use planning documents. | 1990 to present |
| Lower Yuba River Accord | Cooperative settlement of Lower Yuba River operations. | Scheduled to go into effect late 2006 |
| Urban Water Management Plans | Two urban water management plans (City of Marysville and Linda County Water District). | 2005 |
| Forecast-Coordinate Operations | Outlines coordinated operations of Lake Oroville and New Bullards Bar for managing major floods. | Ongoing – Phase I is expected to be completed in 2006 |

6.6.1.5 Plan Area

The Yuba County IRWMP area includes the valley floor portion of the county (which coincides with the boundaries of the groundwater basins). Most of the water management issues will be evaluated within this plan area. The plan area has been expanded west of the Feather River to include Yuba City (which is located in Sutter County) to address water management strategies associated with urban wastewater treatment and wastewater recycling.

The plan area encompasses the North Yuba Groundwater Subbasin and South Yuba Groundwater Subbasin, and the IRWMP further subdivides them into smaller Water Management Subareas (Subareas) to focus on the specific water needs of individual local areas. This is necessary to reflect the variations of local conditions and address water management issues at an appropriate level within the plan area.

The Subareas were developed through the direction of the Management Group to reflect the variations in the hydrogeologic setting, current and future land use patterns, and water use and water supply patterns described above. The five Subareas shown on Figure 6.6-2 include the following:

- North Yuba Groundwater Subbasin
 1. North Yuba Agricultural Subarea
 2. City of Marysville Subarea

- South Yuba Groundwater Subbasin
 1. South Yuba Agricultural Subarea
 2. City of Wheatland Subarea
 3. Regional Wastewater Recycling Subarea

Methodology

As part of the Yuba County IRWMP, a land and water use analysis for the plan area is being prepared. A preliminary summary of the available information is provided in this section. The Yuba County IRWMP is evaluating the existing conditions (represented by year 2004 level of development), a future condition (represented by year 2016 level of development), and a 2030 buildout condition.

Currently, the year 2004 and year 2016 land and water use data have been developed. The planning assumptions for the 2030 buildout level of development are being developed at this time.

The existing land use conditions are represented using the Department's 1995 land use survey of Yuba County, which identifies over 20 specific land uses and crop types. For purposes of this analysis, the specific land uses were summarized into the following general land use categories:

- **Agricultural Lands** – Includes citrus and subtropical; deciduous fruits and nuts; field crops; grain and hay crops; pasture; rice; and truck, nursery, and berry crops.
- **Urban Lands** – Includes urban, semi-agricultural, municipal, domestic, industrial, and commercial land uses.
- **Undeveloped Lands** – Includes water, barren, and wasteland (mines and goldfields), riparian vegetation, and native vegetation.

The 1995 GIS data were updated to reflect the conversion of agricultural lands to urban uses using data provided by the FMMP (California Department of Conservation, 2004). Changes in cropping patterns were not updated.

The average annual water use is estimated using the calculated land use acreages and local water duty estimates for each land use category. These values are summed to determine the total water use (agricultural and urban) for each area. The surface water supply availability for each area is subject to district or agency access to surface water. The estimates of water supply availability are based on average hydrologic conditions. It is assumed that any agricultural demands not met by surface water are met with groundwater, and that all urban demands are met with groundwater.

Land Use Conditions

Existing Land Use Condition (2005)

Table 6.6-2 presents the existing general land use within the plan area by subarea. The plan area totals approximately 156,000 acres, which consists of about 56 percent agricultural lands (about 87,350 acres), 9 percent urban lands (about 13,930 acres), and 35 percent undeveloped lands (about 54,720 acres). As shown on Figure 6.6-2, most of the urban lands are located in the City of Marysville Subarea, City of Wheatland Subarea, and along the Highway 70 and Highway 65 corridors including the communities of Linda, Olivehurst, and Arboga.

Future Land Use Condition (2016)

Future land use conditions representing a potential level of developed for the year 2016 included the anticipated changes based on the county-accepted specific plans within the plan area. Table 6.6-2 presents the future land use conditions and the changes from the current conditions. The estimated 17,050-acre increased urban areas occur because of an approximate 8,550-acre reduction in agricultural acreage and the development of about 8,500 acres of lands currently identified as undeveloped.

Not much change is expected to affect land use conditions in the North Yuba Agricultural Subarea or the City of Marysville Subarea. The City of Wheatland Subarea is assumed to fully built out to the General Plan Update by 2016.

Most of the anticipated urban development (about 12,000 acres) is expected to occur in the Olivehurst-Linda – Plumas Lake area. As shown on Figure 6.6-2, this area is under considerable development pressure because of the existing approved specific plans, and plans for additional urban areas are expected. As additional plans for new urban areas are developed, they should be included in future updates of this plan. Some of these plans may be identified in the update of the Yuba County General Plan, which is scheduled to be updated in 2006-2007.

TABLE 6.6-2
Yuba County Land Use Conditions

| Area | 2004 Level of Development | | | 2016 Level of Development | | | Difference | | |
|-------------------------------------|---------------------------|---------------|----------------|---------------------------|---------------|----------------|---------------|---------------|--------------|
| | Agriculture | Urban | Total | Agriculture | Urban | Total | Agriculture | Urban | Total |
| North Yuba Groundwater Basin | | | | | | | | | |
| North Yuba Agricultural Subarea | 39,670 | 1,730 | 41,400 | 39,590 | 2,540 | 42,130 | -80 | 810 | 730 |
| City of Marysville Subarea | 50 | 1,650 | 1,700 | 50 | 1,650 | 1,700 | 0 | 0 | 0 |
| Subtotal | 39,720 | 3,380 | 43,100 | 39,640 | 4,190 | 43,830 | -80 | 810 | 730 |
| South Yuba Groundwater Basin | | | | | | | | | |
| South Yuba Subarea | 45,210 | 10,000 | 55,210 | 39,160 | 22,510 | 61,670 | -6,050 | 12,510 | 6,460 |
| City of Wheatland Subarea | 2,420 | 550 | 2,970 | 0 | 4,280 | 4,280 | -2,420 | 3,730 | 1,310 |
| Subtotal | 47,630 | 10,550 | 58,180 | 39,160 | 26,790 | 65,950 | -8,470 | 16,240 | 7,770 |
| Total Plan Area | 87,350 | 13,930 | 101,280 | 78,800 | 30,980 | 109,780 | -8,550 | 17,050 | 8,500 |

Notes:

Preliminary information from the Yuba County IRWMP, under preparation 2006.

All values in acres.

The Three Rivers Levee Improvement Authority is responsible for making improvements to the levees protecting RD 784, where much of the South Yuba development is located.

TRLIA developed a four-phase project to complete its program of levee improvements in RD 784 by November 2008. Phase 1 included improvements to the Yuba River (completed in 2004). Phases 2 and 3 include improvements along the Bear River, which are scheduled to be completed by November 2006. Phase 4 projects include improvements to the Yuba River (scheduled for construction in 2007), and Feather River (scheduled for construction in 2007 with completion in 2008).

2030 Buildout Condition

The 2030 buildout land use conditions are being developed in accordance with conversations with the local agencies, including water purveyors and the Yuba County Planning Department.

Water Use Conditions

The water needs of the agricultural and urban lands are met with a combination of surface water and groundwater supplies. The actual water supply mix varies depending on land use type (agricultural versus urban) and accessibility to surface water. Those areas that do not have access to surface water rely entirely on groundwater to meet their water demands. It is recognized that future water use conditions will differ from the current water use conditions because of changes in land use patterns and their water supplies.

Existing Water Use Conditions

Agricultural Water Uses. Existing agricultural water needs are met through a combination of surface water and groundwater supplies. Yuba River surface water delivery started in the late 1890s for agricultural use north of the Yuba River. Agricultural water demands south of the Yuba River were met using groundwater until 1983, when the surface water was brought to parts of the south county. This is the primary source of surface water in the county, with YCWA delivering about 310,000 af/yr. Actual deliveries vary depending on hydrologic conditions and water demands of the Member Units. Other surface water delivery sources include Browns Valley Irrigation District's Collins Lake and Plumas Mutual Water Company's Feather River diversion.

The YCWA Groundwater Management Plan (Montgomery Watson Harza, 2005) estimates that groundwater meets about 30 percent of the irrigation water supplies in the county. For example, RD 10, located in the northwest portion of the plan area, and Wheatland Water District, located in the southern portion of the plan area, are agricultural areas currently dependent largely on groundwater. Wheatland Water District is in the process of designing and constructing a canal to receive up to 41,000 af/yr of surface water from the Yuba River Project. This project would greatly reduce groundwater pumping in this portion of the groundwater basin.

Urban Water Uses. All urban valley areas, including Marysville, Olivehurst, Linda, Wheatland, and Beale Air Force Base, are dependent on the groundwater basin for their M&I water supply. In addition, rural domestic water needs are also met with groundwater. Estimates of urban water use are based on an evaluation of current specific plans. These values are intended to include all water uses associated with the urban land use categories, including residential, commercial, and industrial uses. With the existing urban acreage, the total urban water use totals about 30,600 af/yr, as shown in Table 6.6-3. The South Yuba Subarea in the Olivehurst-Linda-Plumas Lake area has the greatest current urban water use within the plan area.

Future Water Use Conditions (2016)

Future water use conditions for the projected year 2016 level of development are presented in Table 6.6-4. Year 2016 water use conditions reflects an increase in urban water use because of additional urbanization and a decrease in agricultural water use due to loss of irrigated agricultural acreage. With the expected changes in agricultural and urban land uses shown in Table 6.6-2, future agricultural water use is expected to decrease by about 7 percent to about 459,500 af/yr, and urban water use is expected to more than double to about 68,100 af/yr, as shown in Table 6.6-4. The total water use is estimated to be 527,600 af/yr.

The difference in water use between existing conditions (year 2004) and year 2016 conditions, presented in Table 6.6-5, shows that the overall change in water use is small, on the order of 6,000 af/yr. This is about 1 percent of the total water demand (527,000 af/yr). It should be noted that although the overall water demand does not change significantly for the entire Yuba County IRWMP area, local changes in water demand and available water supply do have water supply reliability implications.

For example, the change in land use (from agriculture to urban) might result in increased groundwater pumping and a reduction in surface water use. This might result in increased pressure on the local groundwater system unless strategies to deliver and treat surface water for urban areas are implemented. In addition, the urbanization might reduce local groundwater recharge.

The North Yuba Groundwater Subbasin is expected to have a relatively small increase in groundwater pumping for urban uses.

The South Yuba Groundwater Subbasin is expected to have reductions in groundwater recharge and a net reduction in groundwater production. In the Wheatland Water District, groundwater pumping is expected to be reduced by about 41,000 ac-ft because of the delivery of surface water.

TABLE 6.6-3
Yuba County – Existing Conditions (2004) Water Use

| Area | Agricultural Uses | | | Urban Uses | | | Total |
|---------------------------------|-------------------|-------------|---------|---------------|-------------|--------|---------|
| | Surface Water | Groundwater | Total | Surface Water | Groundwater | Total | |
| North Yuba Groundwater Basin | | | | | | | |
| North Yuba Agricultural Subarea | 188,500 | 39,000 | 227,500 | 0 | 3,800 | 3,800 | 231,300 |
| City of Marysville Subarea | 0 | 300 | 300 | 0 | 3,600 | 3,600 | 3,900 |
| Subtotal | 188,500 | 39,300 | 227,800 | 0 | 7,400 | 7,400 | 235,200 |
| South Yuba Groundwater Basin | | | | | | | |
| South Yuba Subarea | 170,100 | 82,700 | 252,800 | 0 | 22,00 | 22,000 | 274,800 |
| City of Wheatland Subarea | 6,300 | 4,100 | 10,400 | 0 | 1,200 | 1,200 | 11,600 |
| Subtotal | 176,400 | 86,800 | 263,200 | 0 | 23,200 | 23,200 | 286,400 |
| Total Plan Area | 364,900 | 126,100 | 491,000 | 0 | 30,600 | 30,600 | 521,600 |

Notes:

Preliminary information from the Yuba County IRWMP, under preparation 2006.

All values in ac-ft.

TABLE 6.6-4
Yuba County – Future Conditions (2016) Water Use

| Area | Agricultural Uses | | | Urban Uses | | | Total |
|---------------------------------|-------------------|-------------|---------|---------------|-------------|--------|---------|
| | Surface Water | Groundwater | Total | Surface Water | Groundwater | Total | |
| North Yuba Groundwater Basin | | | | | | | |
| North Yuba Agricultural Subarea | 188,100 | 39,000 | 227,100 | 0 | 5,600 | 5,600 | 232,700 |
| City of Marysville Subarea | 0 | 300 | 300 | 0 | 3,600 | 3,600 | 3,900 |
| Subtotal | 188,100 | 39,300 | 227,400 | 0 | 9,200 | 9,200 | 236,600 |
| South Yuba Groundwater Basin | | | | | | | |
| South Yuba Subarea | 210,900 | 21,200 | 232,100 | 0 | 49,500 | 49,500 | 281,600 |
| City of Wheatland Subarea | 0 | 0 | 0 | 0 | 9,400 | 9,400 | 9,400 |
| Subtotal | 210,900 | 21,200 | 232,100 | 0 | 58,900 | 58,900 | 291,000 |
| Total Plan Area | 399,000 | 60,500 | 459,500 | 0 | 68,100 | 68,100 | 527,600 |

Notes:

Preliminary information from the Yuba County IRWMP, under preparation 2006.

All values in ac-ft.

TABLE 6.6-5

Yuba County – Difference in Water Use (2016 less 2004)

| Area | Agricultural Uses | | | Urban Uses | | | Total |
|---------------------------------|-------------------|-------------|---------|---------------|-------------|--------|--------|
| | Surface Water | Groundwater | Total | Surface Water | Groundwater | Total | |
| North Yuba Groundwater Basin | | | | | | | |
| North Yuba Agricultural Subarea | -400 | 0 | -400 | 0 | 1,800 | 1,800 | 1,400 |
| City of Marysville Subarea | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal | -400 | 0 | -400 | 0 | 1,800 | 1,800 | 1,400 |
| South Yuba Groundwater Basin | | | | | | | |
| South Yuba Subarea | 40,800 | -61,500 | -20,700 | 0 | 27,500 | 27,500 | 6,800 |
| City of Wheatland Subarea | -6,300 | -4,100 | -10,400 | 0 | 8,200 | 8,200 | -2,200 |
| Subtotal | 34,500 | -65,600 | -31,100 | 0 | 35,700 | 35,700 | 4,600 |
| Total Plan Area | 34,500 | -65,600 | -31,500 | 0 | 37,500 | 37,500 | 6,000 |

Notes:

Preliminary information from the Yuba County IRWMP, under preparation 2006.

All values in ac-ft.

Urban groundwater pumping is expected to increase in the Olivehurst-Linda-Plumas Lake area by about 27,500 ac-ft. In addition, there may be a considerable reduction in groundwater recharge in the Olivehurst-Linda-Plumas Lake in this area resulting from loss of deep percolation from irrigated agriculture.

The buildout of the General Plan Update for the City of Wheatland is dependent on groundwater as the municipal water supply. The buildout areas are currently using groundwater for agricultural purposes. Although groundwater pumping for urban uses might be less than for the existing agricultural uses, there might be groundwater quality and groundwater supply concerns for this area.

Local groundwater management strategies might need to address these changing conditions. In addition, the Regional Water Recycling Project might also develop a recycled water source that could be used to offset urban irrigation water demands or some agricultural demands.

6.6.1.6 Local Water Management Issues and Strategies

The Yuba County IRWMP is currently developing new water management strategies for Yuba County that will ensure proper implementation of the proposed Lower Yuba River Accord with future growth in urban water demands, and address issues related to flood control, water supply reliability, groundwater management, environmental enhancement opportunities, and changes in land and water use conditions and water supply availability of the region. The IRWMP is being developed using the framework of the proposed Lower Yuba River Accord and detailed information available to the YCWA, other agencies participating in the planning process, and the local land use agencies within Yuba County. The IRWMP will integrate the strategies of YCWA and the local districts to develop a plan that meets the stated planning objectives. The water management strategies listed below will be further refined, and additional strategies may be added as the Regional Water Management Group discusses the strategies during the planning process.

Flood Management Issues

YCWA's long-term goal is to provide a 500-year level of protection for urban areas. In the near term, strategies and actions are being developed and implemented to achieve a 200-year level of protection for urban areas. The Three Rivers Levee Improvement Authority is constructing levee improvements to achieve a 200-year level of protection in the Reclamation District 784 area. YCWA is working with the state and the U.S. Army Corps of Engineers on the Yuba Basin Project to bring a 200-year or better level of protection to the Marysville area in addition to the Reclamation District 784 area where advanced levee improvement work is being performed by the Three Rivers Levee Improvement Authority. In addition to the levee improvement work, YCWA is working with the Department, the U.S. Army Corps of Engineers and the National Weather Service on the Forecast Coordinated Operations Project.

This project will maximize the benefits of flood storage in both Oroville and New Bullards Bar Reservoirs by coordinated operations of the projects during the major flood events. Additional strategies include projects such as levee improvements, surcharges of Lake Oroville and New Bullards Bar Reservoir, adding increased outlet capacity to New Bullards Bar Reservoir, and implementing the Colgate Powerhouse Tailwater Depression Project to allow release of flood flows through the powerhouse during the flood events.

Water Supply Reliability Issues

Water supply reliability is being impacted by regulatory decisions for fishery protection and water quality. The reliability of YCWA's surface water supply has been significantly impacted by the 2001 SWRCB Decision 1644, which significantly increased instream flow requirements for fishery protection. Legal challenges to this decision are on hold while the Lower Yuba River Accord settlement process is ongoing. The Lower Yuba River Accord uses higher instream flow rates, water transfers, and conjunctive use tools as mechanisms to settle the dispute. Local water supply reliability improvement strategies include the development of tools to optimize the management of surface water resources, development of conjunctive use projects and water use efficiency projects, water conservation, and water recycling. Groundwater management and protection strategies will be refined to ensure long-term, reliable, and good-quality groundwater for the region. Some of the specific water supply management strategies being evaluated include the following:

- Implementation of Lower Yuba River Accord provides for instream flows on the Lower Yuba River, while providing for long-term water supply reliability through implementation of a conjunctive use program and water transfers.
- Expansion of surface water delivery to the Wheatland area to improve local water supply and improve conjunctive use opportunities.
- Improved conjunctive use of groundwater and surface water to fully use the available water supplies and improve overall water supply reliability in different hydrologic-year types. This includes YCWA's groundwater management plan, new dedicated groundwater aquifer monitoring wells, and studies to better understand the groundwater aquifer.
- Participation in the SVWMA (Phase 8) for the purpose of settling Bay-Delta water quality issues.
- Preliminary plans for a new point of diversion on the Feather River to retain water supply reliability through additional surface water supplies and conjunctive use to meet existing and new water demands.
- Making local water supply available for statewide use when there is adequate local supplies and shortages in the rest of the state. In the past, this has been accomplished through YCWA's groundwater substitution programs with its Member Units where water

has been transferred to the Environmental Water Account and the Department's Dry Year Program. The Lower Yuba River Accord is the mechanism to continue this practice into the future. Regional wastewater recycling can improve water supply reliability by reducing surface water diversions and withdrawals from the local aquifers, thereby extending water supply reliability for customers by producing a local uninterrupted water supply.

Water Quality Protection and Improvement Issues

Water quality protection and improvement strategies are being explored to improve and protect local water supplies. Some of the water quality protection strategies being evaluated include the following:

- Developing a common wastewater discharge from local wastewater treatment plans or a regional wastewater treatment facility and water recycling program to reduce discharges to the Feather River and improve water quality for downstream water users.
- Identifying opportunities for agricultural water reuse within the basin.
- Identifying areas of groundwater quality concerns either from natural or anthropogenic sources and developing treatment options to provide potable water supplies.
- Implementing wellhead protection measures.

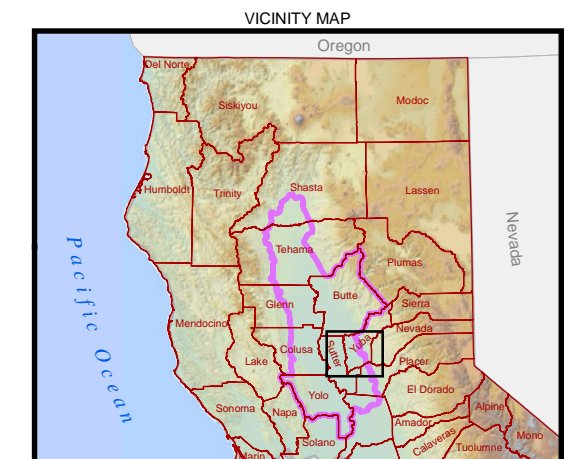
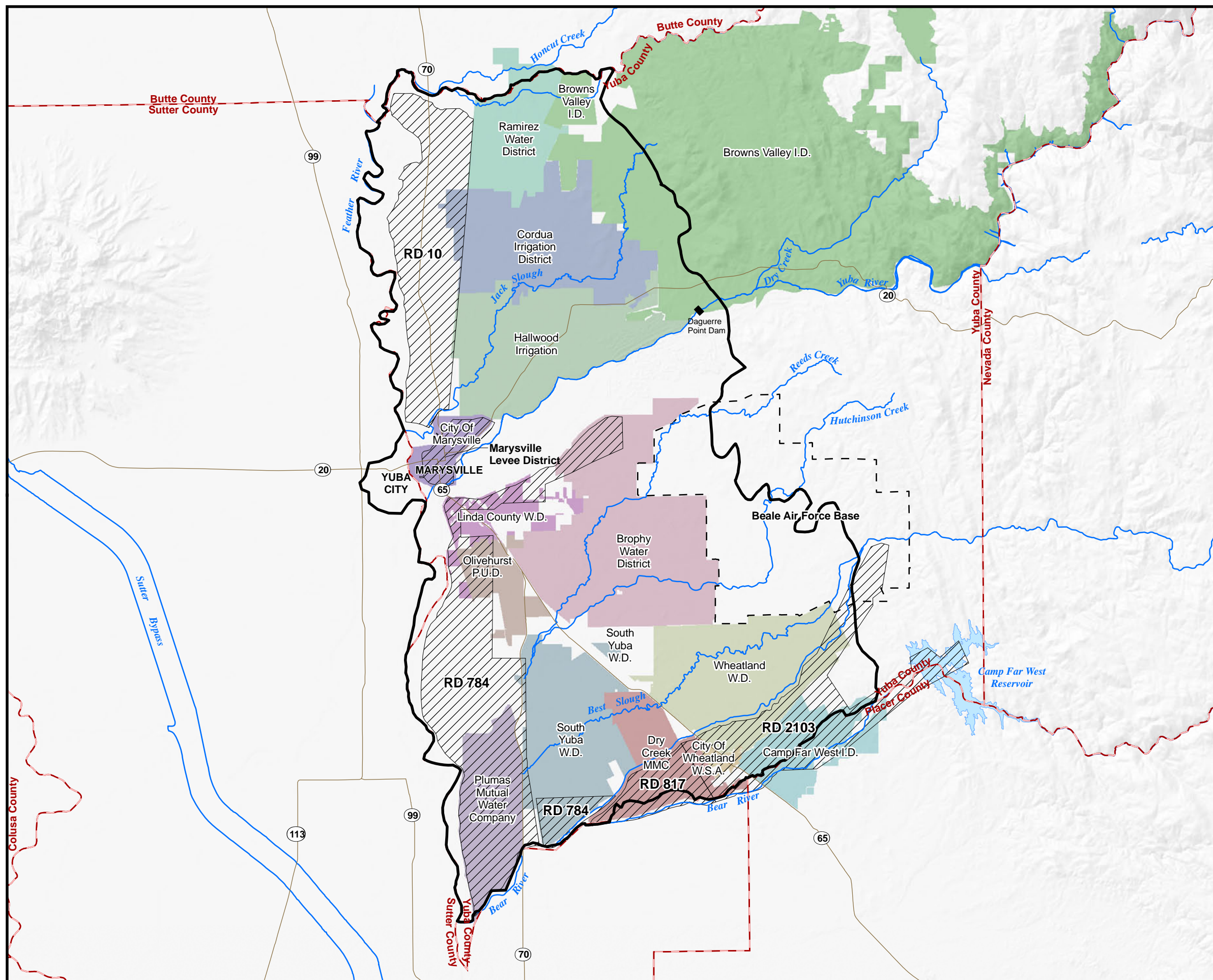
Ecosystem Restoration Issues

Ecosystem restoration strategies are being evaluated that include instream flows for the Lower Yuba River as defined in the Yuba Accord, levee setbacks to enhance habitat, improvements to water habitat for fisheries, and the creation and enhancement of wetlands and habitats. Some of the specific ecosystem restoration management strategies being evaluated include the following:

- Lower Yuba River Flow Enhancement (implementation of Lower Yuba River Accord)
- Environmental and Habitat Protection (construction of setback levees)
- Wetlands Protection and Enhancement (construction of setback levees)

Recreation and Public Access Issues

Public access to parks, fishing, bike trails, and other means of recreation along the Yuba River have always been of value to the area and will continue in the future. Recreation and public access strategies are being explored to provide additional recreational opportunities along the Lower Yuba River. These might include projects to develop and expand existing facilities as well as safe public access along the Yuba River corridor. Additional projects may explore the recreational opportunities associated with the levee setback projects that are currently being evaluated along the Bear and Feather Rivers.



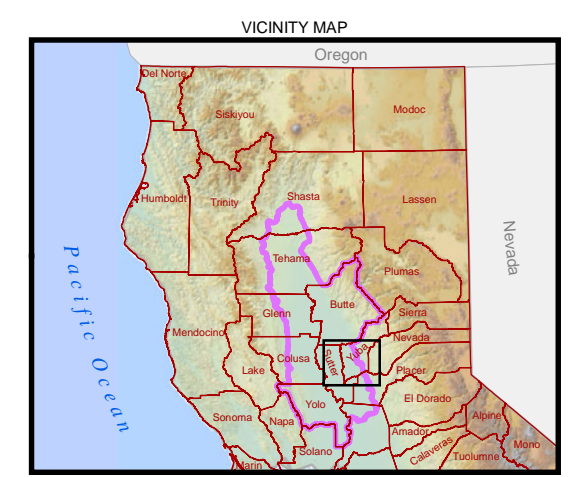
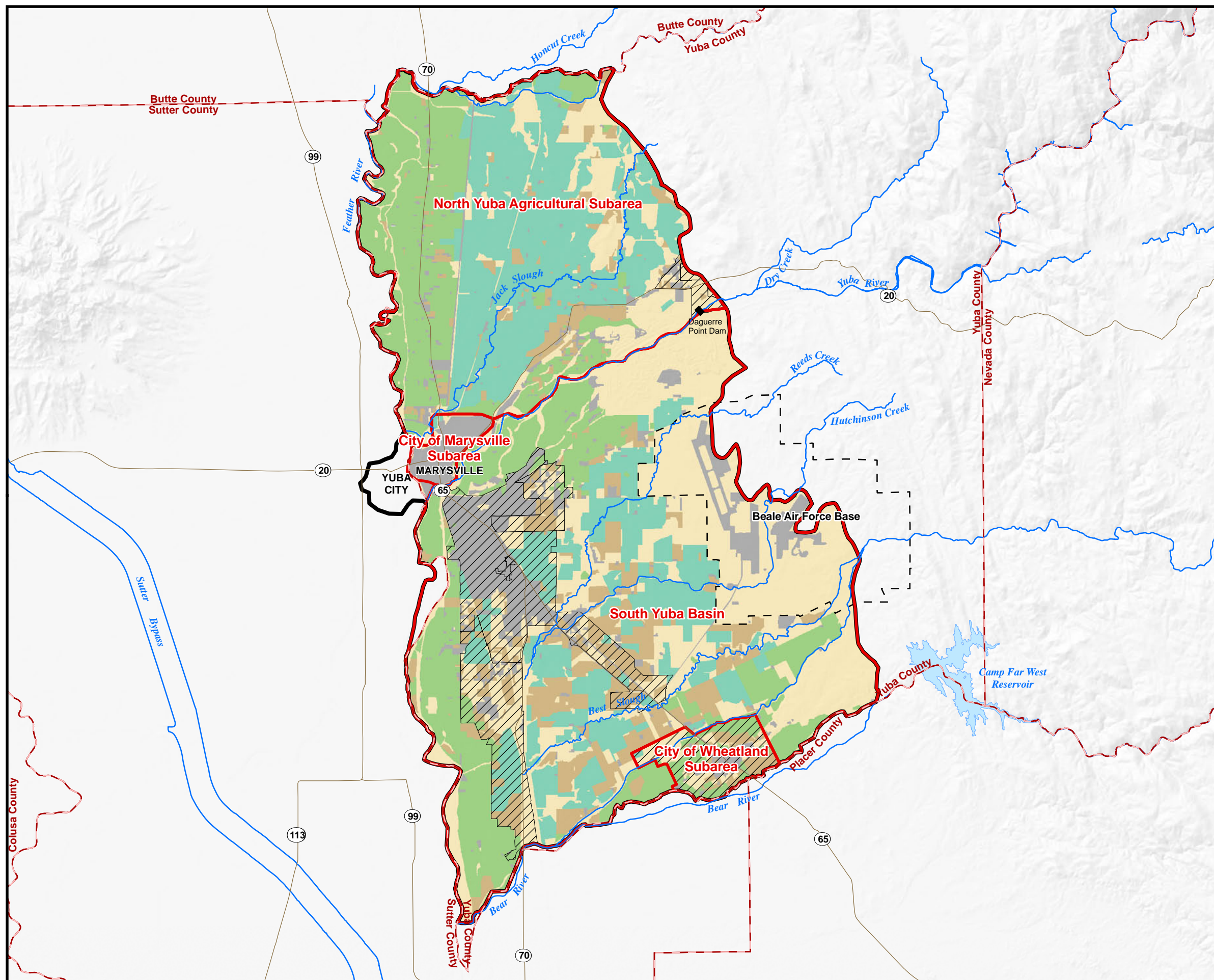
Legend

- State / US Highway
- River / Stream
- County Boundary
- Plan Area
- Reclamation District
- Beale Air Force Base

Source:
1. Yuba County, 2005



FIGURE 6.6-1
PLAN AREA AND
WATER MANAGEMENT AGENCIES
SACRAMENTO VALLEY IRWMP



- Legend**
- State / US Highway
 - River / Stream
 - Beale Air Force Base
 - County Boundary
 - Approved Urban Development
 - Water Managemant Subareas
 - Plan Area
- 2004 Land Use**
- Urban
 - Annual Crops, Rice
 - Annual Crops, Other
 - Permanent Crops
 - Undeveloped

Source:
1. Dept. of Conservation FMMP, Yuba County

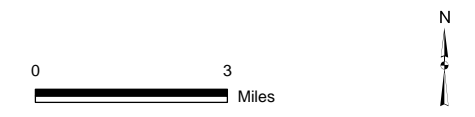
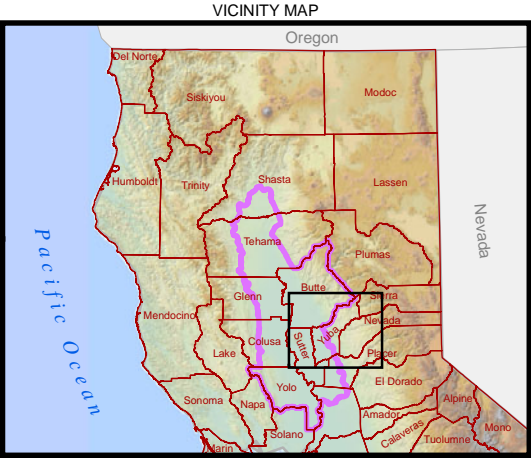
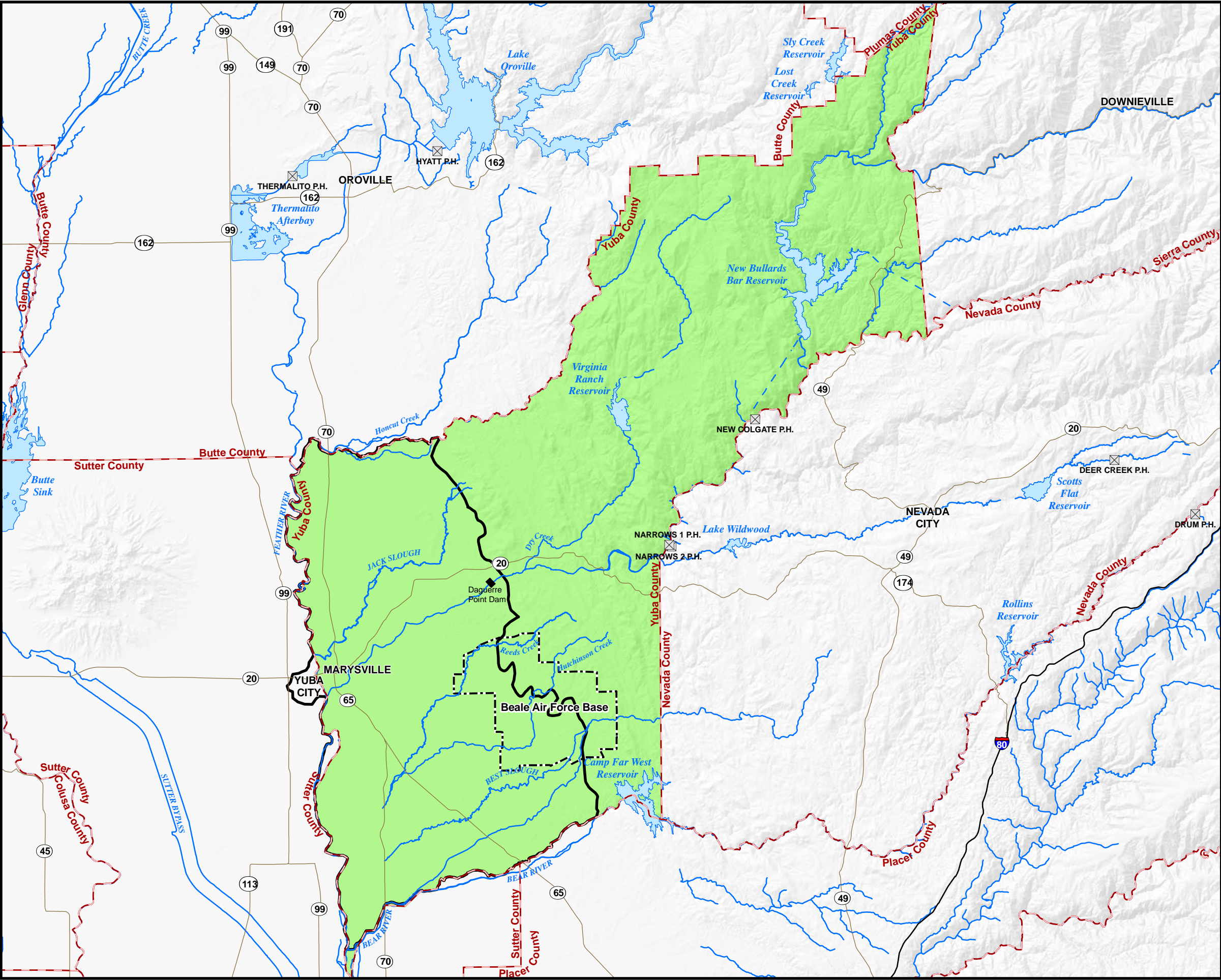


FIGURE 6.6-2
WATER MANAGEMENT SUBAREAS
SACRAMENTO VALLEY IRWMP



- Legend**
- Powerhouse
 - State / US Highway
 - River / Stream
 - County Boundary
 - Beale Air Force Base
 - Plan Area

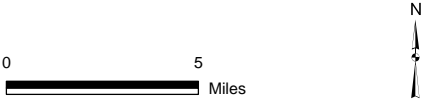


FIGURE 6.6-3
WATER DEVELOPMENT FACILITIES
SACRAMENTO VALLEY IRWMP