Executive Summary

"You can't manage what you don't measure." That old adage sums up the purpose of the *2016 Water Inventory and Analysis Report.* The Butte County Board of Supervisors and the Butte County Water Commission recognize that water resource management is essential to the long-term economic and environmental health of the County. They also understand that the management and protection of water resources is contingent upon having adequate scientific information and analytical tools to assess current and future conditions. The foundation of water resource management must be built on data, research and analysis. For over two decades, the Board of Supervisors supported the development of a robust suite of water resource data[1] that accounted for baseline demand, water resource availability, and analysis of changed circumstances. These materials provided the foundation for water resource management in Butte County. First produced in 2001, the Butte County *Water Inventory and Analysis Report* (WI&A) provided an important set of water demand analyses. In 2008 a report was prepared to evaluate changes from the 2001 WI&A (Craddock 2008). As part of the *2005 Butte County Integrated Water Resources Plan* (CDM 2005), agricultural and urban water demand forecast reports were prepared, allowing Butte County to assess future water demand and the availability to identify economic and ecologic consequences (e.g., groundwater overdraft, land subsidence, water supply shortages). However, existing baseline and forecast information are outdated and are insufficient for future planning purposes.

In 2013 the Butte County Board of Supervisors began the Water Resource Management and Protection Project. The Project, through a number of phases, will strengthen Butte County's water resource management capabilities by developing comprehensive water resource analyses and analytical tools. The *2016 Water Inventory and Analysis Report* and the update of the Butte Basin Groundwater Model (BBGM) were the first phase of the Project. The *2016 Water Inventory and Analysis Report* not only updates the analysis of the County's water supply and demand, but it fundamentally changes the County's analytical approach to help sustain water resources for future generations.

Although the *2016 Water Inventory and Analysis Report* builds upon the *2001 Water Inventory and Analysis Report*, a number of important distinctions represent a paradigm shift in Butte County's analytical approach. While the 2001 report provided a detailed snapshot of normal and drought hydrologic conditions and the analysis method provided valuable information that served the needs of that time, future planning and analysis require a more robust approach. One of the important changes is the integration of the BBGM as a platform for developing and analyzing data for the *2016 Water Inventory and Analysis Report* and future analyses. The BBGM is a mathematical model that covers the extent of the Vina, West Butte, East Butte, and North Yuba subbasins, otherwise referred to as the Butte Basin. The BBGM is a physically

[1] Water Inventory and Analysis (CDM 2001), Urban and Agricultural Water Demand Forecast (CDM 2004a, 2004b), Butte County Groundwater Inventory (DWR 2005), Butte Basin Groundwater Model (HCI 1996, CDM 2008a)

based, hydrologic model that accounts for various sources and uses of water continuously over time. It can examine water supply and demand scenarios with outcomes that lie beyond the realm of historical experience. The BBGM can produce outputs that describe impacts from different scenarios (e.g., increased demands, climate change, and droughts) compared to current (up to 2014) water supply and demand conditions. To maximize the capabilities of the BBGM, the code and data inputs had to be updated. The update of the BBGM was undertaken concurrently with the development of the *2016 Water Inventory and Analysis* report.

The *2016 Water Inventory and Analysis* project includes development of potential future demand and climate change scenarios to support development of projections of future water budgets and identification of associated water management challenges. Although predicting the future is an exercise subject to substantial uncertainty, reasonable assumptions can be made about potential future conditions for planning purposes to better understand how the system may respond to potential changes. For example, land use plans have set targets for development for the next couple of decades. As a result, future water demand can be based on these plans. Changes in cropping patterns and associated irrigation practices can have a substantial effect on total water demands, as well as the portion of demand met by surface water versus groundwater. Estimating potential shifts in cropping patterns allows for the evaluation of resultant changes in water demands. Another important future consideration is the impact of short and long term drought periods on available water supplies. Lastly, climate change may alter groundwater recharge and water supply reliability.

The integration of the BBGM with the *2016 Water Inventory and Analysis Report* positions the Department with the long term ability to conduct water resource analyses as the need arises. An early benefit of this approach was realized through the *Assessment of Butte County Drought Impacts, 2012-2015* Technical Memorandum (Davids Engineering 2016). The assessment evaluated drought impacts on the basin through analysis derived from the IWFM Demand Calculator and supported by recent development of water budgets as part of the *Feather River Regional Agricultural Water Management Plan* (FRRAWMP) (NCWA 2014). The assessment sought to answer two broad questions – (1) can a reasonable basin-wide estimate of increased demand on the basin as a result of the drought be provided, and (2) how do previous analyses compare to the current 2012-2015 drought? The drought analysis demonstrated the analytical capabilities to provide answers to compelling water management questions. The obligation of the Sustainable Groundwater Management Act (SGMA) of 2014 to conduct water balance (or "water budget") analyses necessitates having the capacity to perform novel analytical assessments. The completion of the *2016 Water Inventory and Analysis Report* and the updated BBGM prepares the County to meet these obligations.

2016 Water Inventory and Analysis Highlights

The *2016 Water Inventory and Analysis* (WI&A) considers conditions in six inventory units (IUs): Vina, West Butte, East Butte, North Yuba, Foothill, and Mountain. These IUs are further divided into subinventory units (SIUs) as shown in Figure ES.1. The Vina, West Butte, East Butte, and

North Yuba IUs correspond to the portions of Sacramento Valley groundwater subbasins within Butte County as defined by the California Department of Water Resources (DWR) in Bulletin 118 (2003).

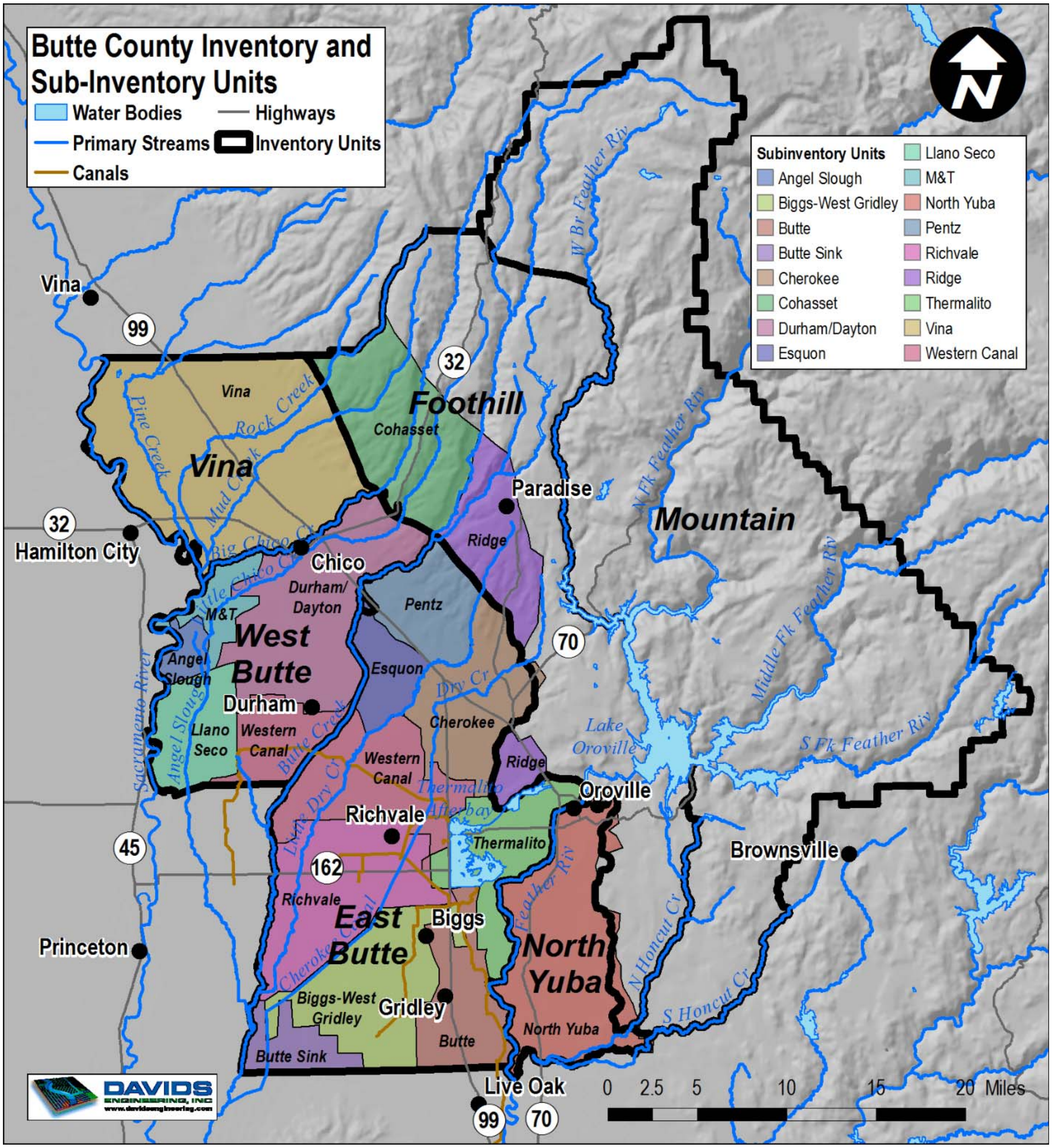

Figure ES.1. Butte County Water Inventory and Analysis Inventory Units and Subinventory Units.

The WI&A water budgets highlight the nexus of land use and water resources. Specifically, recent trends in land use within Butte County are discussed, along with historical surface water diversions and groundwater pumping. Then, water budgets quantifying inflows of water to and outflows from the land surface are presented, followed by a description of potential demand and climate change scenarios to support future analysis using the BBGM. Finally, conclusions and recommendations/next steps from the WI&A are summarized.

Land Use

Butte County covers approximately 1,677 square miles (1.073 million acres). The valley floor area[2] represents approximately 452,000 acres (ac) and includes approximately 234,000 ac of irrigated agriculture, 141,000 ac of non-irrigated lands, 47,000 ac of developed lands, and 30,000 ac of wetlands. Non-irrigated land includes native grasses, shrubland, forest, barren land, and riparian vegetation. The Foothill and Mountain IUs are primarily non-irrigated rangeland and forest with some development, particularly in the Paradise area and other rural communities, and represent approximately 216,000 acres and 407,000 acres, respectively. Land use based on a detailed survey conducted by the DWR Northern Region Office (NRO) in 2011 is shown in Figure ES.2.

Trends in general land use on the valley floor include relatively steady irrigated agricultural acreage[3] since the mid-1990's and a decrease in non-irrigated land[4] of approximately 11,000 acres since the mid-1990's (Figure ES.3). These decreases are balanced by an increase in developed land[5] over this period, as well as a lesser increase in wetlands[6].

Primary crops grown are rice and orchards, with rice representing an average of approximately 103,000 acres and orchards representing an average of approximately 93,000 acres (Figure ES.4). Almonds (38,000 acres), walnuts (34,000 acres), and prunes (11,000 acres) are the primary orchard crops, with decreases in almond and prune acreage over time offset by increases in walnuts and, to a lesser extent, other trees and vines (e.g., olives, peaches and nectarines, kiwis, pistachios, pears, and cherries) (Figure ES.5). Other than orchards and rice, crops include pasture and alfalfa (13,000 acres), grain (4,000 acres), and miscellaneous field and annual crops (5,000 acres) (Figure ES.6). Acreages for grain and other crops have decreased substantially over time, while pasture and alfalfa acreage has increased. On average, 16,500 acres were idle annually.

[2] Defined as the Vina, West Butte, East Butte, and North Yuba IUs.
[3] Irrigated agriculture includes irrigated land in annual and perennial crops, including land temporarily idled in some years for agronomic or other reasons.
[4] Non-irrigated land includes native grasses, shrubland, forest, barren land, and riparian vegetation.
[5] Developed land includes urban, rural residential, and semi-agricultural areas (farmsteads, feedlots, etc.).
[6] Wetlands consist of seasonal, semi-permanent, and permanent wetlands. Additionally, Thermalito Afterbay within the East Butte Inventory Unit is classified as wetlands for purposes of this report and represents approximately 4,000 acres.

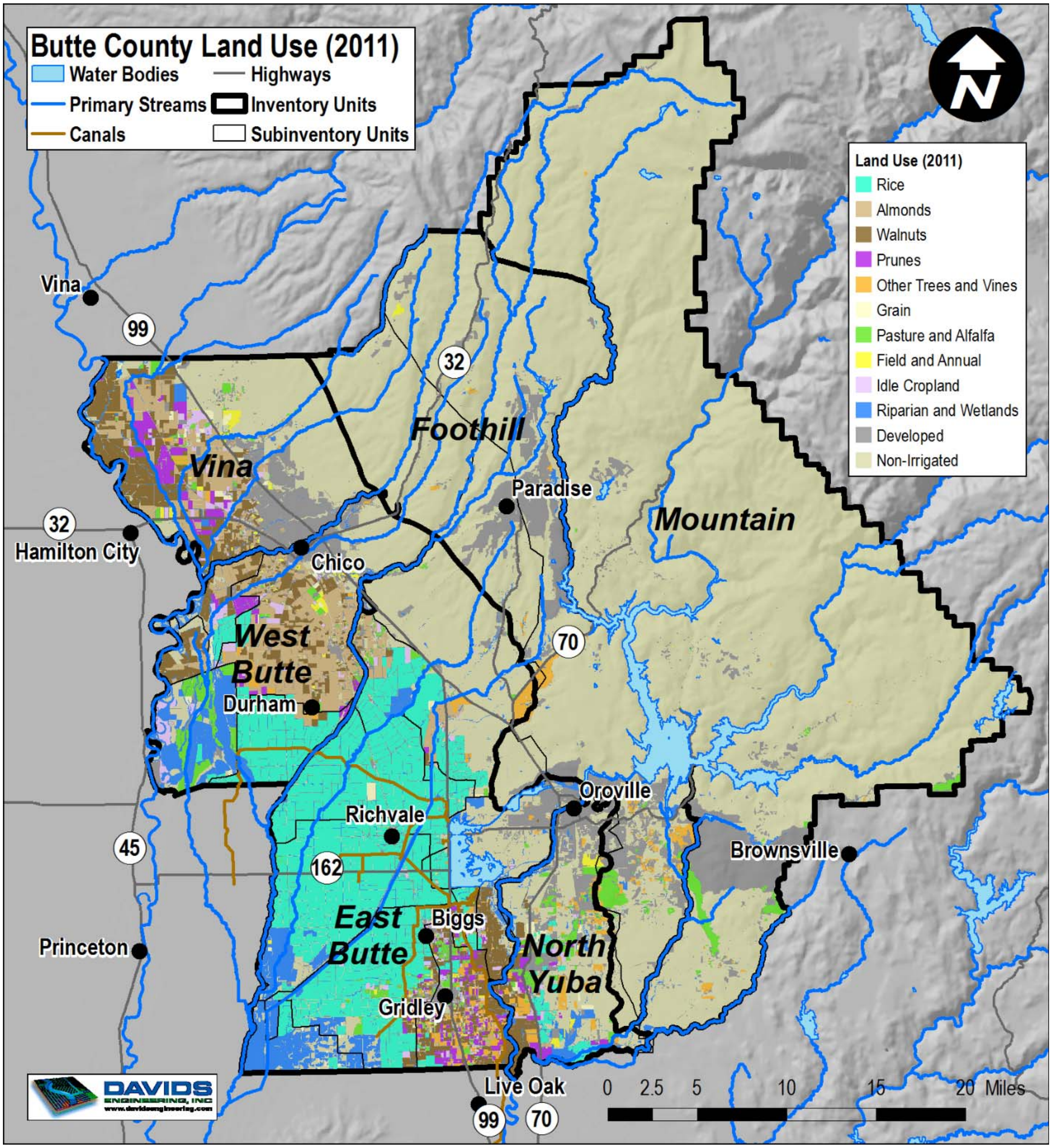

Figure ES.2. Butte County Land Use, 2011 (Source: DWR).

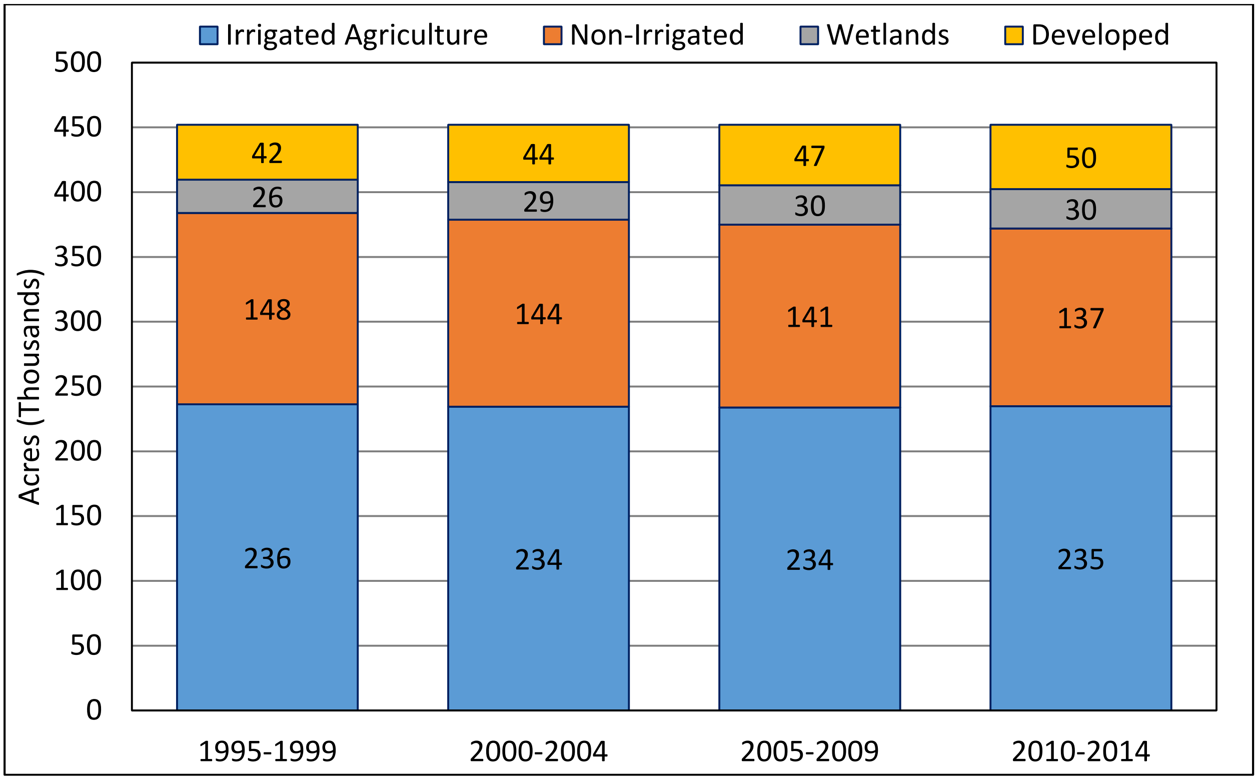

Figure ES.3. Butte County Valley Floor General Land Use, 1995-2014.

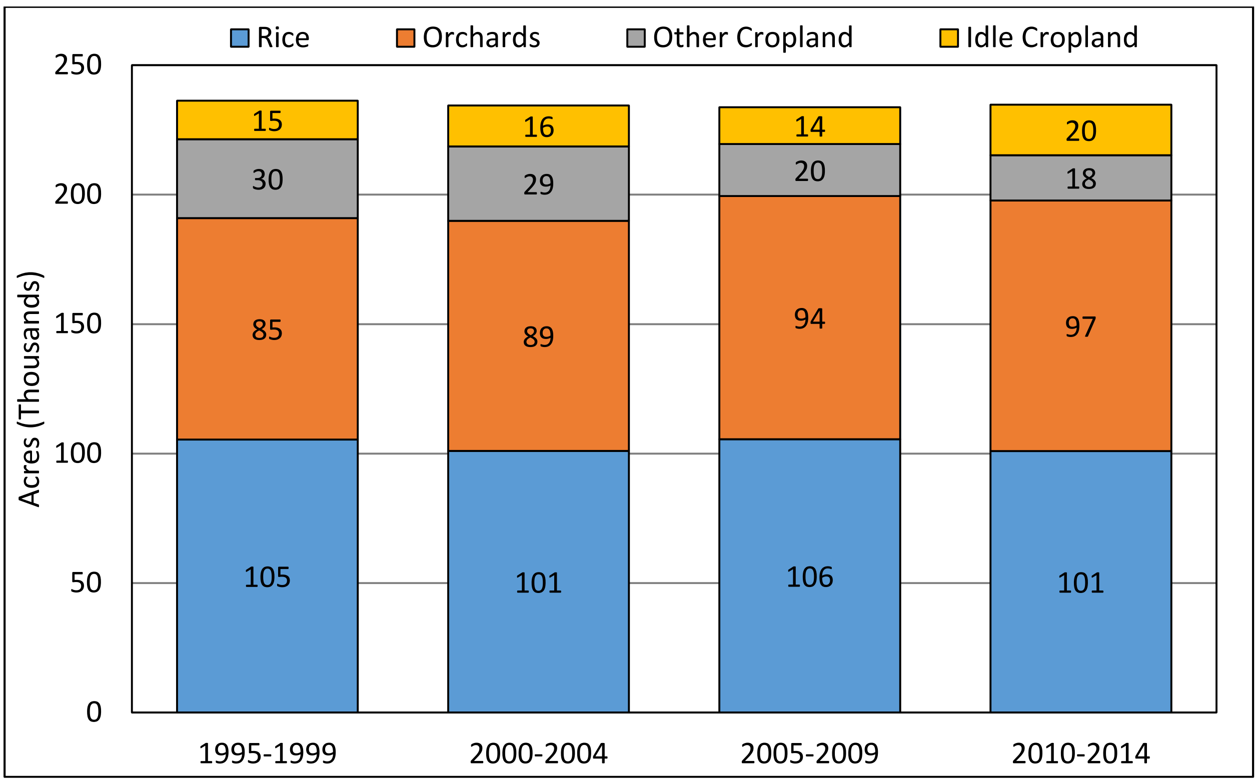

Figure ES.4. Butte County Valley Floor Irrigated Agricultural Land Use, 1995-2014.

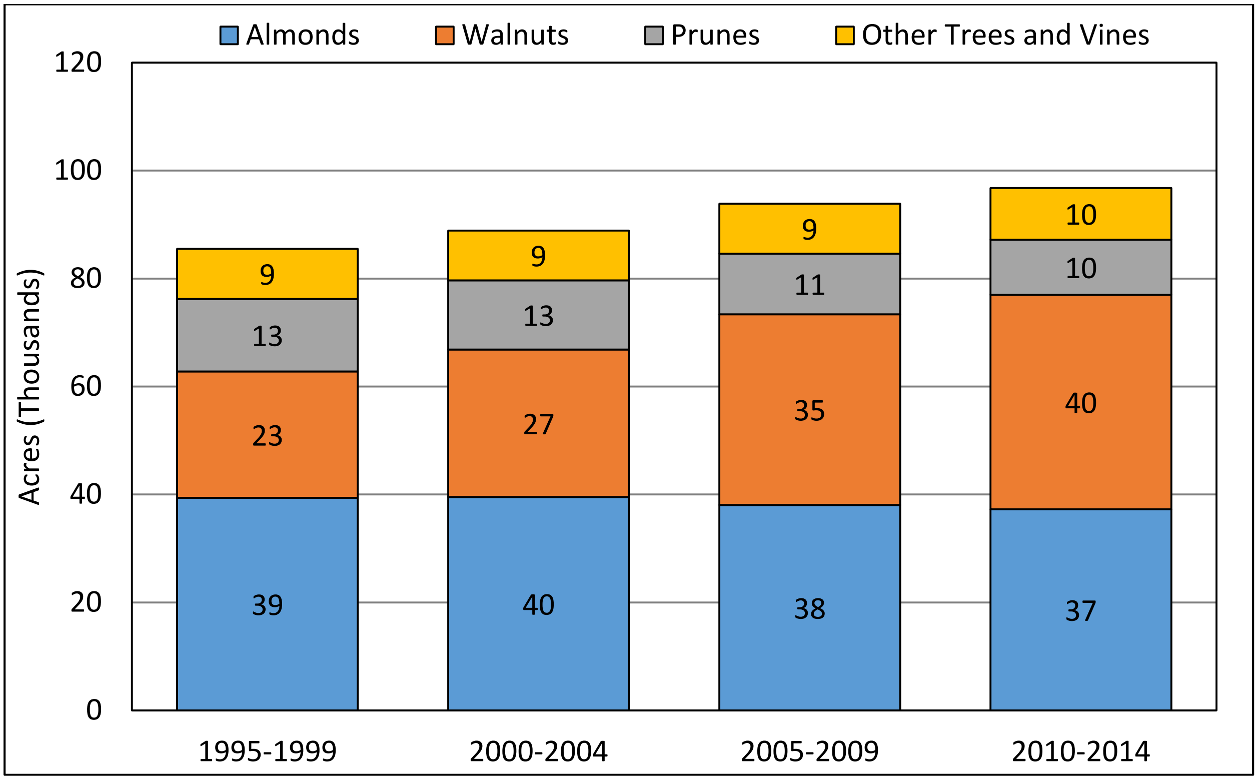

Figure ES.5. Butte County Valley Floor Orchard Land Use, 1995-2014.

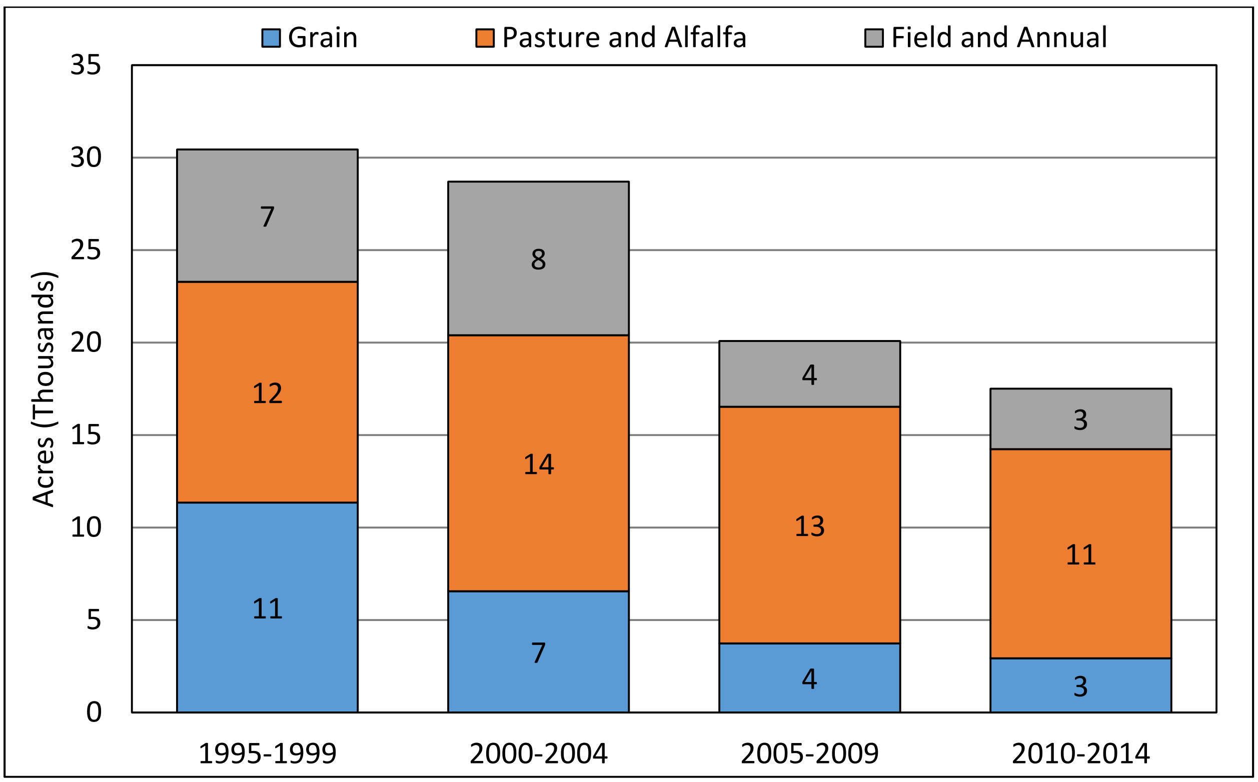

Figure ES.6. Butte County Valley Floor Other Crop Land Use, 1995-2014.

Surface Water Diversions

Primary surface streams relied on to provide water supplies in Butte County include the Feather River and Butte Creek. Water is also diverted from the Sacramento River and other, minor sources[7]. The vast majority of these diversions occur within the valley floor IUs, although Paradise Irrigation District also diverts water for domestic and M&I use within its service area.

Estimated annual diversions for water years[8] 2000 to 2014 are presented in Figure ES.7. Total surface water diversions during this period ranged from 742,600 af to 906,800 af with an average of 827,900 af. Feather River diversions ranged from 629,900 af to 778,600 af during this period with an average of 696,600 af. Butte Creek diversions ranged from 24,400 af to 71,600 af with an average of 54,700 af. Sacramento River diversions ranged from 2,400 af to 18,300 af with an average of 8,400 af. Other diversions ranged from 49,400 af to 58,800 af with an average of 54,600 af.

The primary destination of diverted surface water in Butte County is irrigation deliveries; however, some water is lost through conveyance to seepage, spillage, and evaporation. Estimated annual deliveries and conveyance losses between 2000 and 2014 are presented in Figure ES.8. Deliveries ranged from 635,300 af to 777,100 af with an average of 709,200 af. Losses to seepage, spillage, and evaporation averaged 55,200 af, 58,800 af, and 4,700 af, respectively.

Diversions are subject to limitations based on diversion agreement terms (e.g. settlement contracts between the Department of Water Resources and Western Canal Water District and the Joint Districts) and regulatory actions of the State Water Resources Control Board (SWRCB). SWRCB regulatory actions to curtail diversions may apply to senior pre-1914 and riparian water rights in periods of drought, as occurred in 2015.

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[7] Other sources include miscellaneous riparian diversions and surface water supplies. These include diversions from the Feather River watershed other than the Feather River Settlement Contractors (e.g., South Feather Water and Power) and the Cherokee Canal.

[8] A water year refers to the period from October to September each year, with the beginning month of October selected based on the typical beginning of the winter rainy season. For example, the 2000 water year includes the period from October 1999 to September 2000.

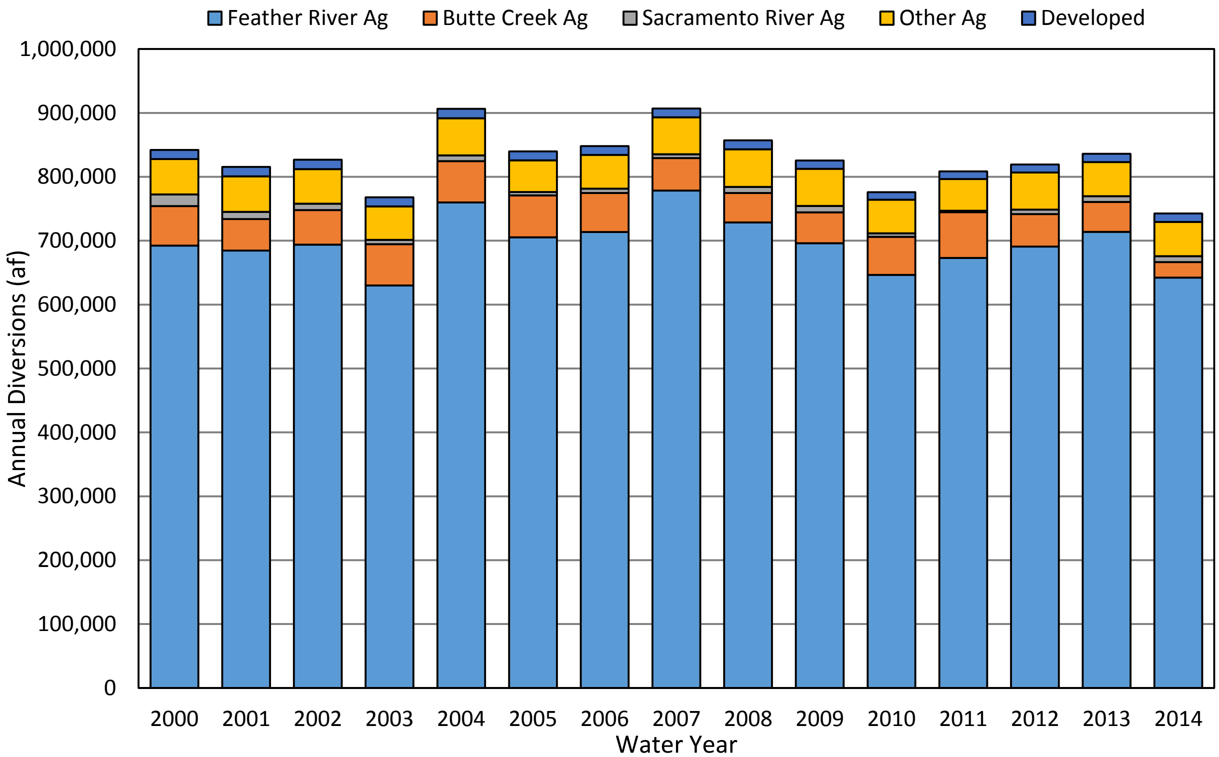

Figure ES.7. Butte County Estimated Surface Water Diversions by Source, 2000-2014.

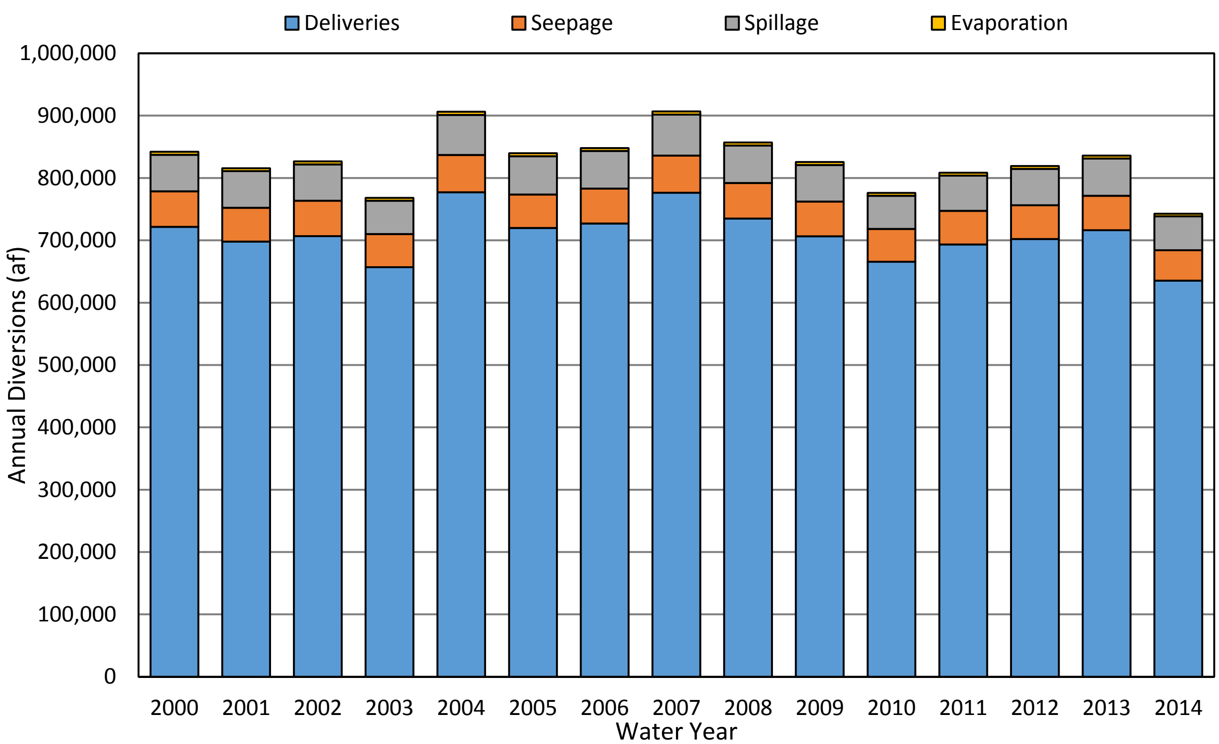

Figure ES.8. Butte County Estimated Surface Water Deliveries and Conveyance Losses, 2000-2014.

Groundwater Pumping

Groundwater provides a source of supply to meet irrigation, domestic, M&I, environmental, and stockwater demands. Estimated pumping within the valley floor IUs for water years 2000 to 2014 is presented in Figure ES.9. In the figure, symbols for each year are color-coded based on the Sacramento Valley Water Year Index (WYI), a key indicator of seasonal variability in interannual hydrology. The WYI is used to classify individual water years as Wet (W), Above Normal (AN), Below Normal (BN), Dry (D), or Critical (C) with respect to surface water runoff in the Sacramento River Basin. Total estimated groundwater pumping during this period ranged from 316 thousand acre-feet (taf) in the wet year of 2011 to 489 taf in the critically dry year of 2008. Average pumping during this period is estimated to be 411 taf annually.

As indicated in the figure, pumping varies substantially from year to year and is highly correlated to the WYI, with increased pumping in dry and critical years to meet increased irrigation demands and decreased pumping in wet and above normal years. Although linear regression suggests some increase in pumping over time, the correlation between pumping and time is weak (R^2 = 0.05), and the apparent increase between 2011 and 2014 is likely due to drought. Pumping in the County increases substantially in years during which Feather River supplies in the East Butte and West Butte IUs are curtailed. For example, in the curtailment year of 2015, it is estimated that groundwater pumping in the Feather River Settlement Contractor service areas within Butte County increased by approximately 130 taf in response to curtailment of approximately 50 percent of surface water supplies (Davids Engineering 2016).

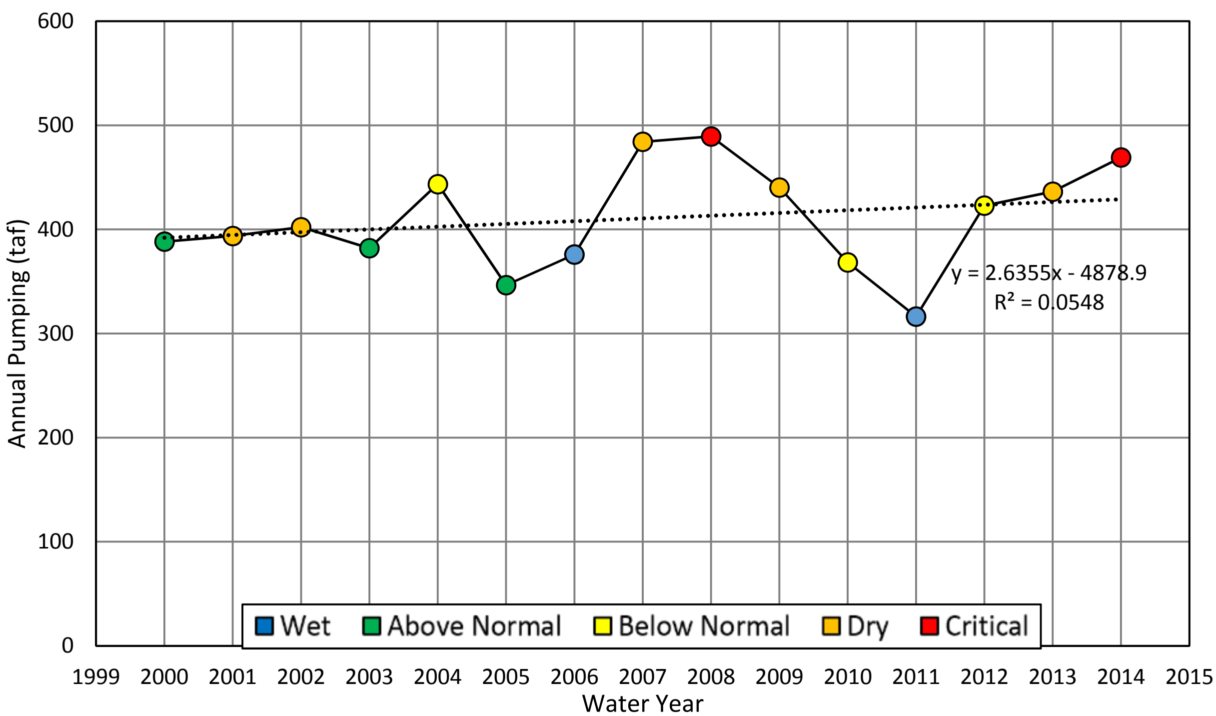

Figure ES.9. Butte County Valley Floor Estimated Groundwater Pumping and Water Year Type, 2000-2014.

Water Budget

Presented in this report are water budget results for the land surface[9]. A water budget is just like a checking account: The inflows (deposits) minus the outflows (withdrawals) must add up to the total change in storage (account balance) of water within the defined region over time. Water budgets can be defined for different subsets of the system. As shown in Figure ES.10, the inflows include precipitation (P), applied water (A_W) (i.e. irrigation), and reuse (U), and the outflows include evapotranspiration (ET), runoff (R_p), return flow (R_f), and deep percolation (D). By developing annual water budgets, we can see how each of these components changes over time as water supplies and demands change.

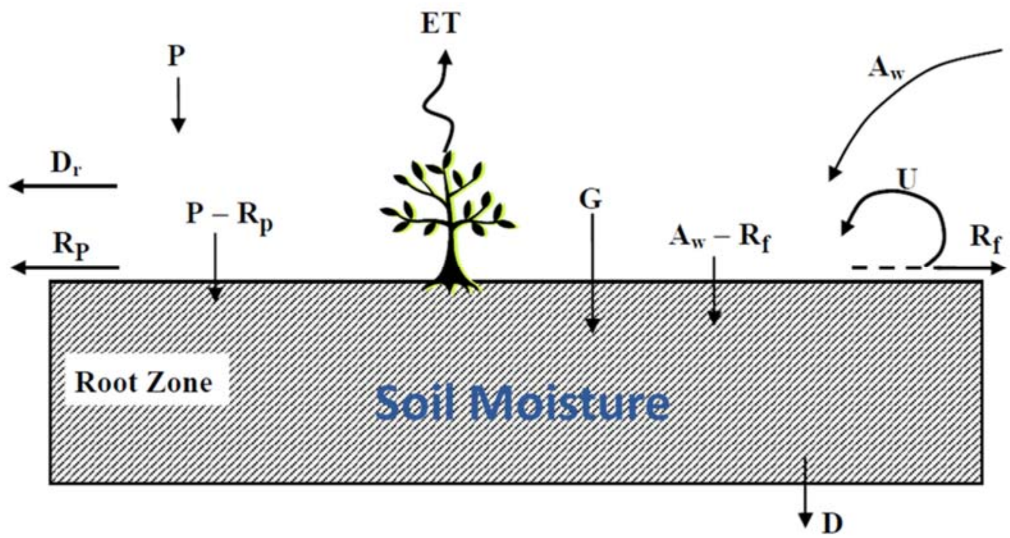

Figure ES.10. Representation of Root Zone Flow Processes by IDC (DWR 2015) (P = Precipitation, ET = Evapotranspiration, A_w = Applied Water, U = Reuse, R_f = Irrigation Return Flow, D_r = Outflow from Rice and Wetland Pond Drainage, R_p = Runoff of Precipitation, D = Deep Percolation, and G = Generic Water Source (e.g. Fog)) (Source: DWR).

County-wide, approximately 95 percent of developed water use[10] is for irrigated agriculture and managed wetlands, with the remaining 5 percent for developed lands. Almost all irrigated agriculture and managed wetlands water use and the majority of developed water use occurs on the valley floor, although both surface water and groundwater supplies are critical to the population of the Foothill and Mountain IUs.

[9] The land surface water budgets include irrigated agricultural lands, developed lands, non-irrigated lands, and wetlands. The budgets do not include waterways such as streams, canals, and drains.

[10] Developed water use refers to the use of surface water diversion and groundwater pumping to meet agricultural, urban, managed wetlands, or other demands.

Developed water supplies for the valley floor IUs include surface water diversions and groundwater pumping. Primary demands in valley floor IUs are irrigation demands to meet crop ET requirements, managed wetlands, and developed lands.

Land surface inflows on the Butte County Valley Floor (Vina, West Butte, East Butte, and North Yuba IUs) average approximately 2.040 million acre-feet (maf) annually and include precipitation (914 taf), applied surface water (715 taf), and groundwater pumping (411 taf) (Figure ES.11, Figure ES.12, and Table ES.1). Precipitation varied from 562 taf in 2007 to 1.314 maf in 2011. Groundwater pumping varied from 316 taf in 2011 to 489 taf in 2008. Applied surface water varied from 641 taf in 2014 to 782 taf in 2007. Annual flows are provided in Table ES.1, along with the water year type as discussed in Section 4.2.

As indicated in Figure ES.12, applied surface water was relatively steady from year to year between 2000 and 2014, with greater variability in groundwater pumping. In general, pumping increases in dry years due to increased irrigation requirements resulting from decreased precipitation. With respect to outflows, total ET is relatively steady over time, with variability in deep percolation and surface water runoff varying largely in proportion to annual precipitation.

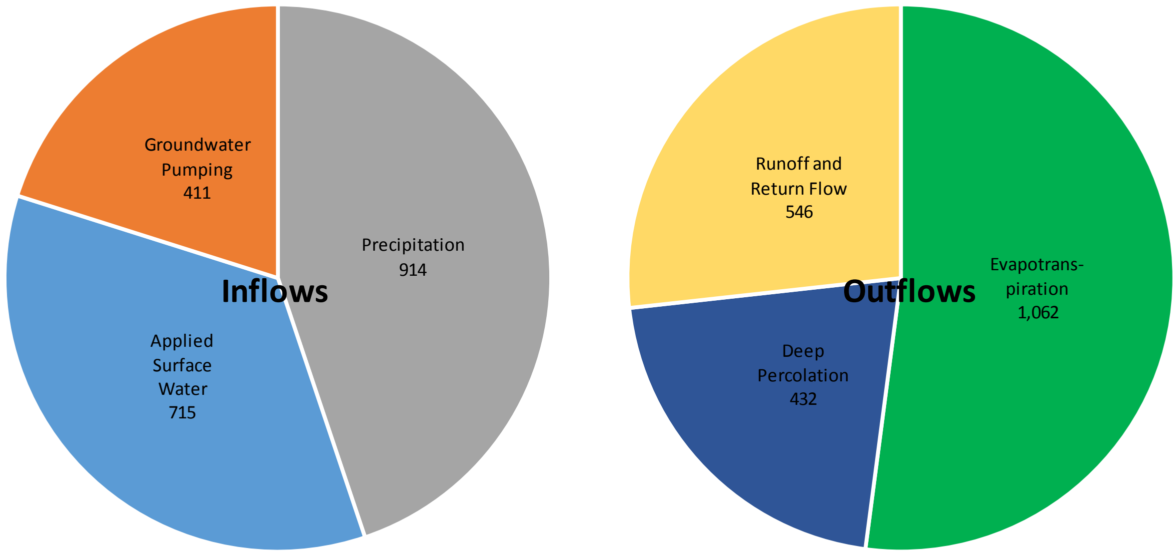

Figure ES.11. Butte County Valley Floor Overall Average Annual Inflows and Outflows, 2000-2014.

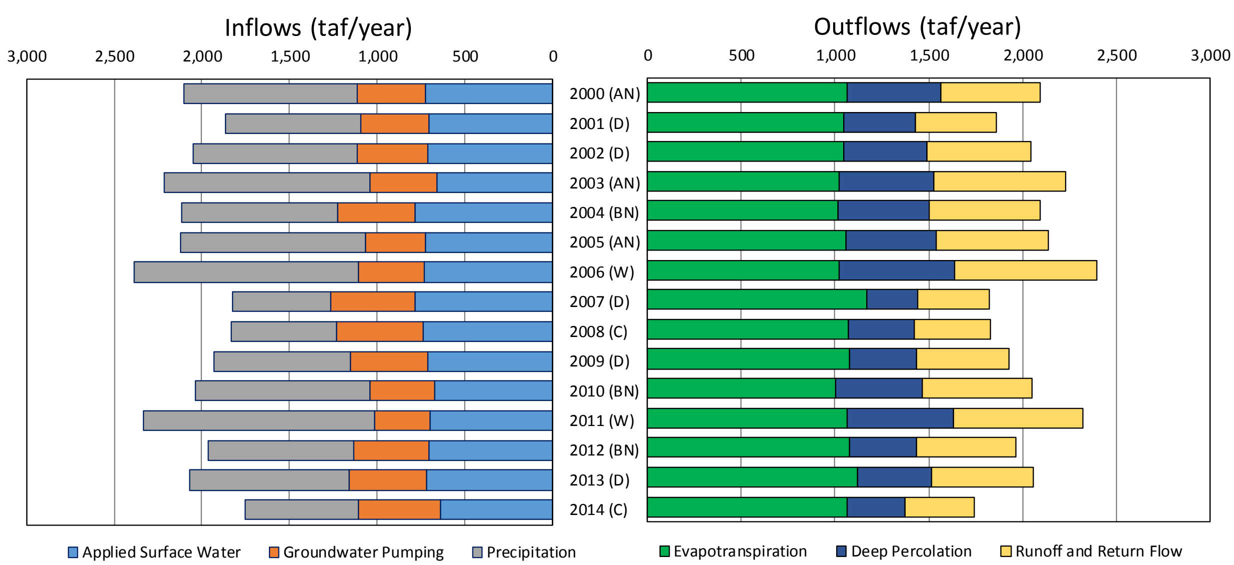

Figure ES.12. Butte County Valley Floor Overall Water Year Inflows and Outflows, 2000-2014.

Table ES.1. Butte County Valley Floor Overall Water Year Inflows, Outflows, and Change in Storage, 2000-2014.

Water Year	Inflows (taf)			Outflows (taf)			Change in Storage (taf)
	Precipi-tation	Surface Water	Ground-water	Evapotrans-piration	Deep Percolation	Runoff and Return Flow	
2000 (AN)	984	728	388	1,066	496	531	-5
2001 (D)	768	703	394	1,047	382	431	-3
2002 (D)	934	711	402	1,048	445	550	-8
2003 (AN)	1,172	662	382	1,022	504	707	23
2004 (BN)	891	782	443	1,015	486	596	-27
2005 (AN)	1,052	724	346	1,058	480	601	23
2006 (W)	1,275	732	376	1,023	613	760	6
2007 (D)	562	782	484	1,167	272	382	3
2008 (C)	605	740	489	1,073	348	407	-19
2009 (D)	775	713	440	1,074	363	492	7
2010 (BN)	998	672	368	1,005	458	591	17
2011 (W)	1,314	699	316	1,063	570	692	-1
2012 (BN)	835	709	423	1,080	356	530	-7
2013 (D)	908	722	436	1,118	398	545	21
2014 (C)	643	641	469	1,067	307	369	-24
Minimum	562	641	316	1,005	272	369	-27
Maximum	1,314	782	489	1,167	613	760	23
Average	914	715	411	1,062	432	546	0
Averages by Hydrologic Year Type							
Wet (W)	1,295	715	346	1,043	591	726	2
Above Normal (AN)	1,069	705	372	1,049	493	613	14
Below Normal (BN)	908	721	412	1,033	433	572	-6
Dry (D)	789	726	431	1,091	372	480	4
Critical (C)	624	691	479	1,070	328	388	-22

Future Demand and Climate Change Scenarios

As part of the WI&A, agricultural and urban demand scenarios and climate change scenarios have been developed to support analysis of potential future supplies and demands using the BBGM (Davids Engineering 2013, 2015). Demand and climate change scenarios have been developed to allow for evaluation of potential future conditions and to better understand the sensitivity of water supplies and demands in Butte County to changes in agricultural and urban water use and changes in underlying hydrology (precipitation and stream flows) that may result from climate change. The scenarios are not intended to be predictions of most likely future conditions, but rather to support sensitivity analysis and provide greater understanding of Butte County's water resources to support planning.

Demand Scenario

A scenario representing potential agricultural demands has been developed that considers changes in cropping and evapotranspiration, expansion of the irrigated area, changes in irrigation water source (conversion from surface water to groundwater in some areas), and changes in irrigation technology and management.

The demand scenario assumes the following changes:

- Field, truck, and pasture crops will continue to shift to higher value crops.
- Crop evapotranspiration rates for non-rice crops will increase by approximately 10 percent.
- Rice ground will convert to orchards where shallow groundwater levels suggest limited risk of "drowning" due to high water table and flood risk. The greatest potential for these changes is believed to be along the east side of Butte Creek in the Esquon and Western Canal SIUs.
- Irrigation will expand through new orchard plantings on class 3, 4, or 5 lands[11], primarily in the East Butte SIU between Thermalito Afterbay and the Feather River and in the North Yuba SIU south of Oroville and north of Honcut Creek.
- Orchards within the Butte SIU, rice ground converted to orchards, and areas of irrigation expansion within the East Butte and North Yuba IUs will rely on groundwater for irrigation.
- Irrigation efficiency for orchards will increase by approximately five percent.

In addition to these changes in irrigation demands, the demand scenario will update urban demand estimates based on updated urban water management plans that are expected to be available later in 2016.

Climate Change Scenario

To evaluate potential impacts of climate change, two climate change scenarios have been selected from the Governor's 2008 Climate Action Team (CAT) recommended scenarios for evaluating water management in California. The CAT identified 12 scenarios as part of its evaluation that can be used to project future temperature; precipitation timing and amounts; snowfall, snowmelt, and runoff, etc. By mid-century, the scenarios generally agree in an increase in average air temperature. Results are more mixed regarding changes in

[11] As defined by Agriculture Handbook No. 210, issued by the USDA Soil Conservation Service (SCS 1961). Also described in Davids Engineering technical memorandum on *Agricultural and Urban Demand Scenarios and Climate Change Scenarios for BBGM Update* (2015)

precipitation, but on average a slight reduction in precipitation is suggested. The two scenarios selected are as follows:

- Central tendency ("consensus" among scenarios)[12]
- Hotter-Drier (more extreme heating and drying)[13]

Based on the scenarios selected, magnitudes of historical precipitation, streamflows, and diversions are adjusted to develop BBGM inputs. One set of inputs will be developed for each scenario.

Conclusions

The *2016 Water Inventory and Analysis Report* not only updates the analysis of the County's water supply and demand, but it fundamentally changes the County's analytical approach to help sustain water resources for future generations. One of the important changes is the integration of the BBGM as a platform for developing and analyzing data for the *2016 Water Inventory and Analysis Report* and future analyses. The integration of the BBGM with the *2016 Water Inventory and Analysis Report* positions the Department with the long term ability to conduct water resource analyses as the need arises. An early benefit of this approach was realized through the *Assessment of Butte County Drought Impacts, 2012-2015* Technical Memorandum (Davids Engineering 2016). The obligation of the Sustainable Groundwater Management Act (SGMA) of 2014 to conduct water balance analyses necessitates having the capacity to perform novel analytical assessments. The completion of the *2016 Water Inventory and Analysis Report* and the updated BBGM prepares the County to meet these obligations.

Land use in the Butte County valley floor area has been relatively steady in recent years, with little change in irrigated agricultural lands and a modest decrease in non-irrigated lands. This decrease is offset by increases in developed lands and wetlands. Shifting of crops has occurred, including some increase in orchards (particularly walnuts) and a decrease in other, non-rice crops. There is the potential for marginal expansion of irrigation in some areas, particularly in the East Butte IU between Thermalito Afterbay and the Feather River and in the North Yuba IU between Oroville and Honcut Creek. Potential impacts of additional crop shifting and irrigation expansion will be evaluated using the BBGM and demand scenarios developed as part of the WI&A (as described in Section 6).

The primary climate variable affecting water conditions in the County is inter-annual differences in precipitation and snowfall. Variability from year to year impacts both the availability of surface water to meet demands and the amount of pumping required to meet crop irrigation requirements. In the future, temperatures are likely to increase as a result of climate change, resulting in less snowpack in the Feather River watershed and earlier runoff.

[12] NCAR CCSM3, b1 emission scenario (http://www-pcmdi.llnl.gov/ipcc/model_documentation/CCSM3.htm).
[13] MIROC3.2, a2 emission scenario (http://www-pcmdi.llnl.gov/ipcc/model_documentation/MIROC3.2_medres.htm).

These changes will make existing surface water supplies less reliable, increasing the need to rely on groundwater to meet demands. Climate change scenarios developed as part of the WI&A will allow for evaluation of the potential impacts of climate change using the BBGM.

Groundwater level declines have been observed in some areas of the County over recent years and are likely driven mainly by drought conditions leading to reduced deep percolation (potential recharge) and increased groundwater pumping. Pumping estimates developed as part of the WI&A suggest that these groundwater level declines may be related more to reduced recharge, rather than increased pumping, though the frequent occurrence of dry and critically dry years in the past decade have resulted in increased pumping. Pumping appears to be influenced more by inter-annual precipitation than to other factors such as increasing crop acreage or crop shifting over time.

Water budgets developed as part of the WI&A provide valuable information describing land surface processes to support evaluation of the sustainability of available water supplies. The scale at which supplies and demands are quantified is critical to supporting effective water management. Subinventory water budgets underlying the IU water budgets presented in the WI&A (Appendix C) allow for direct engagement with local stakeholders and closer examination of current and historical conditions and trends, while also helping to identify data gaps that need to be addressed to better manage for sustainability in the future.

Recommendations and Next Steps

Recommendations and suggested next steps have been identified as part of developing the *2016 Water Inventory and Analysis Report* (WI&A) and include the following:

- While many of the large diversions are continuously monitored and recorded, limited information is available for others. Work with local stakeholders to better document surface water diversions, including investigation of riparian diversions in some SIUs and additional information describing water supplies for managed wetlands. Diversion estimates developed as part of the WI&A provide a good basis to support discussion with diverters.
- Groundwater pumping for irrigation has generally been estimated based on estimates of crop irrigation requirements in areas known to rely on groundwater. Look for opportunities to verify and refine groundwater pumping estimates by obtaining pumping data from cooperative landowners.
- Deep percolation in some areas may return to the surface layer through accretion in drains and natural waterways or may be consumed by phreatophytic vegetation. Further investigate the ultimate fate of deep percolation from agricultural lands. Through modelling of specific waterways and shallow groundwater, the BBGM will support this investigation.
- The relative proportion of non-consumed water returning as deep percolation or surface runoff for the WI&A does not explicitly account for percolation from stormwater

retention ponds or releases from wastewater treatment plants to local waterways. Refine water budgets for developed lands to verify and refine estimates of non-consumed water.

- Further evaluate water budgets from the WI&A and developed for the groundwater system using the BBGM for historical and current drought periods to better understand factors contributing to recent historic low water levels in some areas.
- Identify and evaluate additional options to adapt to drought, future demands, and climate change.
- Continue public outreach regarding the WI&A and SIU water budgets to educate and inform the public regarding water resources in the County and to gather additional insights to support future water management efforts.
- Continue the process of updating and calibrating the BBGM through further refinement of input datasets and calibration of aquifer parameters to simulate historical water levels and streamflows.
- To retain local groundwater management authority, Butte County should continue to implement the Sustainable Groundwater Management Act (SGMA), including utilizing the WI&A and BBGM information to support development of Groundwater Sustainability Plans (GSPs). One of the key principles of SGMA is that groundwater is best managed at the local level. Developing a water budget and utilizing a groundwater model are requirements of groundwater sustainability plans. The WI&A provides a foundation for meeting these requirements.