



# **DRAFT GROUNDWATER SUSTAINABILITY PLAN SECTION**

April 2018

**CUYAMA VALLEY GROUNDWATER BASIN**

**GROUNDWATER SUSTAINABILITY PLAN**

**DESCRIPTION OF PLAN AREA - DRAFT**

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**COMMITMENT & INTEGRITY DRIVE RESULTS**



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## List of Acronyms

BLM	Bureau of Land Management
CASGEM	California Statewide Groundwater Elevation Monitoring
CBGSA	Cuyama Basin Groundwater Sustainability Agency
CBWD	Cuyama Basin Water District
CCSD	Cuyama Community Services District
CDEC	California Data Exchange Center
CDFW	California Department of Fish and Wildlife
DDW	Division of Drinking Water, State Water Resources Control Board
DWR	California Department of Water Resources



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GAMA	Groundwater Ambient Monitoring and Assessment
GICIMA	Groundwater Information Center Interactive Map
GSP	Groundwater Sustainability Plan
ILRP	Irrigated Lands Regulatory Program
IRWM	Integrated Regional Water Management
LID	Low Impact Development
NMFS	National Marine Fisheries Service
NWIS	National Water Information System
PBO	Plate Boundary Observatory
RCD	Resource Conservation District
RWQCB	Regional Water Quality Control Board
SBCFC&WCD	Santa Barbara County Flood Control and Water Conservation District
SBCWA	Santa Barbara County Water Agency
SGMA	Sustainable Groundwater Management Act
SLOCFC&WCD	San Luis Obispo County Flood Control & Water Conservation District
SR	State Route
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
UNAVCO	University NAVSTAR Consortium
USGS	United States Geological Survey
VCWPD	Ventura County Watershed Protection District
WDL	Water Data Library
WMP	Water Management Plan



# 1. PLAN AREA

## 1.1 Introduction

The Description of Plan Area document is a detailed description of the Cuyama Valley Groundwater Basin, including major streams and creeks, institutional entities, agricultural and urban land uses locations of groundwater production wells, locations of state lands and geographic boundaries of surface water runoff areas. The Plan Area document also describes existing surface water and groundwater monitoring programs, existing water management programs, and general plans in the Plan Area.

This document will be included as part of a report section in the Cuyama Basin Groundwater Sustainability Plan (GSP) that satisfies § 354.8 of the Sustainable Groundwater Management Act (SGMA) Regulations.

## 1.2 Plan Area Definition

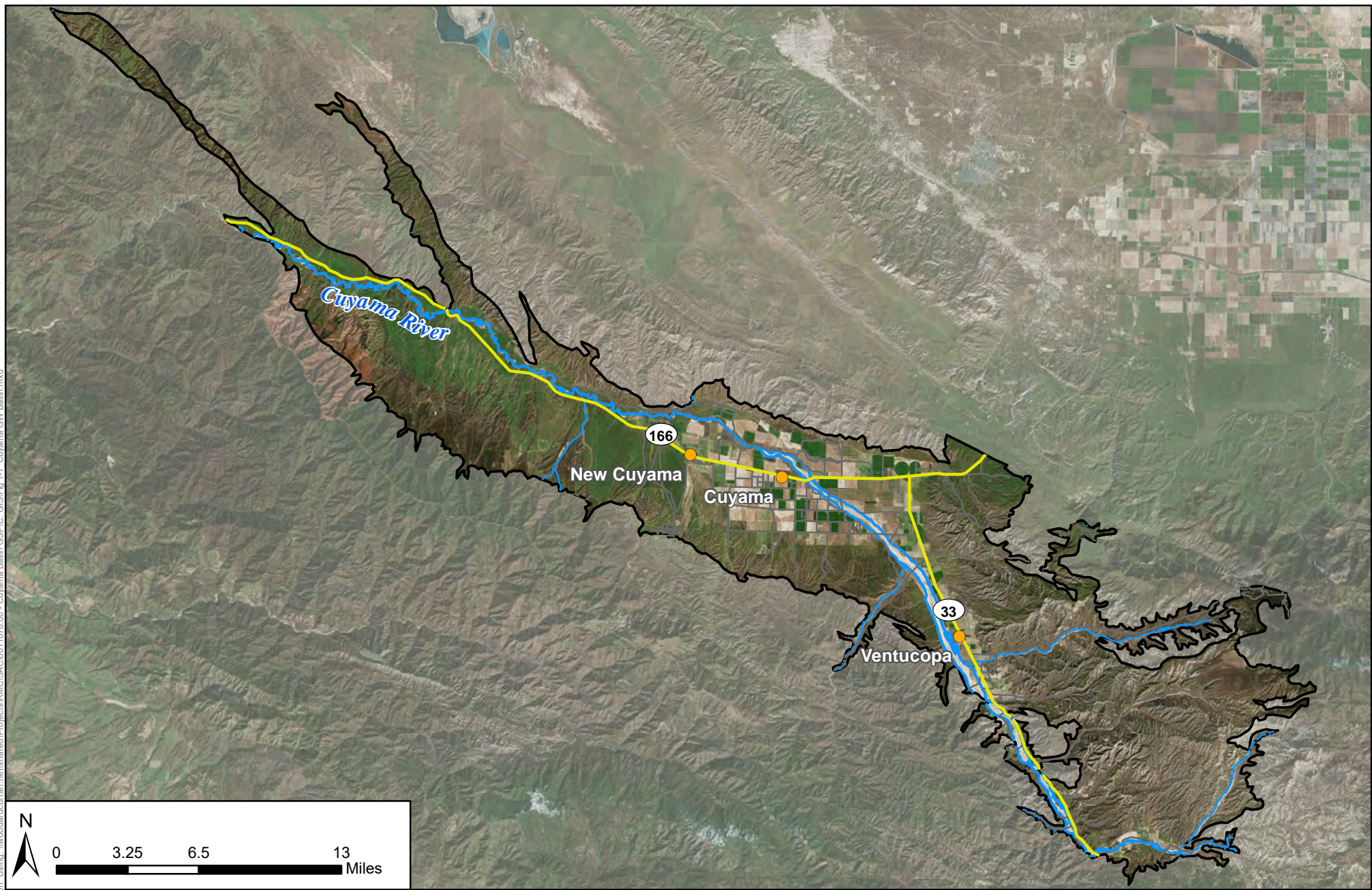
The Cuyama Valley Groundwater Basin (Cuyama Basin, or Basin) is located in California's Central Coast Hydrologic Region. It is beneath the Cuyama Valley, which is bounded by the Caliente Range to the northwest and the Sierra Madre Mountains to the southeast. The Basin was defined by the California Department of Water Resources (DWR) in its report titled "California's Groundwater Bulletin 118 - Update 2003." The boundaries of the Cuyama Basin were delineated by DWR because they were the boundary between permeable sedimentary materials and impermeable bedrock. DWR defines this boundary as "*Impermeable bedrock with lower water yielding capacity. These include consolidated rocks of continental and marine origin and crystalline/or metamorphic rock.*"

## 1.3 Plan Area Setting

**Figure 1-1** shows the Cuyama Basin and its key geographic features. The Basin encompasses an area of about 378 square miles and includes the communities of New Cuyama and Cuyama, which are located along State Route (SR) 166 and Ventucopa, which is located along SR 33. The Basin encompasses an approximately 55-mile stretch of the Cuyama River, which runs through the Basin for much of its extent before leaving the Basin to the northwest and flowing towards the Pacific Ocean. The Basin also encompasses stretches of Wells Creek in its north-central area, Santa Barbara Creek in the south-central area, the Quatal Canyon drainage and Cuyama Creek in the southern area of the Basin. Most of the agriculture in the Basin occurs in the central portion east of New Cuyama, and along the Cuyama River near SR 33 through Ventucopa.

**Figure 1-2** shows the boundary of the Cuyama Basin Groundwater Sustainability Agency (CBGSA). The CBGSA boundary covers the entire Cuyama Basin. The CBGSA was created by a Joint Exercise of Powers Agreement (JEPA) among the following agencies: Counties of Kern, San Luis Obispo, and Ventura; Santa Barbara County Water Agency (SBCWA) representing the County of Santa Barbara; Cuyama Basin Water District (CBWD); and, Cuyama Community Services District (CCSD).

Figure Exported: 2/15/2018 8:00 AM By: cecigle@woodardcurran.net \\\woodardcurran.net\shared\Projects\RM\CA\00011078.00 - Cuyama Basin\_GSP\C\_GIS\Fig\_1-1\_Cuyama\_GW\_Basin.mxd



**Figure 1-1 - Cuyama Valley Groundwater Basin**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

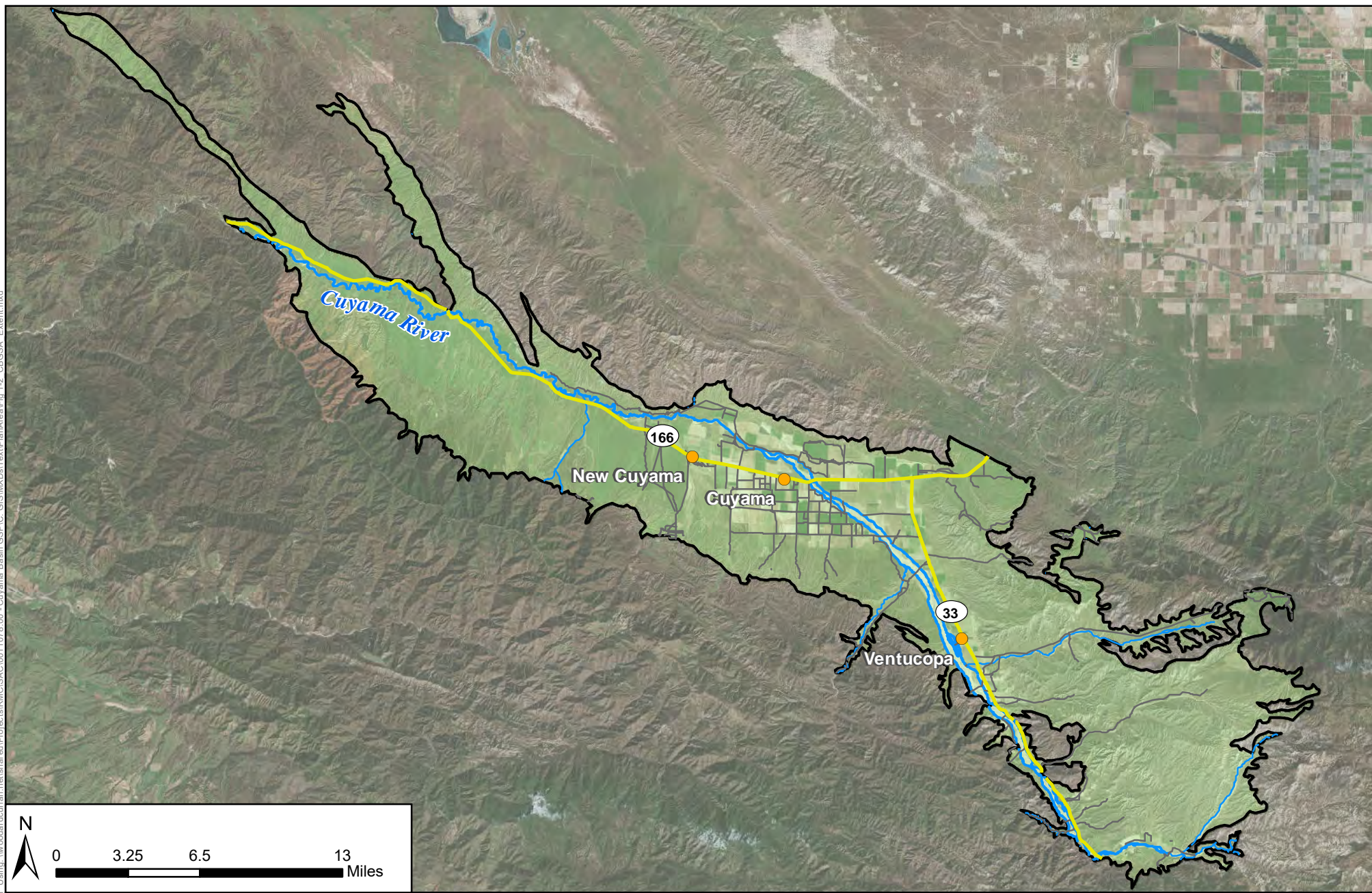
February 2018



Legend

- Towns
- Local Roads
- Cuyama Basin
- Cuyama River
- Highways
- Streams

Figure Exported: 4/6/2018 8:46:50 AM By: ceglejcton Using: \\woodardcurran.net\aharad\Projects\RM\CSA\0011078\_00 - Cuyama Basin.GSP\C:GIS\MXDs\Text\PlanArea\Fig\_1-2\_CBGSA\_Extent.mxd



**Figure 1-2 - Cuyama Valley Groundwater Sustainability Agency Boundary**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

February 2018



Legend

- Towns
- Local Roads
- Cuyama Basin
- Cuyama River
- Highways
- Streams



**Figure 1-3** shows the Cuyama Basin and neighboring groundwater basins. The Carrizo Plain Basin is located immediately northeast of the Cuyama Basin and they share a boundary at a location about five miles east of the intersection of SR 166 and SR 133. The San Joaquin Valley Basin is located just east of the Carrizo Plain Basin. The Cuyama Basin also shares a boundary with the Mil Potrero Area Basin, which is located just east of one of the Cuyama Basin's southeastern tips, and the Lockwood Valley Basin is located close to the Cuyama Basin's southern area but does not share a boundary with it. To the southwest, and more distant from the Cuyama Basin, are the Santa Maria, San Antonio Creek Valley and Santa Ynez River Valley Basins, which are located about 10 to 15 miles southwest of the Cuyama Basin.

**Figure 1-4** depicts the Cuyama Basin's extent relative to the boundaries of the various counties which overlie the Basin. Santa Barbara County encompasses the largest portion of the Basin (168 square miles), covering most of the area south of the Cuyama River, as well as Ventucopa and a small area to the north of that community. San Luis Obispo County has jurisdiction over areas north of the Cuyama River (covering 77 square miles). The Cuyama River marks the boundary between San Luis Obispo County and Santa Barbara County. Kern County covers the smallest extent of Cuyama Basin area compared to the other counties (13 square miles). Its jurisdictional coverage is located just east of the SR 166 and SR 33 intersection, as well as tips of the Basin in the Quatal Canyon area. Ventura County encompasses the southeastern area of the Basin (covering 120 square miles), including the area east of Ventucopa.

**Figure 1-5** shows the non-County jurisdictional boundaries in the Basin. The CBWD covers a large area of the Basin (about 130 square miles), from a location about five miles west of Wells Creek to the intersection of SR 166 and SR 33, and south of Ventucopa along SR 33. The CCSD covers a small area of the Basin (about 0.5 square miles) located along SR 166 in the community of New Cuyama.

**Figures 1-6 and 1-7** show the agricultural and urban land uses in the Cuyama Basin from 1996-2000 and 2014, respectively. Agricultural land is located primarily in the New Cuyama and Ventucopa areas, and along the SR 166 and SR 33 corridors between those communities. Crops are generally rotated regularly, and some agricultural area is idle, but areas that are in active agricultural use produce primarily miscellaneous truck crops, carrots, potatoes and sweet potatoes, miscellaneous grains and hay, and grapes. Various other crop types are produced in the Basin as well, though at smaller production scales.

**Figure 1-8** shows the land use by water source in the Cuyama Basin. Almost all of the water use in the Basin is served by groundwater. There are 37 surface water rights permits in the Basin that allow up to 116 acre-feet per year. Much of the surface water use is for stockwatering of pasture land, which may not be included in the land use dataset shown in the figure.

**Figure 1-9** shows the number of domestic wells per square mile and the average depth of domestic wells in each square mile in the Cuyama Basin. Figure 1-9 shows a grid pattern where each block on the grid is a section that covers one square mile of land. The number in each square represents the average depth of the well(s) in the section. Most of the sections in the Cuyama Basin that have domestic wells contain only one well, while twelve sections contain two wells each, three sections contain three wells each, four sections contain four wells each, and one section contains six wells. Wells range in depth broadly across the Basin, from as shallow as 120 feet below ground surface in the southeast portion of the Basin to 1,000 feet below ground surface in the central portion of the Basin.

**Figure 1-10** shows the density and average depth of production wells in the Cuyama Basin per square mile. There is a wide distribution of production well density in the Basin; between 1 and 11 wells per



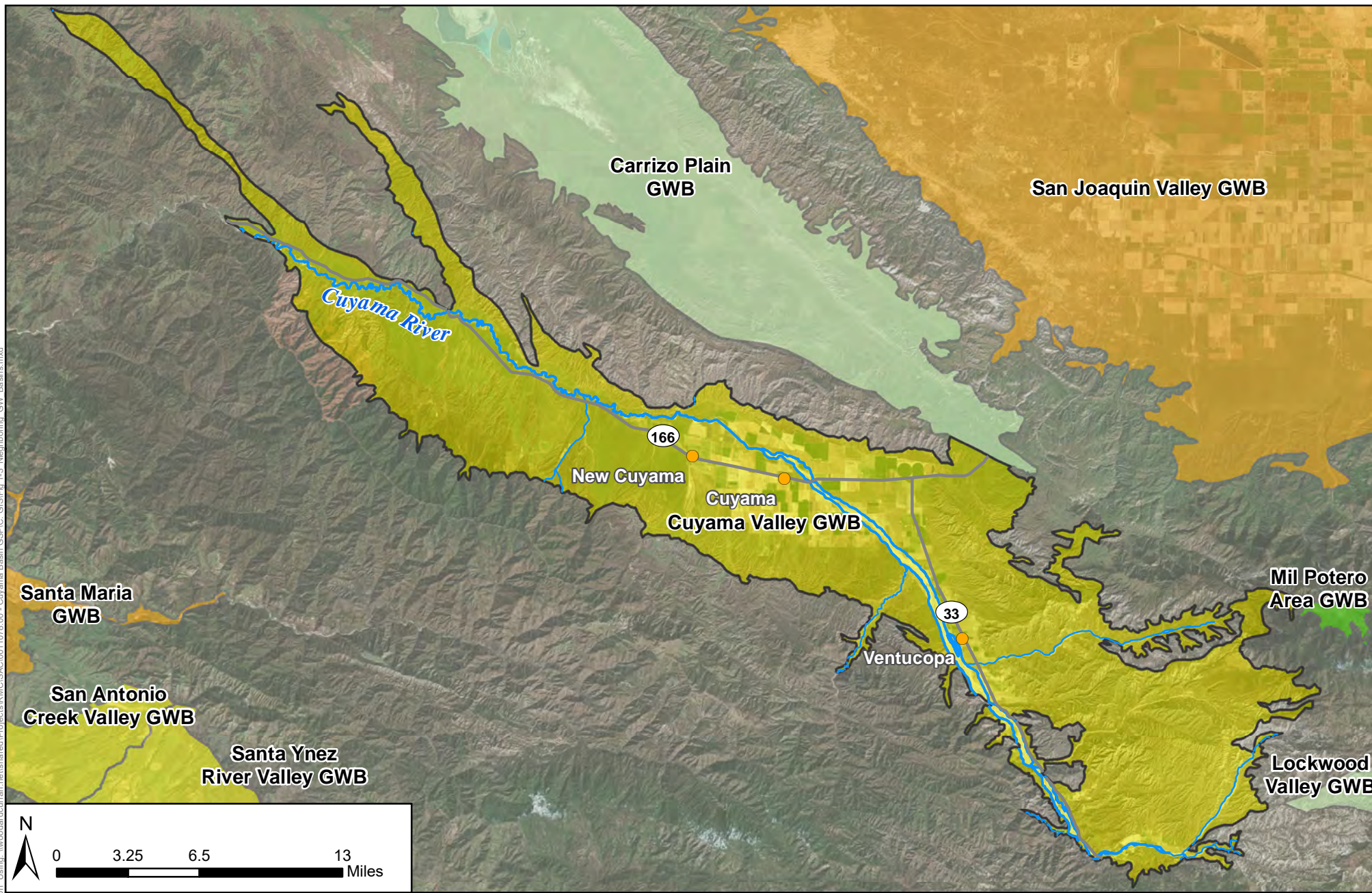
square mile. Depths of production wells range from 50 feet below ground surface on the outer edges of the Basin, to over 1,200 feet in the central portion of the Basin.

**Figure 1-11** shows the density and average depth of public wells in the Cuyama Basin. The Basin contains three public wells, one just south of New Cuyama, one east of Ventucopa and one at the southern tip of the Basin. These wells have depths of 855, 280 and 800 feet, respectively.

**Figure 1-12** shows the public lands in and around the Basin. Some portions of the land that overlies the Cuyama Basin, and most of the areas immediately surrounding the Basin, have a federal or State jurisdictional designation. The Los Padres National Forest covers most of the Basin's northwestern arm, then runs outside the Basin's western boundary, where it enters the Basin again and covers most of the Basin east of Ventucopa. A portion of the Basin north of Ventucopa, as well as an area nearby that is immediately outside the Basin, is designated as the Bitter Creek National Wildlife Refuge. The Bureau of Land Management (BLM) has jurisdiction over a large area that runs outside the Basin, along the Basin's northern boundary, and covers small parts of the Basin north of the Cuyama River. Most of the northeastern arm of the Basin is designated as State Lands.

**Figure 1-13** shows that the Cuyama Basin is located within the Cuyama Watershed, which lies within the larger Santa Maria watershed, with the Cuyama Basin occupying roughly the entirety of the Santa Maria Basin's eastern contributing watershed, and a small part of the Cuyama Basin's northeastern arm located in the Estrella River Basin. Figure 1-13 illustrates the Cuyama Watershed's location in the Santa Maria Basin, as well as the larger Basin's major receiving water bodies, which include the Santa Maria River, the Cuyama River, Wells Creek, Santa Barbara Creek, the Quatal Canyon drainage, and Cuyama Creek. The figure also identifies the various other groundwater basins in the general geographical vicinity of the Santa Maria Basin, including the San Antonio, Santa Ynez and Santa Clara-Calleguas Basins to the south. Basins to the north of the Santa Maria Basin include Estero Bay, Salinas, Estrella River, Carrizo Plain, Temblor, Fellows, South Valley Floor and Grapevine.





**Figure 1-3 - Neighboring Groundwater Basins**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

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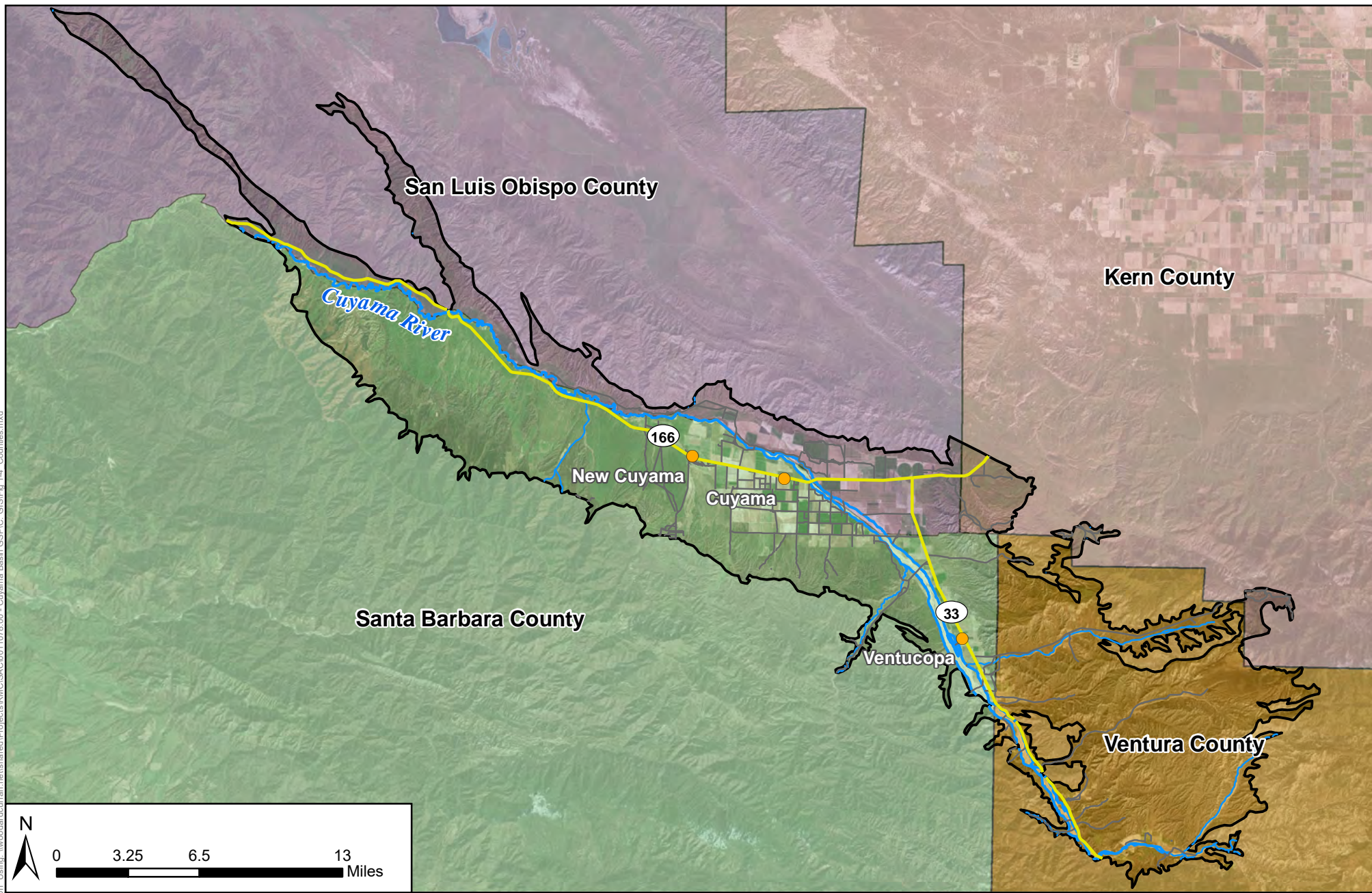


Legend

- Towns
- Cuyama Basin
- Highways
- Cuyama River
- Streams
- Basin Priority
  - High Priority
  - Medium Priority
  - Low Priority
  - Very Low Priority

Figure Exported: 2/15/2018 8:00 AM By: cecile@woodardcurran.net Using: \\woodardcurran.net\shared\Projects\RMC\GIS\AC0011078\_00 - Cuyama Basin\_GSP\Fig\_1-3\_Neighboring\_GW\_Basins.mxd

Figure Exported: 2/15/2018 8:00 AM By: ceegle@woodardcurran.com Using: \\woodardcurran.net\shared\Projects\RWC\GIS\C00011078\_00 - Cuyama Basin.GSPC - GIS\Fig\_1\_4 - Counties.mxd



**Figure 1-4 - Counties Overlying Cuyama Basin**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

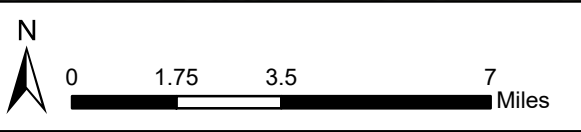
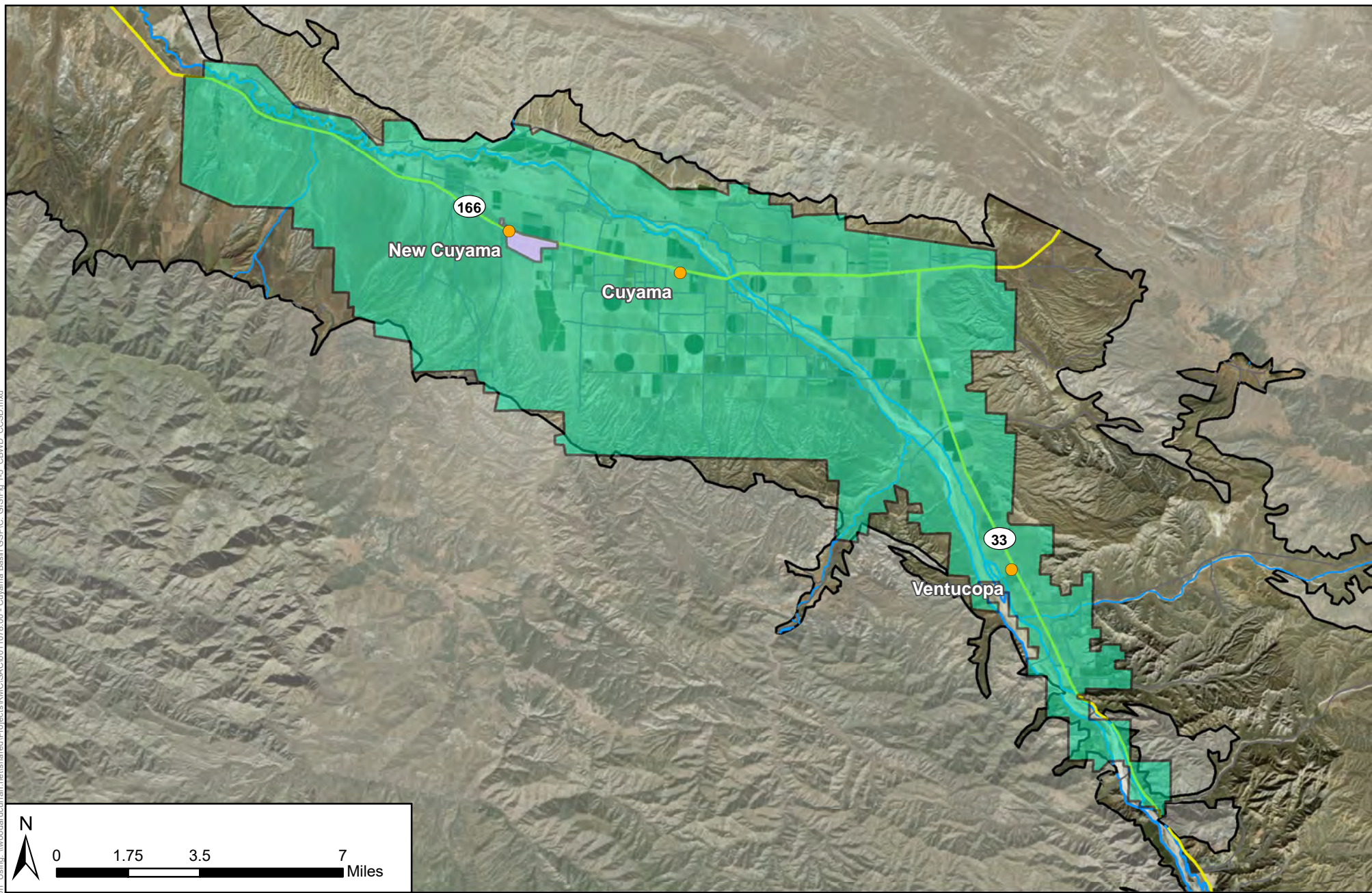
February 2018



**Legend**

- Towns
- Cuyama Basin
- Highways
- Local Roads
- Cuyama River
- Streams
- County**
- Kern County
- San Luis Obispo County
- Santa Barbara County
- Ventura County

Figure Exported: 2/15/2018 8: By: csegelstein Using: \\woodardcurran.net\shared\Projects\RM\GIS\A\00011078.00 - Cuyama Basin\_GSP\C\_GIS\Fig\_1-5\_CBWD\_CCSD.mxd



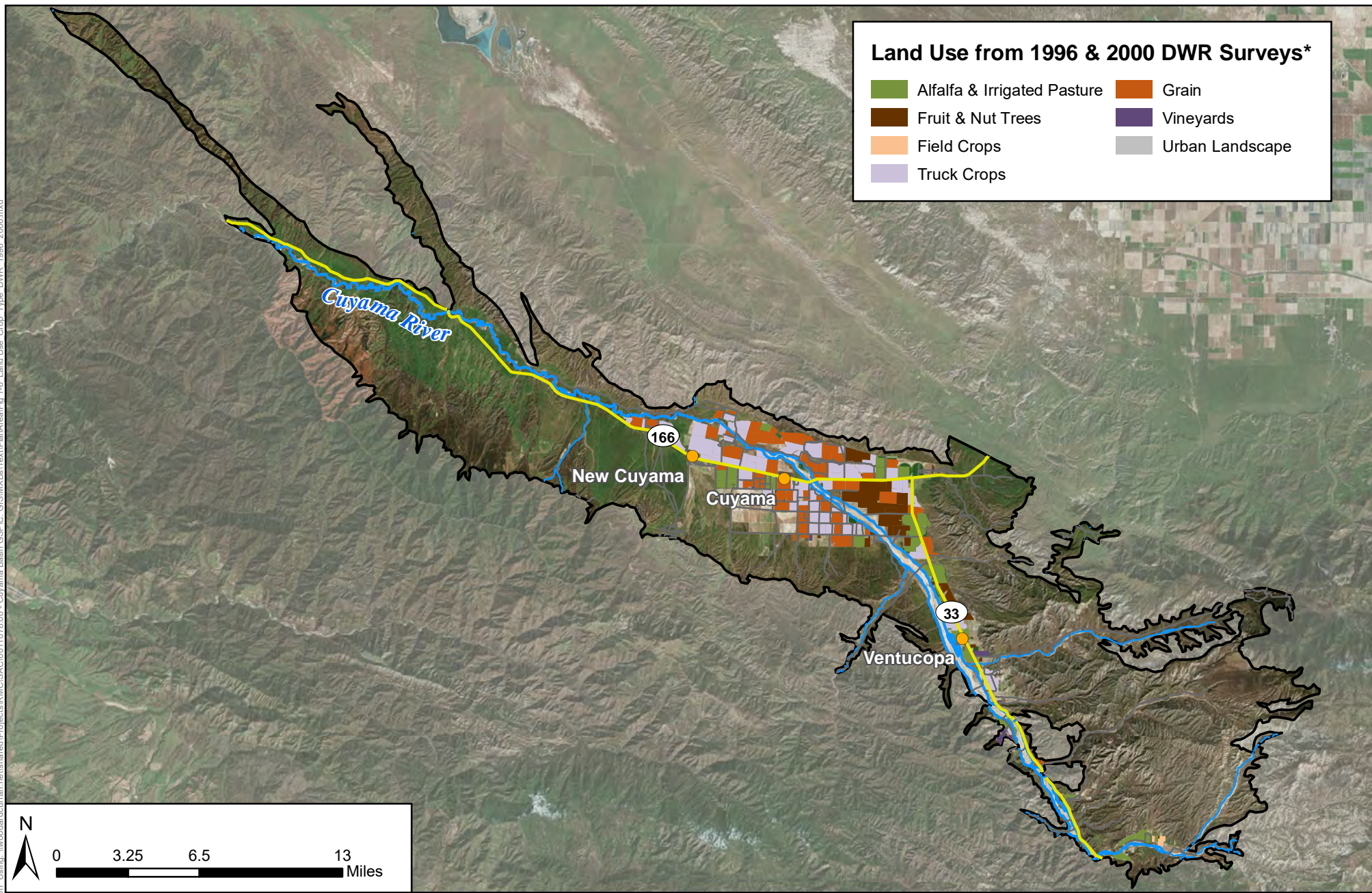
**Figure 1-5 - Non-County Jurisdictional Boundaries**  
Cuyama Basin Groundwater Sustainability Agency  
Cuyama Valley Groundwater Basin Groundwater Sustainability Plan  
February 2018



Legend

- Cuyama Basin
- Towns
- Cuyama Community Service District
- Cuyama Basin Water District
- Highways
- Local Roads
- Cuyama River
- Streams

Figure Exported: 3/22/2018 8:00 AM By: cseggleton Using: \\woodardcurran.net\shared\Projects\RWC\SAC\011078\00 - Cuyama Basin GSP\C. GIS\MXD\Text\PlanArea\Fig 1-6 Land Use Crop Type DWR - 1996, 2000.mxd



**Land Use from 1996 & 2000 DWR Surveys\***

<span style="display:inline-block; width:15px; height:15px; background-color: #6aa84f; border:1px solid black;"></span> Alfalfa & Irrigated Pasture	<span style="display:inline-block; width:15px; height:15px; background-color: #e67e22; border:1px solid black;"></span> Grain
<span style="display:inline-block; width:15px; height:15px; background-color: #8e44ad; border:1px solid black;"></span> Fruit & Nut Trees	<span style="display:inline-block; width:15px; height:15px; background-color: #9b59b6; border:1px solid black;"></span> Vineyards
<span style="display:inline-block; width:15px; height:15px; background-color: #f1c40f; border:1px solid black;"></span> Field Crops	<span style="display:inline-block; width:15px; height:15px; background-color: #a6a6a6; border:1px solid black;"></span> Urban Landscape
<span style="display:inline-block; width:15px; height:15px; background-color: #9b59b6; border:1px solid black;"></span> Truck Crops	

N

0 3.25 6.5 13 Miles

**Figure 1-6 - 1996 & 2000 Land Use**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2018



Legend

<span style="display:inline-block; width:10px; height:10px; background-color: #f1c40f; border:1px solid black;"></span> Towns	<span style="display:inline-block; width:15px; border-bottom:2px solid #3498db;"></span> Cuyama River
<span style="display:inline-block; width:15px; border-bottom:2px solid #f1c40f;"></span> Highways	<span style="display:inline-block; width:15px; border-bottom:2px solid #3498db;"></span> Streams
<span style="display:inline-block; width:15px; border-bottom:2px solid #95a5a6;"></span> Local Roads	<span style="display:inline-block; width:15px; border:1px solid black;"></span> Cuyama Basin

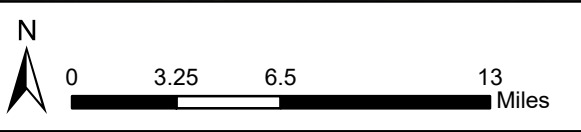
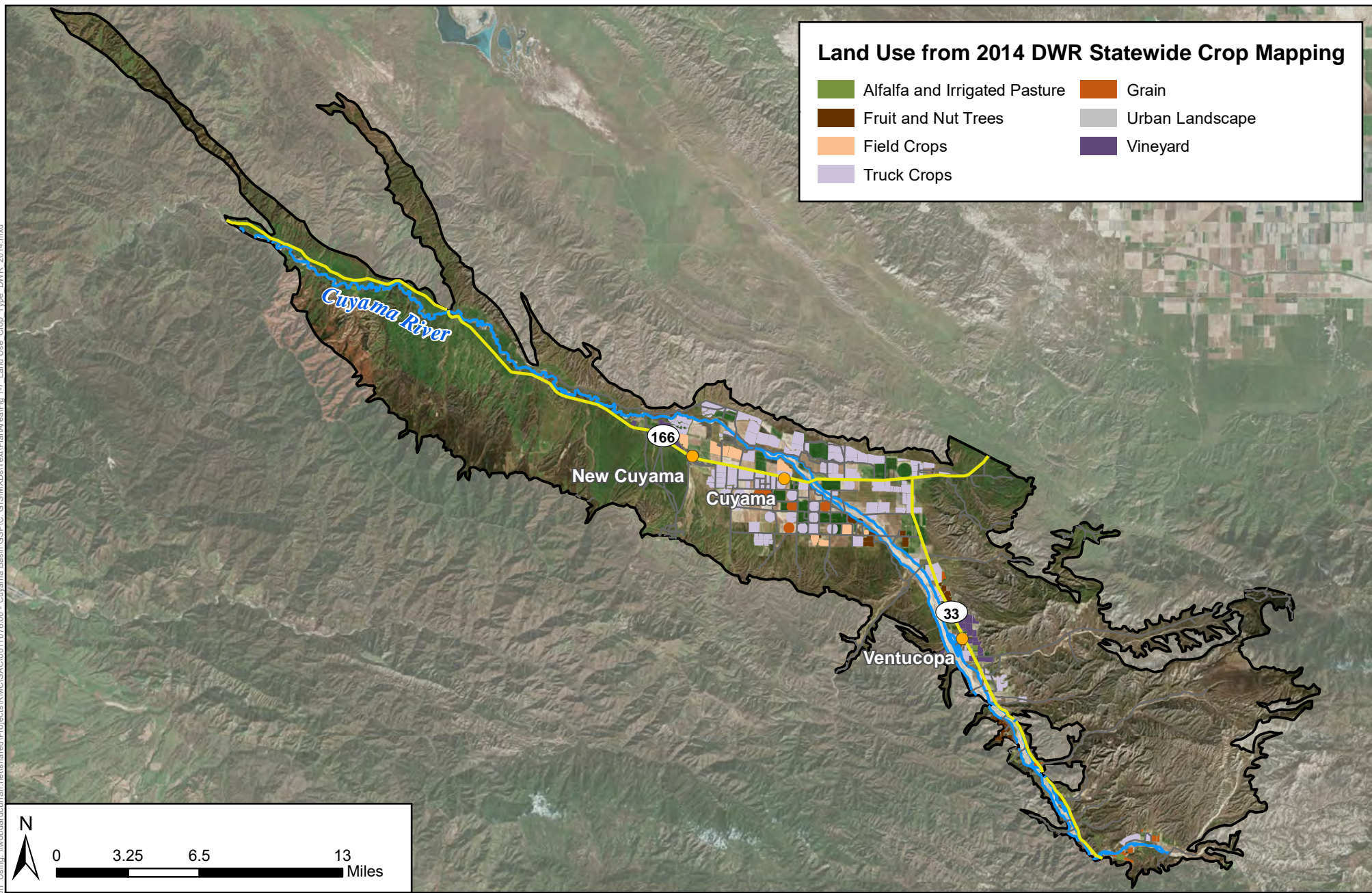
\*Land use data is provided by county. The data in this map includes data from 2000 for Ventura County, and 1996 data for San Luis Obispo and Santa Barbara Counties. Kern County data does not extend into the Cuyama Basin, and is not included.

Source: California Department of Water Resources County Land Use Surveys, 1996 and 2000 datasets.  
<https://www.water.ca.gov/Programs/Water-Use-And-Efficiency/Land-And-Water-Use/Land-Use-Surveys>

Figure Exported: 3/22/2018 8:00 AM By: cecile.woodard@curran.net Using: \\woodardcurran.net\shared\Projects\RM\GIS\CA\0101078\00 - Cuyama Basin\_GSP\C. GIS\MXD\Bas\Text\Plan\Area\Fig\_17\_Land Use\_Crop\_Type\_DWR\_2014.mxd

### Land Use from 2014 DWR Statewide Crop Mapping

<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #6aa84f; border: 1px solid black; margin-right: 5px;"></span> Alfalfa and Irrigated Pasture</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #8e44ad; border: 1px solid black; margin-right: 5px;"></span> Fruit and Nut Trees</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f1c40f; border: 1px solid black; margin-right: 5px;"></span> Field Crops</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #9b59b6; border: 1px solid black; margin-right: 5px;"></span> Truck Crops</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #e67e22; border: 1px solid black; margin-right: 5px;"></span> Grain</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #a6a6a6; border: 1px solid black; margin-right: 5px;"></span> Urban Landscape</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #34495e; border: 1px solid black; margin-right: 5px;"></span> Vineyard</li> </ul>
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**Figure 1-7 - 2014 Land Use**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2018

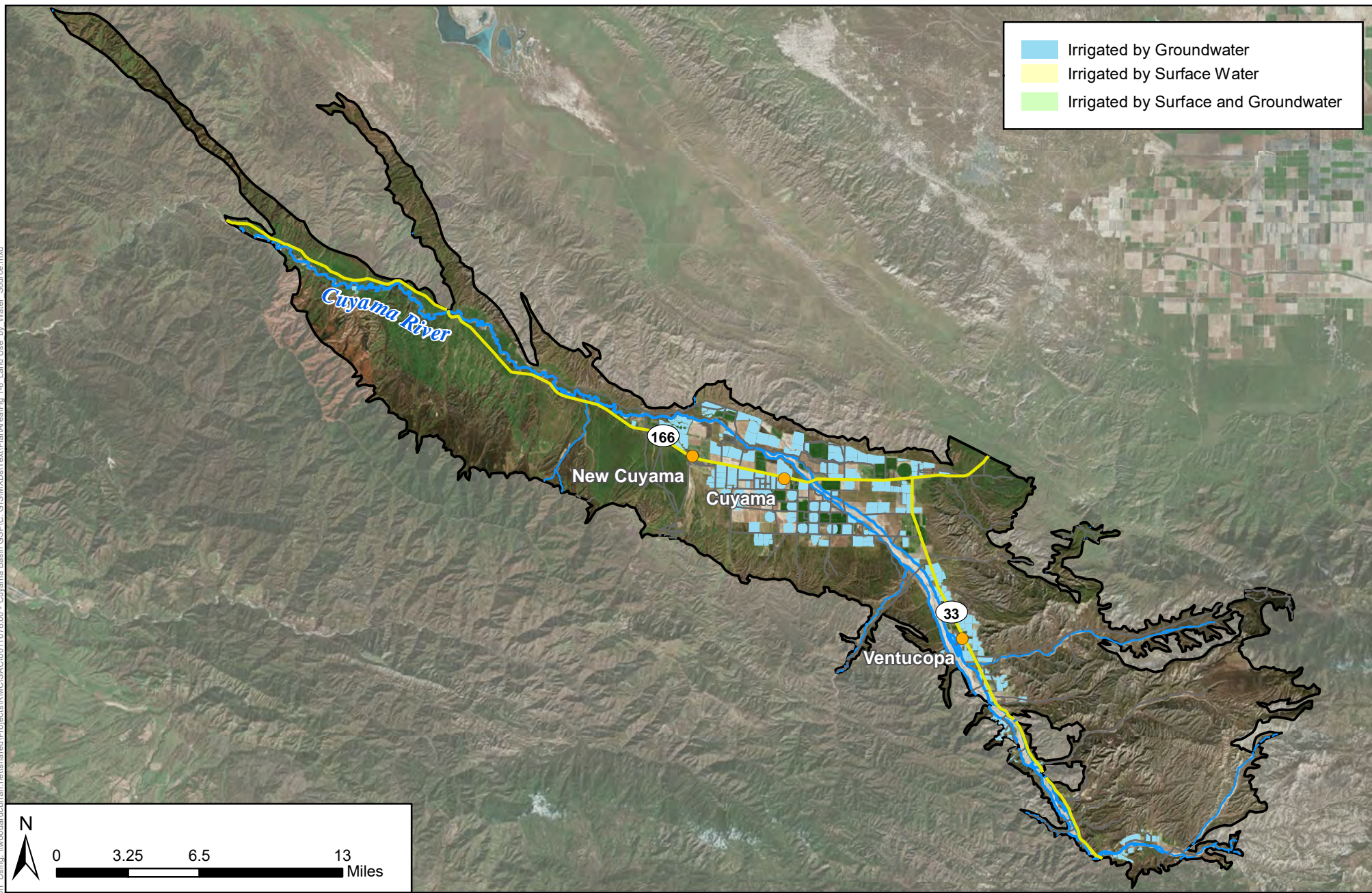





**Legend**

<span style="display: inline-block; width: 10px; height: 10px; background-color: #f1c40f; border: 1px solid black; margin-right: 5px;"></span> Towns	<span style="display: inline-block; width: 20px; border-bottom: 2px solid #3498db; margin-right: 5px;"></span> Cuyama River
<span style="display: inline-block; width: 20px; border-bottom: 2px solid #f1c40f; margin-right: 5px;"></span> Highways	<span style="display: inline-block; width: 20px; border-bottom: 2px solid #3498db; margin-right: 5px;"></span> Streams
<span style="display: inline-block; width: 20px; border-bottom: 1px solid #95a5a6; margin-right: 5px;"></span> Local Roads	<span style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Cuyama Basin

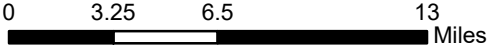
Source: California Department of Water Resources Statewide Crop Mapping, 2014 dataset.  
<https://www.water.ca.gov/Programs/Water-Use-And-Efficiency/Land-And-Water-Use/Land-Use-Surveys>

Figure\_Exported\_3/23/2018\_8\_By\_cesigleatlon Using: \\woodardcurran.net\shared\Projects\RMCS\CA0010178.00 - Cuyama Basin GSP\C. GIS\MXD\Bas\Text\PlanArea\Fig\_1-8\_Land Use by Water\_Sources.mxd



	Irrigated by Groundwater
	Irrigated by Surface Water
	Irrigated by Surface and Groundwater

N



0 3.25 6.5 13 Miles

**Figure 1-8 - Land Use by Water Source**







Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

March 2018

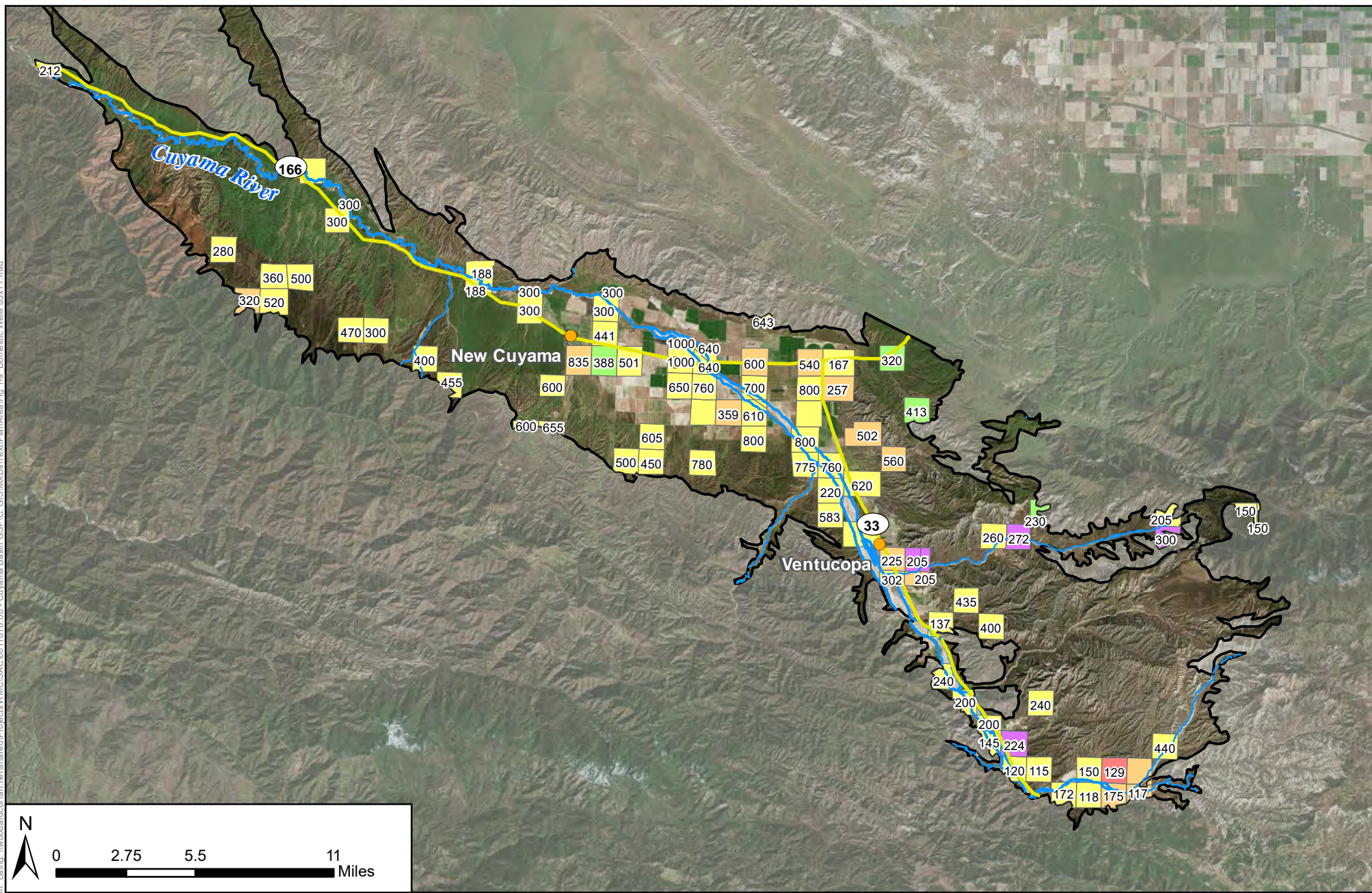


**Legend**

	Cuyama Basin		Cuyama River
	Towns		Streams
	Highways		
	Local Roads		

Source: California Department of Water Resources Statewide Crop Mapping, 2014 dataset.  
<https://www.water.ca.gov/Programs/Water-Use-And-Efficiency/Land-And-Water-Use/Land-Use-Surveys>

Figure Exported: 4/12/2018 8:00 AM By: ceegle@dnr Using: \\woodardcurran.net\shared\Projects\R\M\C\SAC\0011078\_00 - Cuyama Basin GIS\PC GIS\WXDs\Text\Plan\Area\Fig 1-9 - Domestic Wells\_85x11.mxd



**Figure 1-9 - Domestic Well Density and Average Depths**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

April 2018



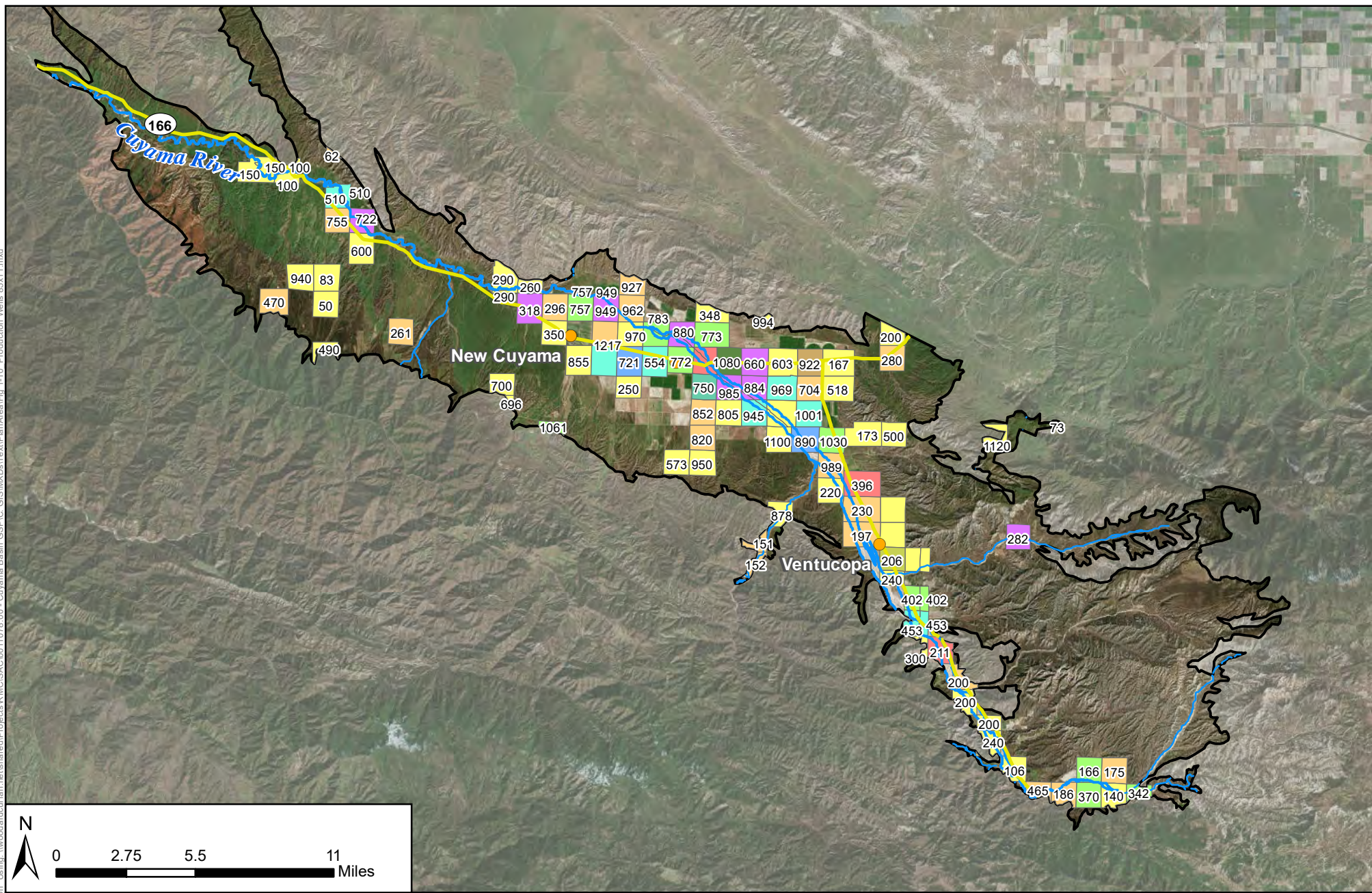
**Legend**

- Cuyama Basin
- Towns
- Highways
- Cuyama River
- Streams

- Township & Range with Domestic Wells**
- |  |  |
|--|--|
| <span style="background-color: yellow; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 1 Well  | <span style="background-color: purple; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 4 Wells |
| <span style="background-color: orange; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 2 Wells | <span style="background-color: red; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 6 Wells    |
| <span style="background-color: green; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 3 Wells  |  |

Numbers in the township and range grid correspond to the average depth of the wells within that grid. Grids with no number have no associated well depth data. Average well depth is given in feet below the ground surface.

Figure Exported: 4/12/2018 By: ceegjebn Using: \\woodardcurran.net\shared\Projects\R\M\C\SAC\0011078\_00 - Cuyama Basin GSP\PC GIS\WXDs\Text\Plan\Area\Fig 1-10 - Production Wells 85x11.mxd



**Figure 1-10 - Production Well Density and Average Depths**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

April 2018



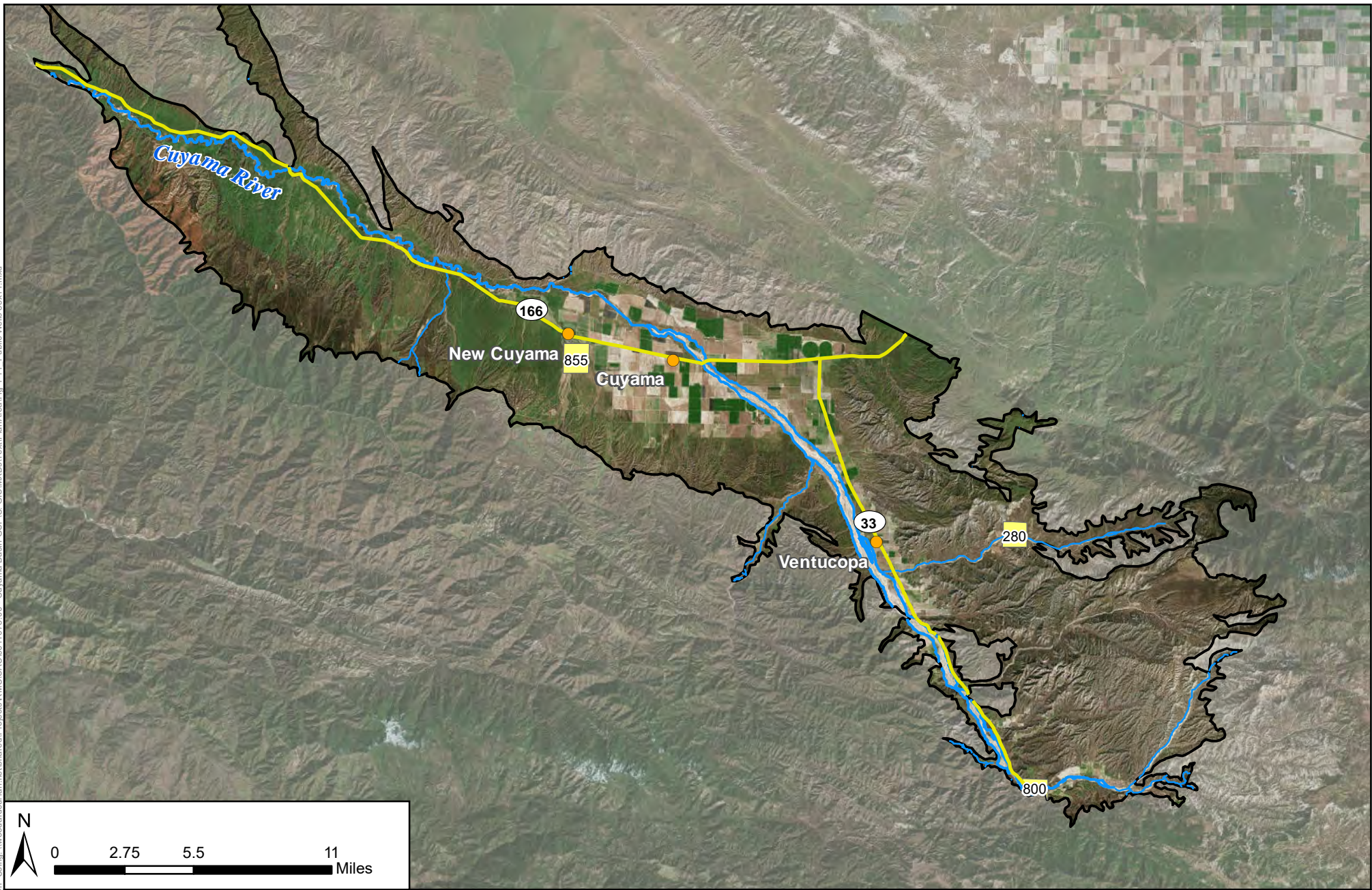
**Legend**

- Cuyama Basin
  - Towns
  - Highways
  - Cuyama River
  - Streams
- Township & Range with Domestic Wells**
- |  |   |  |
|--|---|--|
| <span style="background-color: yellow; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 1 Well      | <span style="background-color: cyan; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 5 Wells  | <span style="background-color: olive; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 9 Wells      |
| <span style="background-color: orange; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 2 Wells     | <span style="background-color: red; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 6 Wells   | <span style="background-color: teal; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 10 Wells      |
| <span style="background-color: lightgreen; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 3 Wells | <span style="background-color: blue; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 7 Wells  | <span style="background-color: darkgreen; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 11 Wells |
| <span style="background-color: purple; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 4 Wells     | <span style="background-color: brown; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></span> 8 Wells |  |

Numbers in the township and range grid correspond to the average depth of the wells within that grid. Grids with no number have no associated well depth data. Average well depth is given in feet below the ground surface.



Figure Exported: 4/12/2018 8:18 By: ceegle@dnr Using: \\woodardcurran.net\shared\Projects\R\M\C\SAC\0011078\_00 - Cuyama Basin GSP\FC\_GIS\WXDs\Text\PlanArea\Fig 1-11 - Public Wells 85x11.mxd



**Figure 1-11 - Public Well Density and Average Depths**

Cuyama Basin Groundwater Sustainability Agency  
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan  
 April 2018



**Legend**

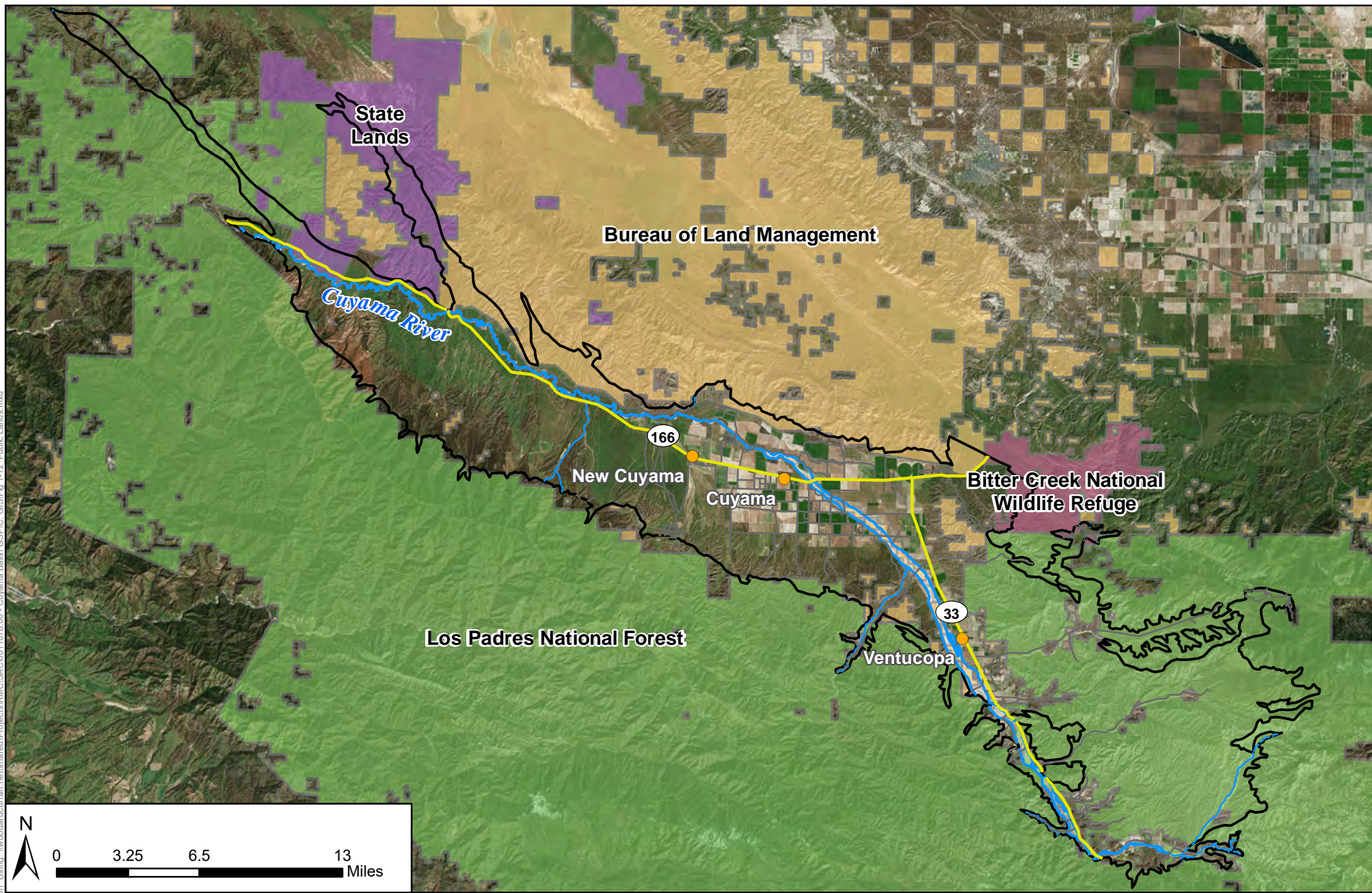
- Cuyama Basin
- Towns
- Highways
- Cuyama River
- Streams

**Township & Range with Domestic Wells**

1 Well

Numbers in the township and range grid correspond to the average depth of the wells within that grid. Grids with no number have no associated well depth data. Average well depth is given in feet below the ground surface.

Figure Exported: 2/15/2018 8:00 AM By: cecile@woodardcurran.net Using: \\woodardcurran.net\shared\Projects\RM\CA\00011078.00 - Cuyama Basin\_GSP\C\_GIS\Fig\_1-12\_Public\_Lands.mxd



**Figure 1-12 - Federal and State Lands**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

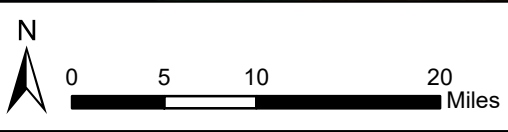
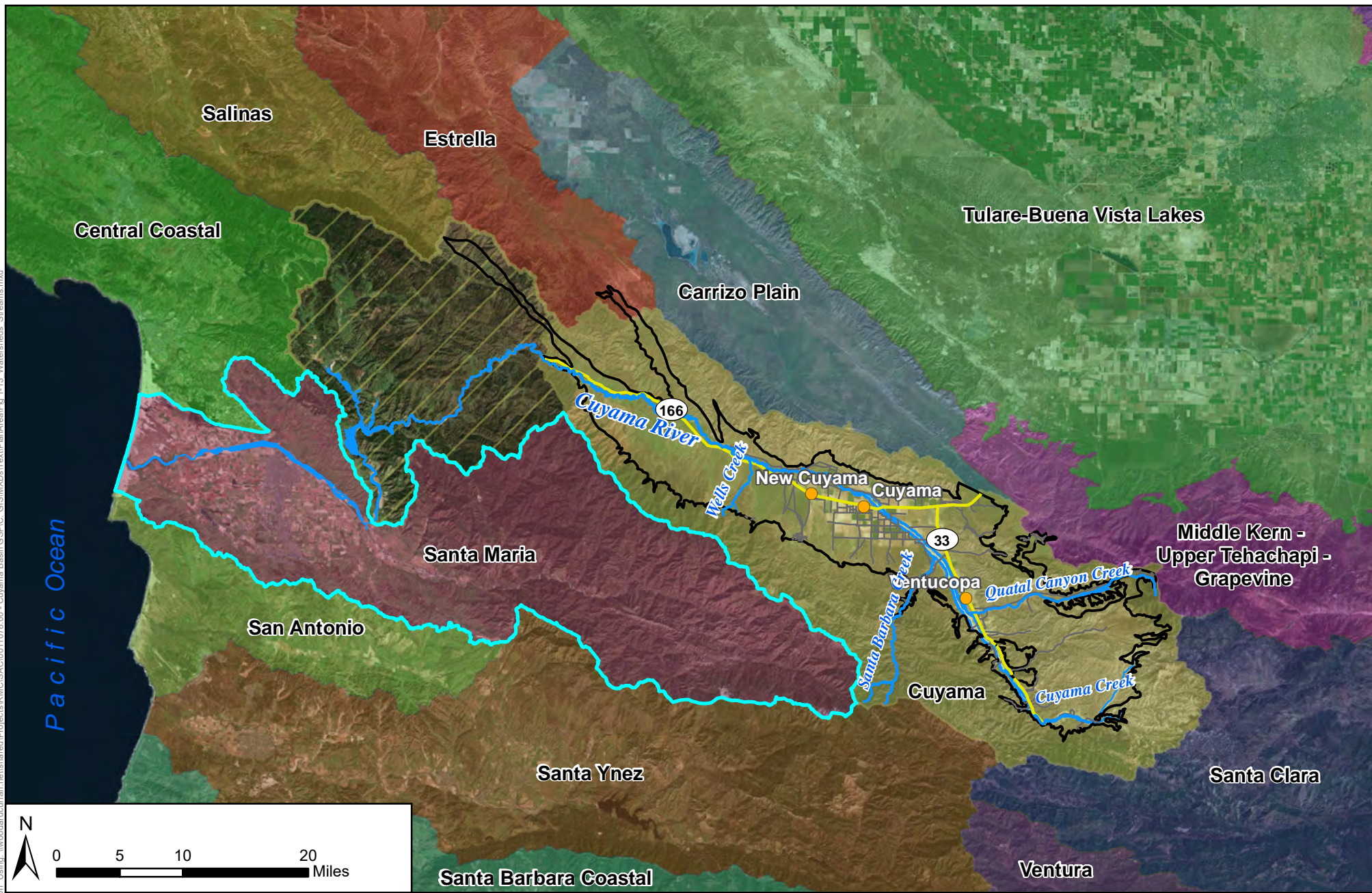
February 2018



Legend

- Cuyama Basin
- Towns
- Highways
- Local Roads
- Cuyama River
- Streams
- Bureau of Land Management
- US Forest Service
- US Fish and Wildlife
- State Lands

Figure Exported: 3/22/2018 8:00:00 AM By: cecile@woodardcurran.com Using: \\woodardcurran.net\shared\Projects\RM\GIS\AC\011078\_00 - Cuyama Basin GSP\C. GIS\MXD\ast\text\PlanArea\Fig\_1-13 - Watersheds - Streams.mxd



**Figure 1-13 - Regional Watersheds**

Cuyama Basin Groundwater Sustainability Agency  
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan  
 February 2018



Legend

Cuyama Basin	Local Roads	<b>Cuyama Watershed</b>
Towns	Cuyama River	Contributes to Cuyama GW Basin
Highways	Streams	Does Not Contribute to Cuyama GW Basin

Watershed Data Source: USGS TNM Hydrography (WBD),  
 U.S. Geological Survey - National Geospatial Program  
 Watersheds are 8-digit Hydrologic Units



## 1.4 Existing Surface Water Monitoring Programs

Existing surface water monitoring in the Cuyama Basin is extremely limited. Existing surface water monitoring in the basin is limited to DWR's California Data Exchange Center (CDEC) program, and monitoring performed by the United States Geological Survey (USGS). The only CDEC gages in the Cuyama River watershed are at Lake Twitchell which is downstream of the Cuyama Basin. The USGS has two active gages that capture flows in the Cuyama River watershed upstream of Lake Twitchell, as well as four deactivated gages (Figure 1-14).

The two active gages include one gage on the Cuyama River downstream of the Basin (ID #11136800), which is located just upstream of Lake Twitchell. This gage has 58 recorded years of streamflow measurements from 1959 to 2017. The other active gage is south of the city of Ventucopa along Santa Barbara Canyon Creek (ID #11136600) and has seven recorded years of streamflow measurements ranging from 2010 to 2017. and another gage downstream of the watershed but above Twitchell reservoir on the Cuyama River. Although neither of these stream gages is located within the Cuyama Basin, they can be used to monitor the inflow and outflow of surface water through the Basin.

<< Description of how (and which) monitoring programs will be used in the GSP (fill in after monitoring network is prepared)>>

## 1.5 Existing Groundwater Monitoring Programs

Existing groundwater monitoring programs in the Cuyama Basin are primarily operated by regional, state and federal agencies. Local agencies such as the CCSD and CBWD do not conduct routine monitoring. Existing groundwater monitoring programs in the Basin collect data on groundwater elevation, groundwater quality and subsidence at varying temporal frequencies. There are 101 wells with groundwater elevation data, of which, 43 were monitored in 2017. A description of each groundwater monitoring program in the Basin is described in further detail below.

<< Description of how (and which) monitoring programs will be used in the GSP (fill in after monitoring network is prepared)>>

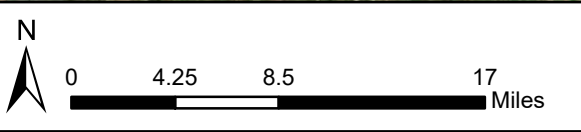
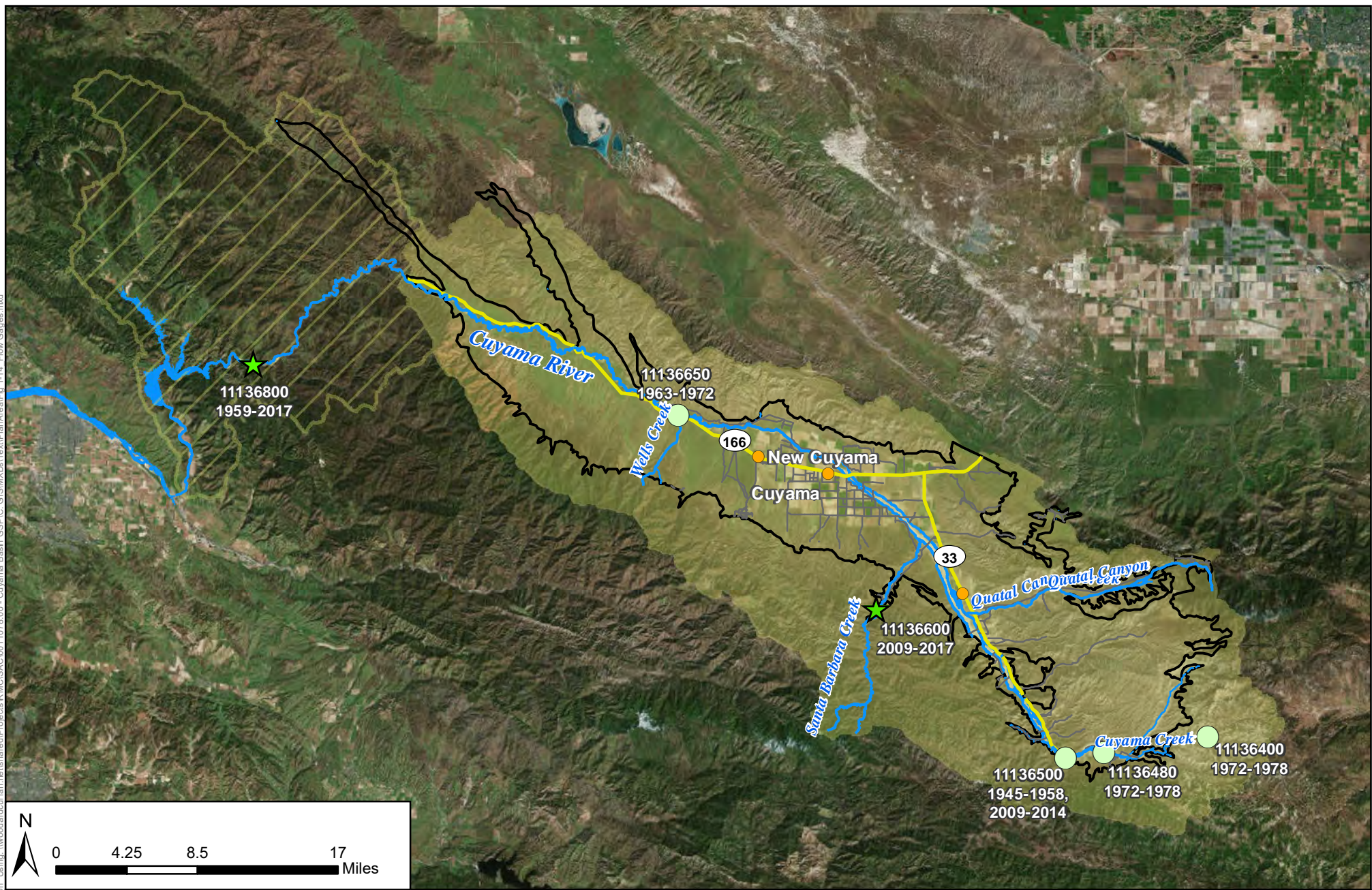
### 1.5.1 Groundwater Elevation Monitoring

#### Department of Water Resources Water Data Library

DWR's Water Data Library (WDL) is a database that stores groundwater elevation measurements from 78 unique wells in the Cuyama Basin measured from 1946 through 2017. Data is submitted to the WDL from different monitoring entities, including the Ventura County Watershed Protection District (VCWPD), SBCWA, Santa Barbara County Flood Control and Water Conservation District (SBCFC&WCD), and San Luis Obispo County Flood Control and Water Conservation District (SLOCFC&WCD).

SLOCFC&WCD has two wells in the service area with data recorded from 1990 to 2017. The VCWPD has elevation data for two wells, monitored from 2011 to 2017, and the SBCWA has elevation data for 16 wells from 2011 to 2017.

The USGS and SBCFC&WCD have monitored wells for groundwater levels in the Cuyama Basin but are no longer actively submitting data. The USGS provides historical data for 48 wells from 1946 to 2009, and the SBCFC&WCD provides data on seven wells from 2008 to 2010.



**Figure 1-14 - Surface Stream Flow Gages**  
 Cuyama Basin Groundwater Sustainability Agency  
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan  
 March 2018



**Legend**

- Cuyama Basin
- Towns
- Highways
- Local Roads
- Cuyama River
- ★ Active Flow Gages
- Inactive Flow Gages

**Cuyama Watershed**

- Contributes to Cuyama GW Basin
- Does Not Contribute to Cuyama GW Basin



## **United States Geological Survey – National Water Information System**

The USGS's National Water Information System (NWIS) contains extensive water data, including manual measurements of depth to water in wells throughout California. In the Cuyama Basin, there are 23 wells with water level measurements (in feet below land surface). Wells are monitored by the USGS in SBCFC&WCD's jurisdictional area. Wells were monitored in 2017, with most being monitored since 2008, although a few have measurements dating back to 1983. Groundwater level measurements at these wells are taken approximately once per quarter.

## **California Statewide Groundwater Elevation Monitoring**

The California Statewide Groundwater Elevation Monitoring (CASGEM) Program monitors seasonal and long-term groundwater elevation trends in dedicated groundwater basins throughout California. Monitoring entities establish CASGEM dedicated monitoring wells and report seasonal groundwater levels to CASGEM's database. The information below describes sources where CASGEM data can be retrieved.

## **Department of Water Resources Groundwater Information Center Interactive Map**

The Groundwater Information Center Interactive Map (GICIMA) is a database that collects and stores groundwater elevations and depth-to-water measurements. Groundwater elevations are measured biannually in the spring and fall by local monitoring agencies. Depth-to-water and groundwater elevation data is submitted to the GICIMA by the various monitoring entities including the SLOFC&WCD, SBCWA, and VCWPD. In the Cuyama Basin, there are 21 wells with seasonal elevation level and depth-to-water data from 2013 to 2016. Of the 21 wells, 17 are monitored by the SBCWA, two are monitored by SLOFC&WCD, and two are monitored by the VCWPD.

## **Santa Barbara County Water Agency California Statewide Groundwater Elevation Monitoring Plan**

The SBCWA's CASGEM Monitoring Plan discusses the SBCWA's 19-well monitoring network, which includes 16 actively monitored wells and three inactive wells no longer monitored due to accessibility and permission issues. Initially, SBCWA was the sole monitoring entity for the entire Basin, but in 2014 SBCWA reapplied to CASGEM as a partial monitoring entity to reduce their monitoring activities and grant permission for neighboring counties (San Luis Obispo and Ventura) to monitor their portions of the Basin.

Of the 16 active wells in SBCWA's monitoring network, three are CASGEM dedicated monitoring wells and 13 are voluntary. Wells are monitored by either SBCWA staff or USGS staff. The three CASGEM dedicated monitoring wells are measured biannually in April and October, whereas the 13 voluntary wells are measured annually. All wells are single completion. CASGEM dedicated wells have known Well Completion Reports and perforated intervals. Full construction information is not available for voluntary wells because SBCWA does not have permission to release available construction information. This known data gap was identified in the Monitoring Plan in addition to other data gaps, including:

- Spatial gaps in the northwestern and southeastern areas of the Santa Barbara County portion of the Basin.
- Data gaps in the area north of Highway 166 and in the center of the Basin between Bell and Kirschenmann Roads.



## **San Luis Obispo County Flood Control and Water Conservation District California Statewide Groundwater Elevation Monitoring Plan**

The SLOCFC&WCD's CASGEM Monitoring Plan identifies two wells in their CASGEM monitoring network. Upon recognition as a CASGEM monitoring entity in 2014, San Luis Obispo County Department of Public Works staff monitored these wells biannually. Static water level measurements are obtained biannually in April and October (corresponding to seasonal highs and low groundwater elevations). One well is screened in the Younger Alluvium and Older Alluvium and the other well is screened in the Younger Alluvium, Older Alluvium, and Morales Formation. Data gaps identified by SLOCFC&WCD's Monitoring Plan include:

- **Horizontal spatial gap.** SLOCFC&WCD is responsible for monitoring 37 square miles of the Cuyama Basin. Based on the target minimum density of at least one well per 10 square miles, SLOCFC&WCD needs a minimum of four wells to meet CASGEM program requirements (DWR, 2016). SLOCFC&WCD identified the need to add two additional wells to the monitoring network to meet CASGEM's target well density criteria.

## **Ventura County Watershed Protection District CASGEM Monitoring Plan**

The VCWPD CASGEM Monitoring Plan identifies the two wells in their CASGEM monitoring network. Upon recognition as a CASGEM monitoring entity in 2014, VCWPD staff have monitored the two wells biannually. Static water level measurements are obtained biannually, due to the remoteness of the area, in April and October (corresponding to seasonal highs and low groundwater elevations). The two wells are located in the southernmost portion of the Basin.

VCWPD does not have information beyond location and water elevation measurements for the two wells. There are no well completion reports for either well and the perforation intervals are unknown. VCWPD identifies the southeastern portion of the Basin as a spatial data gap, given that the area contains no monitoring wells.

## **1.5.2 Groundwater Quality Monitoring**

### **Water Data Library (WDL)**

DWR's WDL monitors groundwater quality data. Samples are collected from a variety of well types including irrigation, stock, domestic, and some public supply wells. WDL has 26 years of groundwater quality data dating from 1952 to 1978, which were collected from 163 wells in the Cuyama Basin over that time frame, though many have not been monitored since 1978. Wells are not regularly sampled, and most wells have only one or two days' worth of sampling measurements and large temporal gaps between the results. Constituents most frequently monitored include dissolved chloride, sodium, calcium, boron, magnesium, and sulfate. Measurements taken include conductance, pH, total alkalinity and hardness (more than 1,000 total samples per parameter). Additional dissolved nutrients, metals, and total dissolved solids (TDS) are also sampled but have fewer sample results available (one to 1,000 samples per parameter).

### **GeoTracker Groundwater Ambient Monitoring and Assessment Program**

Established in 2000, the Groundwater Ambient Monitoring and Assessment (GAMA) Program monitors groundwater quality throughout the state of California. GAMA is intended to create a comprehensive



groundwater monitoring program throughout California and increase public availability and access to groundwater quality and contamination information. GAMA receives data from a variety of monitoring entities including DWR, USGS, and the State Water Resources Control Board (SWRCB). In the Basin, there are 367 wells with water quality data submitted to GAMA, of which 72 were monitored in 2017. In the Cuyama Groundwater Basin, three agencies submit data from monitoring wells for a suite of constituents including TDS, nitrates and nitrites, arsenic, and manganese.

### **National Water Information System**

The USGS's NWIS monitors groundwater for chemical, physical, and biological properties in water supply wells throughout the Basin and data is updated to GeoTracker on a quarterly basis. The majority of wells with groundwater quality data were monitored prior to 2015. NWIS has records for 163 wells in the Basin, monitored between 1942 to 2013, 34 of which were from 2005 to 2017.

### **Irrigated Lands Regulatory Program**

The Irrigated Lands Regulatory Program (ILRP), established in 2003, regulates discharges from irrigated agriculture to surface and ground waters and establishes waste discharge orders for selected regions. The ILRP focuses on priority water quality issues, such as pesticides and toxicity, nutrients, and sediments. In the Cuyama Basin, there are 47 wells with five years of water quality records from 2012 to 2017. Wells are sampled biannually, once between March and June, and once between September and December.

### **Division of Drinking Water**

The SWRCB's Division of Drinking Water (DDW, and formerly the Department of Health Services) monitors public water system wells for California Code of Regulations Title 22 requirements relative to levels of organic and inorganic compounds such as metals, microbial compounds and radiological analytes. Data is available for active and inactive drinking water sources, for water systems that serve the public, and wells defined as serving 15 or more connections, or more than 25 people per day. In the Cuyama Basin, six DDW wells were monitored for Title 22 requirements, including pH, alkalinity, bicarbonate, calcium, magnesium, potassium, sulfate, barium, copper, iron, zinc, and nitrate. Monitoring data from these wells is available for the period 1985 to 2016.

## **1.5.3 Subsidence Monitoring**

In the Cuyama Basin, subsidence monitoring is performed using continuous global positioning system (GPS) stations monitored by the University NAVSTAR Consortium's (UNAVCO) Plate Boundary Observatory (PBO) program. There are no known extensometers in the Cuyama Basin.

### **UNAVCO Plate Boundary Observatory**

The UNAVCO PBO network consists of a network of about 1,100 continuous GPS and meteorology stations in the western U.S. used to monitor multiple pieces of information, including subsidence. There are two stations in the Cuyama Basin: (1) CUHS, located near the city of New Cuyama; and (2) VCST, located south of the city of Ventucopa. The CUHS station has subsidence data from 2000 through 2017, and the VCST station has subsidence data from 2001 through 2017.

Placeholder for other USGS Subsidence Monitoring





## 1.6 Existing Water Management Programs

### 1.6.1 Santa Barbara County Integrated Regional Water Management Plan 2013

The Santa Barbara County Integrated Regional Water Management Plan 2013 (IRWM Plan 2013) is the main integrated regional water management planning document for the Santa Barbara County IRWM Region (County of Santa Barbara, 2013). IRWM Plan 2013 emphasizes multi-agency collaboration, stakeholder involvement and collaboration, regional approaches to water management, water management involvement in land use decisions, and project monitoring to evaluate results of current practices. IRWM Plan 2013 identifies regionally and locally focused projects that help achieve regional objectives and targets while working to address water-related challenges in the region.

The following IRWM Plan 2013 objectives related to groundwater use would potentially influence implementation of the GSP:

- Protect, conserve, and augment water supplies
- Protect, manage, and increase groundwater supplies
- Practice balanced natural resource stewardship
- Protect and improve water quality
- Maintain and enhance water and wastewater infrastructure efficiency and reliability

IRWM Plan 2013 provides valuable resources related to potential concepts, projects and monitoring strategies that can be incorporated into the CBGSA GSP.

### 1.6.2 San Luis Obispo County 2014 Integrated Regional Water Management Plan

The San Luis Obispo 2014 IRWM Plan presents a comprehensive water resources management approach to managing the region's water resources, focusing on strategies to improve the sustainability of current and future needs of San Luis Obispo County (County of San Luis Obispo, 2014).

The following 2014 IRWM Plan goals related to groundwater use would potentially influence implementation of the GSP:

- **Water Supply Goal:** Maintain or improve water supply quantity and quality for potable water, fire protection, ecosystem health, and agricultural production needs; as well as to cooperatively address limitations, vulnerabilities, conjunctive-use, and water-use efficiency.
- **Ecosystem and Watershed Goal:** Maintain or improve the health of the Region's watersheds, ecosystems, and natural resources through collaborative and cooperative actions, with a focus on assessment, protection, and restoration/enhancement of ecosystem and resource needs and vulnerabilities.
- **Groundwater Monitoring and Management (Groundwater) Goal:** Achieve sustainable use of the region's water supply in groundwater basins through collaborative and cooperative actions.
- **Water Resources Management and Communications (Water Management) Goal:** Promote open communications and regional cooperation in the protection and management of water



resources, including education and outreach related to water resources conditions, conservation/water use efficiency, water rights, water allocations, and other regional water resource management efforts.

The 2014 IRWM Plan provides valuable resources related to potential concepts, projects, and monitoring strategies that can be incorporated into the CBGSA GSP.

### **1.6.3 Ventura County 2014 Integrated Regional Water Management Plan**

The Ventura County 2014 IRWM Plan reflects the unique needs of a diverse region in Ventura County, which encompasses three major watersheds, ten cities, portions of the Los Padres National Forest, a thriving agricultural economy, and is home to more than 823,000 people (County of Ventura, 2014). The Plan is a comprehensive document that primarily addresses region-wide water management and related issues.

The following 2014 IRWM Plan goals related to groundwater use would potentially influence implementation of the GSP:

- Reduce dependence on imported water and protect, conserve and augment water supplies.
- Protect and improve water quality.
- Protect and restore habitat and ecosystems in watersheds.

The 2014 IRWM Plan provides valuable resources related to potential concepts, projects and monitoring strategies that can be incorporated into the CBGSA GSP.

### **1.6.4 Kern County 2011 Integrated Regional Water Management Plan**

The Kern County 2011 IRWM Plan covers most of Kern County but does not include the portion of the county that includes the Cuyama Basin (Kern County Water Agency, 2011). Therefore, the IRWM Plan is not relevant to the Cuyama GSP and is not addressed here.

## **1.7 General Plans in Plan Area**

As illustrated in Figure 1-4, the Cuyama Basin is located within the geographic boundaries of four counties, including Kern, San Luis Obispo, Santa Barbara and Ventura. Implementation of the CBGSA GSP would be affected by the policies and regulations outlined in the General Plans of these counties, given that the Cuyama Basin, and long-term land use planning decisions that would affect the Basin, are under the jurisdiction of these counties.

This section describes how implementation of the various General Plans may change water demands in the Basin, for example due to population growth and development of the built environment, how the General Plans may influence the GSP's ability to achieve sustainable groundwater use, and how the GSP may affect implementation of General Plan land use policies.

### **1.7.1 Kern County General Plan**

Because of the close interrelationship between water supplies, land use, conservation, and open space issues, the Land Use, Conservation, and Open Space Element sections of the Kern County General Plan are



the most relevant elements for development of the GSP. These elements provide for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes (County of Kern, 2009).

### Relevant Kern County General Plan Goals and Policies

The following Land Use, Conservation, and Open Space Element goals and policies related to groundwater use would potentially influence implementation of the GSP:

- **Goal 1.4.5:** Ensure that adequate supplies of quality water (appropriate for intended use) are available to residential, industrial, and agricultural users in Kern County.
- **Policy 1.4.2:** The efficient and cost-effective delivery of public services and facilities will be promoted by designating areas for urban development which occur in or adjacent to areas with adequate public service and facility capacity.
- **Policy 1.4.2.a:** Ensure that water quality standards are met for existing users and future development.
- **Goal 1.6.6:** Promote the conservation of water quantity and quality in Kern County.
- **Goal 1.6.7:** Minimize land use conflicts between residential and resource, commercial, and industrial land uses.
- **Policy 1.6.11:** Provide for an orderly outward expansion of new urban development so that it maintains continuity of existing development, allows for the incremental expansion of infrastructure and public service, minimizes impacts on natural environmental resources, and provides a high-quality environment for residents and businesses.
- **Policy 1.9.10:** To encourage effective groundwater resource management for the long-term economic benefit of the county, the following shall be considered:
  - **Policy 1.9.10.a:** Promote groundwater recharge activities in various zone districts.
  - **Policy 1.9.10.c:** Support the development of groundwater management plans.
  - **Policy 1.9.10.d:** Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.
- **Goal 1.10.1:** Ensure that the county can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.
- **Policy 1.10.6.39:** Encourage the development of the county's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.
- **Policy 1.10.6.40:** Encourage utilization of community water systems rather than the reliance on individual wells.



- **Policy 1.10.6.41:** Review development proposals to ensure adequate water is available to accommodate projected growth.

### **Kern County General Plan's Influence on Water Demand and Groundwater Sustainability Plan's Goals**

Review of relevant Kern County General Plan goals and policies reveals that the County's goals and policies relative to future land use development and conservation complement the use and conservation of groundwater resources goals that are anticipated to be included in the CBGSA GSP. The General Plan explicitly encourages development of the county's groundwater supply to ensure that existing users have access to high quality water, and states that future growth should be accommodated only while ensuring that adequate high-quality water supplies are available to existing and future users. Due to the complementary nature of the General Plan and the GSP, the General Plan requirements will likely be with goals that are anticipated to be included in the GSP.

### **Groundwater Sustainability Plan's Influence on Kern County General Plan's Goals and Policies**

Successful implementation of the GSP will help to ensure that the Cuyama Basin's groundwater supply is managed in a sustainable manner. Given the small portion of the Cuyama Basin that lies in Kern County, and the GSP's alignment with the General Plan's goals, it is anticipated that GSP implementation will have little to no effects on the General Plan's goals related to sustainable land use development in the county.

## **1.7.2 San Luis Obispo County General Plan**

The San Luis Obispo County General Plan describes official County policy on the location of land uses and their orderly growth and development. It is the foundation upon which all land use decisions are based, guides action the County takes to assure a vital economy, ensures a sufficient and adequate housing supply, and protects agricultural and natural resources (County of San Luis Obispo, 2015).

### **Relevant San Luis Obispo General Plan Principles and Policies**

The following San Luis Obispo General Plan Land Use Element principles and policies related to groundwater use would potentially influence implementation of the GSP:

- **Principle 1:** Preserve open space, scenic natural beauty and natural resources. Conserve energy resources. Protect agricultural land and resources.
- **Policy 1.2:** Keep the amount, location and rate of growth allowed by the Land Use Element within the sustainable capacity of resources, public services and facilities.
- **Policy 1.3:** Preserve and sustain important water resources, watersheds and riparian habitats.

The following San Luis Obispo General Plan Conservation and Open Space Element goals and policies related to groundwater use would potentially influence implementation of the GSP:

- **Goal WR 1:** The county will have a reliable and secure regional water supply.
- **Policy WR 1.2:** Conserve Water Resources. Water conservation is acknowledged to be the primary method to serve the county's increasing population. Water conservation programs should be implemented countywide before more expensive and environmentally costly forms of new water are secured.



- **Policy WR 1.3:** New Water Supply. Development of new water supplies should focus on efficient use of our existing resources. Use of reclaimed water, interagency cooperative projects, desalination of contaminated groundwater supplies, and groundwater recharge projects should be considered prior to using imported sources of water or seawater desalination, or dams and on-stream reservoirs.
- **Policy WR 1.7:** Agricultural Operations. Groundwater management strategies will give priority to agricultural operations. Protect agricultural water supplies from competition by incompatible development through land use controls.
- **Policy WR 1.12:** Impacts of New Development. Accurately assess and mitigate the impacts of new development on water supply. At a minimum, comply with the provisions of Senate Bills 610 and 221.
- **Policy WR 1.14:** Avoid Net Increase in Water Use. Avoid a net increase in non-agricultural water use in groundwater basins that are recommended or certified as Level of Severity II or III for water supply. Place limitations on further land divisions in these areas until plans are in place and funded to ensure that the safe yield will not be exceeded.
- **Goal WR 2:** The County will collaboratively manage groundwater resources to ensure sustainable supplies for all beneficial uses.
- **Policy WR 2.1:** Groundwater quality assessments Prepare groundwater quality assessments, including recommended monitoring, and management measures.
- **Policy WR 2.2:** Groundwater Basin Reporting Programs. Support monitoring and reporting programs for groundwater basins in the region.
- **Policy WR 2.3:** Well Permits. Require all well permits to be consistent with the adopted groundwater management plans.
- **Policy WR 2.4:** Groundwater Recharge. Where conditions are appropriate, promote groundwater recharge with high-quality water.
- **Policy WR 2.5:** Groundwater Banking Programs. Encourage groundwater-banking programs.
- **Goal WR 3:** Excellent water quality will be maintained for the health of the people and natural communities.
- **Policy WR 3.2:** Protect Watersheds. Protect watersheds, groundwater and aquifer recharge areas, and natural drainage systems from potential adverse impacts of development projects.
- **Policy WR 3.3:** Improve Groundwater Quality. Protect and improve groundwater quality from point and non-point source pollution, including nitrate contamination; MTBE and other industrial, agricultural, and commercial sources of contamination; naturally occurring mineralization, boron, radionuclides, geothermal contamination; and seawater intrusion and salts.
- **Policy WR 3.4:** Water Quality Restoration. Pursue opportunities to participate in programs or projects for water quality restoration and remediation with agencies and organizations such as the Regional Water Quality Control Board (RWQCB), California Department of Fish and



Wildlife (CDFW), National Marine Fisheries Service (NMFS), and Resource Conservation Districts (RCDs) in areas where water quality is impaired.

- **Goal 4:** Per capita water use in the county will decline by 20% by 2020.
- **Policy WR 4.1:** Reduce Water Use. Employ water conservation programs to achieve an overall 20% reduction in per capita residential and commercial water use in the unincorporated area by 2020. Continue to improve agricultural water use efficiency consistent with Policy AGP 10 in the Agricultural Element.
- **Policy WR 4.2:** Water Pricing Structures. Support water-pricing structures to encourage conservation by individual water users and seek to expand the use of conservation rate structures in areas with Levels of Severity II and III for water supply.
- **Policy WR 4.3:** Water conservation The County will be a leader in water conservation efforts.
- **Policy WR 4.5:** Water for Recharge. Promote the use of supplemental water such as reclaimed sewage effluent and water from existing impoundments to prevent overdraft of groundwater. Consider new ways to recharge underground basins and to expand the use of reclaimed water. Encourage the eventual abandonment of ocean outfalls.
- **Policy WR 4.6:** Graywater. Encourage the use of graywater systems, rainwater catchments, and other water reuse methods in new development and renovation projects, consistent with state and local water quality regulations.
- **Policy WR 4.7:** Low Impact Development. Require Low Impact Development (LID) practices in all discretionary and land division projects and public projects to reduce, treat, infiltrate, and manage urban runoff.
- **Policy WR 4.8:** Efficient Irrigation. Support efforts of the resource conservation districts, California Polytechnic State University, the University of California Cooperative Extension, and others to research, develop, and implement more efficient irrigation techniques.
- **Goal 5:** The best possible tools and methods available will be used to manage water resources.
- **Policy WR 5.1:** Watershed Approach. The County will consider watersheds and groundwater basins in its approach to managing water resources in order to include ecological values and economic factors in water resources development.

The following San Luis Obispo General Plan Agriculture Element goals and policies related to groundwater use would potentially influence implementation of the GSP:

- **Policy AGP10a:** Encourage water conservation through feasible and appropriate “best management practices.” Emphasize efficient water application techniques; the use of properly designed irrigation systems; and the control of runoff from croplands, rangelands, and agricultural roads.
- **Policy AGP10b:** Encourage the U.C. Cooperative Extension to continue its public information and research program describing water conservation techniques that may be appropriate for agricultural practices in this county. Encourage landowners to participate in programs that conserve water.



- **Policy AGP11b:** Do not approve proposed general plan amendments or re-zonings that result in increased residential density or urban expansion if the subsequent development would adversely affect: (1) water supplies and quality, or (2) groundwater recharge capability needed for agricultural use.
- **Policy AGP11c:** Do not approve facilities to move groundwater from areas of overdraft to any other area, as determined by the Resource Management System in the Land Use Element.

### **San Luis Obispo County General Plan's Influence on Water Demand and Groundwater Sustainability Plan**

The semi-arid climate in the county is subject to limited amounts of rainfall and recharge of groundwater basins and surface reservoirs. A focus of the County General Plan is that future development should take place recognizing that the dependable supply of some county groundwater basins is already being exceeded. If mining of groundwater continues in those areas without allowing aquifers to recharge, water supply and water quality problems will eventually result, which may be costly to correct and could become irreversible.

The General Plan explicitly encourages preservation of the county's natural resources, and states that future growth should be accommodated only while ensuring that this growth occurs within the sustainable capacity of these resources. Due to the complementary nature of the General Plan and the GSP, implementation of the GSP is anticipated to be consistent with the General Plan's goals and policies.

The county was expected to grow between 0.44-1% per year from 2013 through 2018, an increase of approximately 12,000 persons over the five-year period and is expected to grow by over 41,000 from 2010 to 2030 (County of San Luis Obispo, 2014). These growth estimates are County-wide and the General Plan does not specify how much growth, if any, is expected to occur within the Basin. Ensuring sustainable management of the basin through implementation of the GSP will be critical in terms of supporting projected population growth in the county while maintaining sustainable groundwater levels in the basin.

### **Groundwater Sustainability Plan's Influence on San Luis Obispo County General Plan's Goals and Policies**

Successful implementation of the GSP will help to ensure that the Cuyama Basin's groundwater supply is managed in a sustainable manner. Given the amount of population growth projected in the county in the coming years, it is possible that changes in groundwater management by the GSP will impact the location and type of development that will occur in the Basin in the future. It is anticipated that GSP implementation will reinforce the General Plan's goals related to sustainable land use development in the county.

### **1.7.3 Santa Barbara County Comprehensive Plan**

The Santa Barbara County Comprehensive Plan is a means by which more orderly development and consistent decision making in the county can be accomplished. The Plan involves a continuing process of research, analysis, goal-setting and citizen participation, the major purpose of which is to enable the County Board of Supervisors and Planning Commission to more effectively determine matters of priority in the allocation of resources, and to achieve the physical, social and economic goals of the communities in the county (County of Santa Barbara, 2016).



## Relevant Santa Barbara County Comprehensive Plan Principles and Policies

The following Santa Barbara County Comprehensive Plan Land Use Element policies related to groundwater use would potentially influence implementation of the GSP:

- **Land Use Development Policy 4:** Prior to issuance of a development permit, the County shall make the finding, based on information provided by environmental documents, staff analysis, and the applicant, that adequate public or private services and resources (i.e., water, sewer, roads, etc.) are available to serve the proposed development.
- **Hillside and Watershed Protection Policy 7:** Degradation of the water quality of groundwater basins, nearby streams, or wetlands shall not result from development of the site. Pollutants, such as chemicals, fuels, lubricants, raw sewage, and other harmful waste, shall not be discharged into or alongside coastal streams or wetlands either during or after construction.

The following Santa Barbara County Comprehensive Plan Conservation Element, Groundwater Resources Section goals and policies related to groundwater use would potentially influence implementation of the GSP:

- **Goal 1:** To ensure adequate quality and quantity of groundwater for present and future county residents, and to eliminate prolonged overdraft of any groundwater basins.
- **Policy 1.1:** The County shall encourage and assist all of the county's water purveyors and other groundwater users in the conservation and management, on a perennial yield basis, of all groundwater resources.
- **Policy 1.2:** The County shall encourage innovative and/or appropriate, voluntary water conservation activities for increasing the efficiency of agricultural water use in the county.
- **Policy 1.3:** The County shall act within its powers and financial abilities to promote and achieve the enhancement of groundwater basin yield.
- **Goal 2:** To improve existing groundwater quality, where feasible, and to preclude further permanent or long-term degradation in groundwater quality.
- **Policy 2.1:** Where feasible, in cooperation with local purveyors and other groundwater users, the County shall act to protect groundwater quality where quality is acceptable, improve quality where degraded, and discourage degradation of quality below acceptable levels.
- **Policy 2.2:** The County shall support the study of adverse groundwater quality effects which may be due to agricultural, domestic, environmental and industrial uses and practices.
- **Goal 3:** To coordinate County land use planning decisions and water resources planning and supply availability.
- **Policy 3.1:** The County shall support the efforts of the local water purveyors to adopt and implement groundwater management plans pursuant to the Groundwater Management Act and other applicable law.
- **Policy 3.2:** The County shall conduct its land use planning and permitting activities in a manner which promotes and encourages the cooperative management of groundwater resources by





local agencies and other affected parties, consistent with the Groundwater Management Act and other applicable law.

- **Policy 3.3:** The County shall use groundwater management plans, as accepted by the Board of Supervisors, in its land use planning and permitting decisions and other relevant activities.
- **Policy 3.4:** The County's land use planning decisions shall be consistent with the ability of any affected water purveyor(s) to provide adequate services and resources to their existing customers, in coordination with any applicable groundwater management plan.
- **Policy 3.5:** In coordination with any applicable groundwater management plan(s), the County shall not allow, through its land use permitting decisions, any basin to become seriously over drafted on a prolonged basis.
- **Policy 3.6:** The County shall not make land use decisions which would lead to the substantial over commitment of any groundwater basin.
- **Policy 3.7:** New urban development shall maximize the use of effective and appropriate natural and engineered recharge measures in project design, as defined in design guidelines to be prepared by the Santa Barbara County Flood Control and Water Conservation District in cooperation with P&D.
- **Policy 3.8:** Water-conserving plumbing, as well as water-conserving landscaping, shall be incorporated into all new development projects, where appropriate, effective, and consistent with applicable law.
- **Policy 3.9:** The County shall support and encourage private and public efforts to maximize efficiency in the pre-existing consumptive M&I use of groundwater resources.
- **Policy 3.10:** The County, in consultation with the cities, affected water purveyors, and other interested parties, shall promote the use of consistent "significance thresholds" by all appropriate agencies with regard to groundwater resource impact analysis.
- **Goal 4:** To maintain accurate and current information on groundwater conditions throughout the county.
- **Policy 4.1:** The County shall act within its powers and financial abilities to collect, update, refine, and disseminate information on local groundwater conditions.

The following Santa Barbara County Comprehensive Plan Agricultural Element goal and policy related to groundwater use would potentially influence implementation of the GSP:

- **Goal 1:** Santa Barbara County shall assure and enhance the continuation of agriculture as a major viable production industry in Santa Barbara Country. Agriculture shall be encouraged. Where conditions allow, (taking into account environmental impacts) expansion and intensification shall be supported.
- **Policy 1F:** The quality and availability of water, air, and soil resources shall be protected through provisions including but not limited to, the stability of Urban/Rural Boundary Lines, maintenance of buffer areas around agricultural areas, and the promotion of conservation practices.



## **Santa Barbara County Comprehensive Plan's Influence on Water Demand and Groundwater Sustainability Plan's Goals**

Review of relevant Santa Barbara County Comprehensive Plan goals and policies reveals that the County's goals and policies relative to future land use development and conservation complement the use and conservation of groundwater resources goals anticipated to be included in the CBGSA GSP. The Comprehensive Plan explicitly states as a goal ensuring that adequate quality and quantity of groundwater will be available for present and future county residents, as well as the elimination of prolonged overdraft of any groundwater basins through land use planning decisions and water resources planning. Due to the complementary nature of the General Plan and the GSP, implementation of the General Plan would be a catalyst toward successful implementation of the GSP's goals.

The county is expected to grow from 428,600 to 520,000 residents between 2015 and 2040 (SBCAG, 2012). These growth estimates are County-wide and the General Plan does not specify how much growth, if any, is expected to occur within the Basin. Ensuring sustainable management of the Basin through implementation of the GSP will be critical in terms of supporting projected population growth in the county while maintaining sustainable groundwater levels in the Basin.

## **Groundwater Sustainability Plan's Influence on Santa Barbara County Comprehensive Plan's Goals and Policies**

Successful implementation of the GSP will help to ensure that the Cuyama Basin's groundwater supply is managed in a sustainable manner. Given the amount of population growth projected in the county in the coming years, it is possible that changes in groundwater management by the GSP will result in changes to the pace, location and type of development that will occur in the county in the future. It is anticipated that GSP implementation will be consistent with the Comprehensive Plan's goals related to sustainable land use development in the county.

### **1.7.4 Ventura County General Plan**

The Ventura County General Plan consists of: (a) countywide Goals, Policies and Programs containing four chapters (Resources, Hazards, Land Use, and Public Facilities and Services), (b) four appendices (Resources, Hazards, Land Use, and Public Facilities and Services) which contain background information and data in support of the Countywide Goals, Policies and Programs, and (c) several Area Plans which contain specific goals, policies and programs for specific geographical areas of the county.

#### **Relevant Ventura County General Plan Principles and Policies**

The following Ventura County General Plan (Resources Chapter, Water Resources Section, 1.3.1 Goals, 1.3.2 Policies) goals and policies related to groundwater use would potentially influence implementation of the GSP:

- **Goal 1:** Inventory and monitor the quantity and quality of the county's water resources.
- **Goal 2:** Effectively manage the water resources of the county by adequately planning for the development, conservation and protection of water resources for present and future generations.



- **Goal 3:** Maintain and, where feasible, restore the chemical, physical and biological integrity of surface and groundwater resources.
- **Goal 4:** Ensure that the demand for water does not exceed available water resources.
- **Goal 5:** Protect and, where feasible, enhance watersheds and aquifer recharge areas.
- **Goal 6:** Promote reclamation and reuse of wastewater for recreation, irrigation and to recharge aquifers.
- **Goal 7:** Promote efficient use of water resources through water conservation.
- **Policy 1:** Discretionary development which is inconsistent with the goals and policies of the County's Water Management Plan (WMP) shall be prohibited, unless overriding considerations are cited by the decision-making body.
- **Policy 2:** Discretionary development shall comply with all applicable County and State water regulations.
- **Policy 3:** The installation of on-site septic systems shall meet all applicable State and County regulations.
- **Policy 4:** Discretionary development shall not significantly impact the quantity or quality of water resources in watersheds, groundwater recharge areas or groundwater basins.
- **Policy 5:** Landscape plans for discretionary development shall incorporate water conservation measures as prescribed by the County's Guide to Landscape Plans, including use of low water usage landscape plants and irrigation systems and/or low water usage plumbing fixtures and other measures designed to reduce water usage.
- **Policy 10:** All new golf courses shall be conditioned to prohibit landscape irrigation with water from groundwater basins or inland surface waters identified as Municipal and Domestic Supply or Agricultural Supply in the California Regional Water Quality Control Board's Water Quality Control Plan unless either: a) the existing and planned water supplies for a Hydrologic Area, including interrelated Hydrologic Areas and Subareas, are shown to be adequate to meet the projected demands for existing uses as well as reasonably foreseeable probable future uses in the area, or b) it is demonstrated that the total groundwater extraction/recharge for the golf course will be equal to or less than the historic groundwater extraction/recharge (as defined in the Ventura County Initial Study Assessment Guidelines) for the site. Where feasible, reclaimed water shall be utilized for new golf courses.

The following Ventura County General Plan (Land Use Chapter, 3.1.1 Goals) goal related to groundwater use would potentially influence implementation of the GSP:

- **Goal 1:** Ensure that the county can accommodate anticipated future growth and development while maintaining a safe and healthful environment by preserving valuable natural resources, guiding development away from hazardous areas, and planning for adequate public facilities and services. Promote planned, well-ordered and efficient land use and development patterns.



The following Ventura County General Plan (Public Facilities Chapter, Water Supply Facilities section 4.3.1 Goals and 4.3.2 Policies) goals and policies related to groundwater use would potentially influence implementation of the GSP:

- **Goal 1:** Ensure the provision of water in quantities sufficient to satisfy current and projected demand.
- **Goal 2:** Encourage the employment of water conservation measures in new and existing development.
- Encourage the continued cooperation among water suppliers in the county in meeting the water needs of the county as a whole.
- **Policy 1:** Development that requires potable water shall be provided a permanent potable water supply of adequate quantity and quality that complies with applicable County and State water regulations. Water systems operated by or receiving water from Casitas Municipal Water District, the Calleguas Municipal Water District or the United Water Conservation District will be considered permanent supplies unless an Urban Water Management Plan (prepared pursuant to Part 2.6 of Division 6 of the Water Code) or a water supply and demand assessment (prepared pursuant to Part 2.10 of Division 6 of the Water Code) demonstrates that there is insufficient water supply to serve cumulative development in the district's service area. When the proposed water supply is to be drawn exclusively from wells in areas where groundwater supplies have been determined by the Environmental Health Division or the Public Works Agency to be questionable or inadequate, the developer shall be required to demonstrate the availability of a permanent potable water supply for the life of the project.
- **Policy 2:** Discretionary development as defined in section 10912 of the Water Code shall comply with the water supply and demand assessment requirements of Part 2.10 of Division 6 of the Water Code.
- **Policy 3:** Discretionary development shall be conditioned to incorporate water conservation techniques and the use of drought resistant native plants pursuant to the County's Guide to Landscape Plans.

### **Ventura County Plan's Influence on Water Demand and Groundwater Sustainability Plan's Goals**

Review of relevant Ventura County General Plan goals and policies reveals that the County's goals and policies relative to future land use development and conservation complement the use and conservation of groundwater resources goals included in the CDBGSA GSP. The General Plan explicitly states as a goal ensuring that adequate quality and quantity of groundwater will be available for present and future county residents, as well as accommodating anticipated future growth and development while maintaining a safe and healthful environment by preserving valuable natural resources, including groundwater. Due to the complementary nature of the General Plan and the GSP, it is anticipated that implementation of the GSP will be consistent with the General Plan.

The county is expected to grow from 865,090 to 969,271 residents between 2018 and 2040 (Caltrans, 2015). These growth estimates are County-wide and the General Plan does not specify how much growth, if any, is expected to occur within the Basin. Ensuring sustainable management of the basin through



implementation of the GSP will be critical in terms of supporting projected population growth in the county while maintaining sustainable groundwater levels in the Basin.

### **Groundwater Sustainability Plan's Influence on Ventura County General Plan's Goals and Policies**

Successful implementation of the GSP will help to ensure that the Cuyama Basin's groundwater supply is managed in a sustainable manner. Given the amount of population growth projected in the county in the coming years, it is possible that changes in groundwater management by the GSP will result in changes to the pace, location and type of development that will occur in the county in the future. It is anticipated that GSP implementation will reinforce the General Plan's goals related to sustainable land use development in the county.

### **1.8 Plan Elements from CWC Section 10727.4**

- To be filled in near end of GSP development. Will be used to address any component in the list below that was not addressed elsewhere in the GSP. If addressed in the GSP, a reference to where it's addressed will be provided.
  - (a) Control of saline water intrusion.
  - (b) Wellhead protection areas and recharge areas.
  - (c) Migration of contaminated groundwater.
  - (d) A well abandonment and well destruction program.
  - (e) Replenishment of groundwater extractions.
  - (f) Activities implementing, opportunities for, and removing impediments to, conjunctive use or underground storage.
  - (g) Well construction policies.
  - (h) Measures addressing groundwater contamination cleanup, groundwater recharge, in-lieu use, diversions to storage, conservation, water recycling, conveyance, and extraction projects.
  - (i) Efficient water management practices, as defined in Section 10902, for the delivery of water and water conservation methods to improve the efficiency of water use.
  - (j) Efforts to develop relationships with state and federal regulatory agencies.
  - (k) Processes to review land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity.
  - (l) Impacts on groundwater dependent ecosystems.



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