TO: **Water Resources Advisory Committee**

FROM: **Ray Dienzo, SLO County Staff Engineer**

DATE: **March 1, 2017**

SUBJECT: **Agenda Item #8: Consider Subcommittee Comments on the Review of the Water Supply, Water Systems, and Wastewater Chapters of the 2014/2016 of the Biennial Resource Summary Report for the County Resource Management System**

Recommendation

Consider forwarding the subcommittee comments on the review of the Water and Wastewater Components of the Biennial Summary Report for the County Resource Management System to the County Planning and Building Department.

Discussion

At the February 1, 2017 WRAC meeting, WRAC members approved formation of an ad hoc subcommittee tasked with reviewing the water supply, water systems, and wastewater components of the 2014/16 Draft Biennial Resource Summary Report for the County Resource Management System. Subcommittee members included: Greg Grewal, Anthony Kalvans, Jim Garing, Debbie Peterson, Jim Coalwell, and Bill Garfinkel.

The subcommittee met to review the draft Biennial Report on February 17, 2017. The subcommittee members made the following comments:

- Level of service (LOS) and the recommendation for LOS are based on information provided by purveyors. Not all areas are served by purveyors, thus resulting in potentially insufficient data to form an accurate assessment and recommendation.

- Water Demand Data found in the 2014 IRWM Plan used to generate future water use projections appears to be incorrect.

- Page 66 of RSR indicates agricultural demand at 3,800- 4,300 AFY, yet page 23 of NMMA's 2015 Annual Report indicates that agricultural production was 7,337 AF for Calendar year 2015. Note that the NMMA Annual Report for 2016 will not be available until about May, 2017.

- The existence of the 11,931 AFY of “Other GW Supply” on Page 66 of the RSR is unknown.

Additional comments were received by subcommittee members via email and are provided in the following attachments.

Attachments:
1. Member Jim Garing Draft RSR comments (February 20, 2017)
2. Member Bill Garfinkel Draft RSR comments (February 17, 2017)
3. Member Debbie Peterson Draft RSR comments (February 20, 2017)
4. Member Greg Grewal Draft RSR comments (February 21, 2017)

Angela Ruberto

From:
Sent: Monday, February 20, 2017 9:16 PM
To:

Cc: Ray Dienzo
Subject: WRAC Subcommittee - Draft 2014/2016 RMS Biennial Report Discussion

Here are my areas of concern in the Resource Summary Report Draft 2017 as it relates to the Nipomo Mesa Management Area (NMMA):

1.- Page 66 of the RSR Draft indicates agricultural demand at 3,800- 4,300 AFY, yet page 23 of NMMA's 2015 Annual Report indicates that agricultural production was 7,337 AF for Calendar year 2015.

Note that the NMMA Annual Report for 2016 will not be available until about May, 2017.

2.- Page 66 of the RSR Draft also indicates, under supply, Other GW Supplies, 11,931 AFY in addition to 7,482 AFY from the Santa Maria Valley Groundwater Basin, Nipomo Mesa Sub- Area. So far as I am aware, the "Other GW Supply" of 11,931 AFY does not exist.

Keep in mind that I was the District Engineer for NCSD between 1993 and 2008 and was intimately involved in water resources for the District.

3.- Page ES-2 of the NMMA Calendar Year 2015 Annual Report indicates that total groundwater production for NMMA was 15,249 AF.

4.- Pages 42 and 43 of the NMMA Calendar Year 2015 report indicate:

"In Fall of 2015 the divide between the pumping depression and Coastal wells directly to the west is largely absent creating a groundwater gradient that is landward from the coast."

In my opinion, the above condition indicates a condition conducive to seawater intrusion. It is "downhill" from the ocean to inland groundwater elevations.

5.- In 2002, The California Department of Water Resources published a report entitled "Water Resources Of The Arroyo Grande- Nipomo Mesa Area". At page ES-21 this report indicates that the dependable yield of the Nipomo Mesa portion of the basin is estimated to be between 4,800 and 6,000 AF. Compared to the actual production in 2015 of 15,249 AF this would seem to indicate that NMMA was pumping at least (6,000 - 15,249 = - 9,249) or 9,000 and as much as 10,200 AF more than the dependable yield.

6.- A review of reports prepared by DWR, NCSD and NMMA over the 50 year period between 1965 and 2015 indicates that groundwater surface elevations under the Nipomo Mesa have been falling for half a century, an example being the area of the pumping depression, where the groundwater ridge between NCMA and NMMA stood 50 feet above sea level in 1995, but had fallen to sea level by 2015, with the deepest portion of the NMMA pumping depression at 13 feet below sea level.

7.- Calculations which compare the amount of groundwater lost under NMMA over the last 50 years using the conclusion of about a 10,000 AFY overdraft in 2015 in No. 5. above, agree with calculations which use the volume of emptied aquifer in No. 6. above and indicate a cumulative groundwater deficit over the 50 year period of about 50,000 acre feet.

8.- If the DWR (2002) dependable yield figures of 4,800 to 6,000 AFY for NMMA are accepted and then compared to Agricultural pumping of 7,337 AF reported in the NMMA 2015 annual report, it is apparent that there is NO surplus available for NMMA purveyors, since overlying land owners (agricultural pumpers) have senior rights to groundwater under their land.

9.- The conditions set forth in 1.- 8. above place the NMMA's groundwater supply at ever increasing risk from seawater intrusion, but also places the NCMA southwest agricultural area and eventually Pismo Beach and OCSD wells at risk to seawater intrusion in the near term and all NCMA purveyor wells at risk if the trend continues.

10.- After reviewing the draft I notice that it mentions the existence of the adjudication, but no mention is made of some of the important provisions in the June 30, 2005 Stipulation, which was the settlement agreement which adjudicated the basin through terms in the settlement:

12.- While the draft mentions the requirement for NCSD to bring in 2,500 AFY, there is no mention of the requirement to bring in water for, or to assess a charge sufficient to pay to bring in water for, all new development on the Mesa that occurred after January 1, 2005. NCSD has been charging approximately $14,000 per DU in this regard, which NCSD has used to help pay for the importation of 2,500 AFY (the Nipomo Supplemental Water Project), but has so far had insufficient funding to complete that project.

13.- Because of lack of funding, the Nipomo supplemental water Project is so far bringing in less than 1,000 AFY and that flow just began about a year ago at 650 AFY.

13- Because of the requirement to bring in water for all new development occurring after January 1, 2005, the Nipomo Supplemental Water Project will have to bring in significantly MORE than 2,500 AFY. The two water supply requirements in the Stipulation are cumulative. NCSD itself is planning on an extra 500 AFY or 3,000 AFY total to account for the added development within NCSD since January 1, 2005. Unknown additional water will be required for the same reason for the likes of Rural, Golden State and other purveyors on the Mesa. Their requirements should be defined in the draft.

14- NCSD, who by the Stipulation, has been assigned the task of bringing in the Nipomo Supplemental Water indicates that the cost of that water is approximately $14,000 per equivalent dwelling unit, and in fact charges that amount for new development as noted above. In the unincorporated areas on the Mesa outside NCSD, the County charges a water fee of $4,400 per DU which is, according to NCSD far below the actual cost of Nipomo Supplemental Water. Moreover, the county has not provided to NCSD those funds which the County has collected for supplemental water, further delaying implementation of the full Nipomo Supplemental Water Project.

Jim Garing
District 4 Rep/ WRAC

2014 -2016

Resource Summary Report

San Luis Obispo County General Plan

PUBLIC REVIEW DRAFT

Board of Supervisors

John Peschong, District 1
Bruce S. Gibson, District 2
Adam Hill, District 3
Lynn Compton, District 4
Debbie Arnold, District 5

Staff

James A. Bergman, Planning and Building Director
Cheryl Ku and Brian Pedrotti, Project Managers

February 2017

Table II-17 -- Santa Maria Valley Groundwater Basin – Nipomo Mesa Management Area Existing and Forecasted Water Supply and Demand

Demand	Nipomo CSD	Woodlands Mutual Water Co.	Golden State Water Co.	Agriculture	Rural
FY 2015/2016 Demand (AFY)[1]	1,773.3	732.1	625.1	3,800	3,905
Forecast Demand in 15 Years (AFY)	3,995	1,386[5]	1,690	4,050	5,222
Forecast Demand in 20 Years (AFY)	4,198	1520[5]	1,847	4,133.3	5,661
Buildout Demand (30 Or More Years) (AFY)	4,198[2]	1520[2, 5]	1,944	3,800-4,300	5,661
Supply					
Nipomo Supplemental Water Project (AFY)[3]	2,167	417	208	0	0
Santa Maria Valley Groundwater Basin -- Nipomo Mesa Sub-Area (AFY)	1,103	817	852	7,482	2,095
San Luis Obispo Valley Groundwater Basin	0	0	0	809	226
Other GW Supplies	0	0	0	11,931	3,340
Recycled Water (AFY)	60-74	200	0	0	0
Total Supply:	3,334	1,434	1,060	20,222	5,661
Water Supply Versus Forecast Demand	Water demand projected over 15 years is projected to equal or exceed the estimated dependable supply.[4]				

Source: Water System Usage forms: July 2014 – June 2015; July 2015 – June 2016, San Luis Obispo County Master Water Report, 2012, Table 4.60; San Luis Obispo Integrated Regional Water Management Plan, Tables D-25 and D-26; Nipomo CSD 2015 Urban Water Management Plan

Notes:

1. See Table II-1. Current year data for agriculture and rural are from 2012.
2. Ten percent additional water conservation (beyond what has already been accomplished) assumed for the low end of the forecast buildout demand, except for Grover Beach, which assumed 20% additional reduction.
3. Nipomo supplemental water project includes Nipomo CSD, Woodlands MWC, and Golden State Water Company. Nipomo CSD will receive approximately 1,667 AFY and has reserved an additional 500 AFY. The other three will receive 833 AFY.
4. The NCMA cities, NMMA cities, County, District, and local land owners actively and cooperatively manage surface and groundwater with the goal of preserving the long-term integrity of water supplies in the NCMA and NMMA.
5. Demands are based on an 18-hole golf course constructed in Phase IIA/IIB. Projected demands may be reduced if the open space is planted with vineyards or drought tolerant landscaping in lieu of the golf course.

Oceano/Nipomo Area Water Systems

Nipomo CSD is currently constructing the Supplemental Water Project, described above. No other significant water system improvements or limitations were reported. **No recommended Levels of Severity.**

Nipomo Mesa Management Area

8th Annual Report

Calendar Year 2015

Prepared by

NMMA Technical Group

Submitted May 2016

upon estimates of groundwater in storage available for pumping to meet water demands. Such work is an important goal for the TG and mirrors the TG's desire to characterize groundwater storage in the NMMA. The TG has developed specific recommendations to address these issues for the next Annual Report.

ES-2 Findings

Presented in this section of the Executive Summary are brief descriptions of the findings by the TG for calendar year 2015. Presented in the body of this report are the details and bases for these findings.

1. Severe Water Shortage Conditions developed and now exist in the NMMA in calendar year 2015, as indicated by a historical low Key Wells Index of 10 ft msl (see Section 7.2 Water Shortage Conditions).

2. The Nipomo Community Services District (NCSD) completed Phase I of the Nipomo Supplemental Water Project (NSWP). Water deliveries began on July 2, 2015, delivering 321 AF of imported water through the NSWP in calendar year 2015.

3. Consistent with Stage III of the NMMA Water Shortage Response Stages, a total reduction of 1,728 AF (-30%) in purveyor production was accomplished in 2015 as compared to 2013.

4. Coastal water quality in the NMMA continues to be better than thresholds for Potentially Severe Water Shortage Conditions (i.e., chloride concentrations are less than threshold concentrations).

5. There are a number of direct measurements that indicate that demand exceeds the ability of the supply to replace the water pumped from the aquifers (see Section 7.1.2 Hydrologic Inventory).

6. Total rainfall for Water Year 2015 (October 1, 2014 through September 30, 2015) is approximately 57 percent of the long-term average (see Section 3.1.3 Rainfall).

7. The period of analysis (1975-2015) used by the TG is roughly 8 percent "wetter" on average than the long-term record (1920-2015) indicating there is a slight bias toward overstating the amount of local water supply resulting from percolation of rainfall (see Section 7.3.1 Climatological Trends).

8. The total estimated 2015 calendar year groundwater production is 15,249 acre-feet (AF). The breakdown by user and type of use is shown in the following table (see Section 3.1.9 Groundwater Production).

Agriculture	7,337 AF
Urban/Industrial	7,912 AF
Total Production	**15,249 AF**

9. The total Waste Water Treatment Facility effluent discharged in the NMMA was 702 AF for calendar year 2015 (see Section 3.1.11 Wastewater Discharge and Reuse).

10. Contour maps prepared using Spring and Fall 2015 groundwater elevation data suggest regional groundwater flow is generally from east to west (toward the ocean). This regional flow direction is locally reversed due to the pumping depression in the central NMMA. The contour maps also

Table 3-3. Calendar year 2015 Reported Groundwater Production

Stipulating Parties	Production (AFY)
NCSD	1,626
GSWC	786
Woodlands	871
Phillips 66	1,100
RWC	651
Total	**5,034**

Estimated Production

The calendar year 2015 estimated groundwater production for irrigating agricultural crops in the NMMA is 7,337 AF computed on a daily time-step by multiplying the crop area and the crop specific water demand met by either soil moisture, rainfall, or groundwater production, thus developing the unit production for calendar year 2015 (Table 3-4). The crop specific water demand was re-evaluated in conjunction with the 2015 Land Use update (see Section 3.1.8 Land Use). The change in crop coefficients used for this estimate is presented in an appendix to this Annual Report (see Appendix E). The slight increase in groundwater production for agriculture is largely due to the dry and warm winter during WY 2015. Groundwater production for the berry crops amounted to 64 percent of the total annual agricultural groundwater production (Table 3-4).

Table 3-4. Calendar year 2015 Estimated Groundwater Production for Agriculture

Crop Type	2015 Area (Acres)	2015 Unit Production (AF/acre)	2015 Production (AFY)
Grape and Deciduous	19	1.2	22
Pasture	27	3.5	94
Vegetable Rotational	383	2.4	911
Avocado and Lemon	342	2.9	1,000
Berries	1,565	3.0	4,704
Nursery	360	1.7	605
Non-irrigated Farmland	241	0.0	0
Total	**3,040**		**7,337**

Groundwater production for urban use was estimated for other land uses including rural landowners not served by a purveyor. The estimated production for the other land uses is 2,878 AF for calendar year 2015 (Table 3-5). About 60 percent of the estimated production for other land uses types was used for golf course irrigation (Table 3-5).

Groundwater to no more than 110% of that highest pooled amount, upon the full implementation of the Nipomo Supplemental Water Project, including the Yearly use of at least 2 500 acre-feet of Nipomo Supplemental Water (subject to the provisions of Paragraph VI(A)(2)) within the NMMA. The method of reducing pooled production to 110% is to be prescribed by the NMMA Technical Group and approved by the Court.

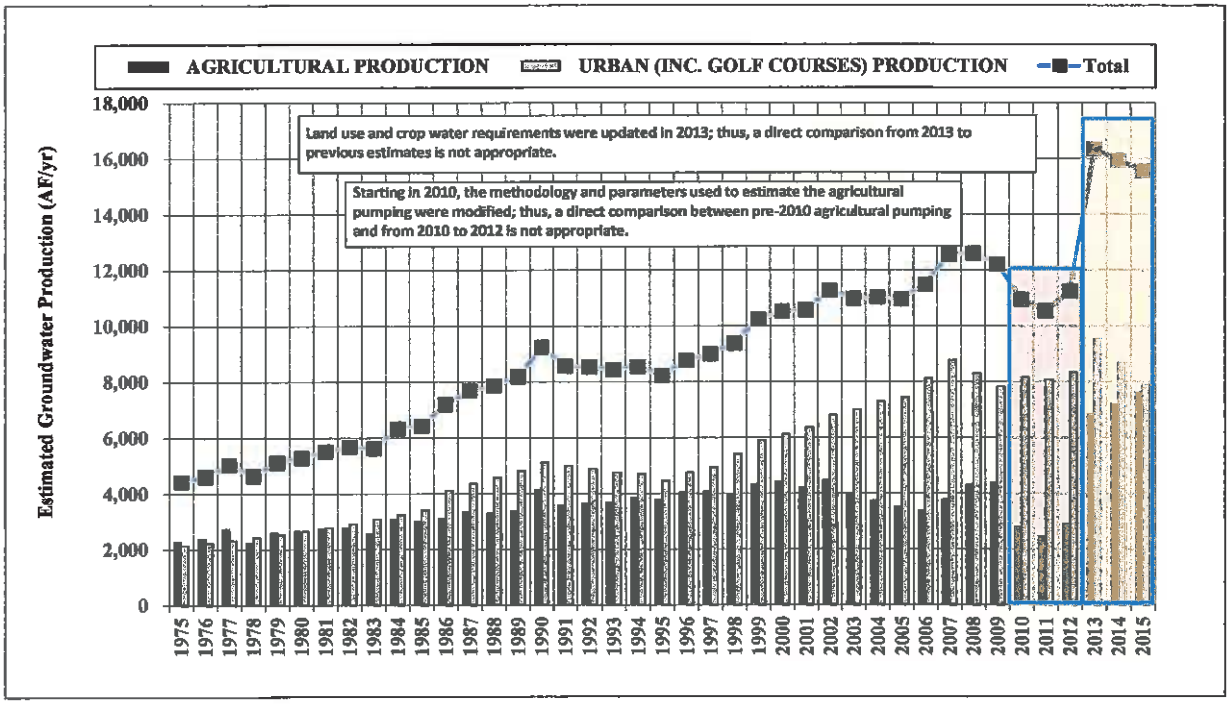


Figure 4-1. Historical NMMA Groundwater Production

5. Hydrologic Inventory

The hydrologic inventory accounts for the volumes of water that flow in to and out of the aquifers in the NMMA resulting in the change in storage. A conceptual schematic depicts the inflows and outflows to the aquifers underlying the NMMA (Figure 5-1). The hydrologic inventory can be formalized in the following equation:

$$\text{Change in Storage } (\Delta S) = \text{Inflow} - \text{Outflow}.$$

The components of the 2015 hydrologic inventory are presented and discussed in the following sections. The primary sources of inflow are groundwater (i.e., subsurface flow across the boundaries of the NMMA) inflow, rainfall, wastewater, and return flow. The primary outflows are groundwater production and groundwater outflow. Supplemental Water is also discussed as a potential future source of inflow.

6.1.1. Results from Key Wells

Individual hydrographs were prepared for the key wells (Figure 6-1, Figure 6-2). These eight wells are also used to calculate the Key Wells Index. Following four dry years, groundwater elevations sometime in 2015 were below sea level in four key wells and at historically low elevations in three wells with periods that extend several decades. Groundwater elevations in the South-East and North-West portions of the NMMA have generally declined since about 2000, even though the rate of decline has been negligible at times. And, following the last four dry years, groundwater elevations have continued to decline sharply in a few wells (e.g., wells 11/35-22C2 and -25F03 [Figure 6-1]) and wells 11/35-8L1 and -33L01 [Figure 6-2]).

6.1.2. Results from Coastal Monitoring Wells

The elevation of groundwater in the coastal monitoring wells is very important because it is required to determine whether there is an onshore or offshore gradient to the ocean. Groundwater levels in the 12C and 36L sets of nested coastal wells reached historical lows during 2015 (Figure 6-3, Figure 6-4).

6.1.3. Groundwater Contours and Pumping Depressions

Groundwater elevation data representing water levels in the deeper principal aquifers were plotted on separate maps for Spring and Fall of 2015 and contoured by hand. Groundwater elevation contours were constructed for both Spring and Fall of 2015 so that seasonal high and low groundwater elevation conditions could be analyzed (Figure 6-5, Figure 6-6).

Spring 2015 groundwater elevations in the western half of the NMMA were lower in value, as compared to Spring 2014, while elevations in the southeastern portion of the NMMA were similar in value. Likewise, Fall 2015 groundwater elevations throughout the NMMA are similar in value to those in Fall 2014. The pumping depression within the inland portion of the NMMA continues to be present in both Spring and Fall 2015 groundwater elevation contours (Figure 6-5, Figure 6-6).

The groundwater contours along the eastern portion of the NMMA are sub-parallel to the eastern NMMA boundary indicating flow southwest into the NMMA. Recharge from rainfall and seepage from adjacent older sediments along and to the east of the NMMA boundary may be contributing to the southwest flow in the NMMA. Additionally, the Los Berros Creek bed is comprised of shallow alluvium and in places in contact with the Paso Robles formation. This suggests the Los Berros Creek may be a source of local recharge along the northern boundary of the NMMA.

6.1.4. Groundwater Gradients

Groundwater gradient direction and magnitude can be calculated directly from the groundwater elevation contour maps; however, numerical computations are not presented herein (Figure 6-5, Figure 6-6). The discussion of gradients is separated into coastal gradients that could affect potential seawater intrusion and gradients to/from adjacent management areas.

Coastal Gradients

Similar to 2014, Spring 2015 contours show a general flattening of groundwater gradients in the northwestern portion of the NMMA. There is only a small difference in groundwater elevation between the coastal plain of the NCMA, the coastal portion of the NMMA, and the pumping depression in the central portion of the NMMA. In Fall 2015 the divide between the pumping depression and the coastal

wells directly to the west is largely absent, creating a groundwater gradient that is landward from the coast.

The groundwater divide that historically separated the coastal area from inland areas was a transient feature formed because of the inland pumping depression. Although groundwater elevations at the southern coastal monitoring wells are above those defined for water shortage conditions, having such a landward gradient from coastal to inland increases the potential for seawater intrusion. This condition is not prudent for the long-term and will continue to be monitored carefully.

Gradients between Adjacent Management Areas

The groundwater elevation contours between the NMMA and the NCMA are near or below sea level, while a small groundwater high is present between the areas in Fall 2015. As discussed in previous Annual Reports, the groundwater divide that historically existed between the two management areas might be in part related to recharge from Los Berros Creek – during dry years, this recharge is significantly reduced.

The groundwater gradient along the southern boundary of the NMMA creates flow into the NMMA from the SMVMA (Figure 6-5, Figure 6-6). This gradient is indicative of a regional flow direction from the Santa Maria River to the NMMA boundary. Thus, the groundwater elevation beneath the river represents a boundary, where groundwater flows toward the NMMA north of the river and into the main Santa Maria basin south of the river. This pattern of gradients suggests that the Santa Maria River is a source of supply to both management areas. If the deep aquifers are confined in the area between the river and the NMMA boundary, then recharge from the river to these aquifers must be largely occurring up-gradient in places where no confining conditions exist.

6.2. ***Groundwater Quality***

Water quality is a concern for all groundwater producers, although the specific concerns vary by water use. Water quality is somewhat different in different portions of the NMMA because:

- the source of recharge varies for different portions of the aquifer system,
- groundwater can develop different mineral signatures from the rock it flows through, and
- percolation of surface water can mobilize constituents of concern and carry these into the aquifers.

Water quality conditions in the NMMA during calendar year 2015 were relatively unchanged from 2014. The following sections describe coastal water quality and inland water quality conditions.

6.2.1. Results of Coastal Water Quality Monitoring

Quarterly coastal water quality monitoring within the NMMA boundary is currently limited to a single group of monitoring intervals at well 11N/36W-12C1, -12C2, and -12C3, but the TG is also aware of published data for coastal water quality conditions in the NCMA, at well 12N/36W-36L1 and -36L2. Limited historical water quality data are also available for other coastal monitoring wells to either side of the NMMA. Most chloride concentrations in the coastal wells are less than 100 mg/L, and do not show evidence of significant change over time (Figure 6-7). Coastal water quality monitoring at 11N/36W-12C1, -12C2 and -12C3 in 2015 also shows consistent results with respect to other common water quality characteristics such as TDS and electrical conductivity (specific conductance; Figure 6-8). Values for

State of California
The Resources Agency
Department of Water Resources
Southern District

WATER RESOURCES OF THE ARROYO GRANDE - NIPOMO MESA AREA

SOUTHERN DISTRICT REPORT 2002

Gray Davis
Governor
State of California

Mary D. Nichols
Secretary for Resources
The Resources Agency

Thomas M. Hannigan
Director
Department of Water Resources

NIPOMO COMMUNITY SERVICES DISTRICT

could occur.

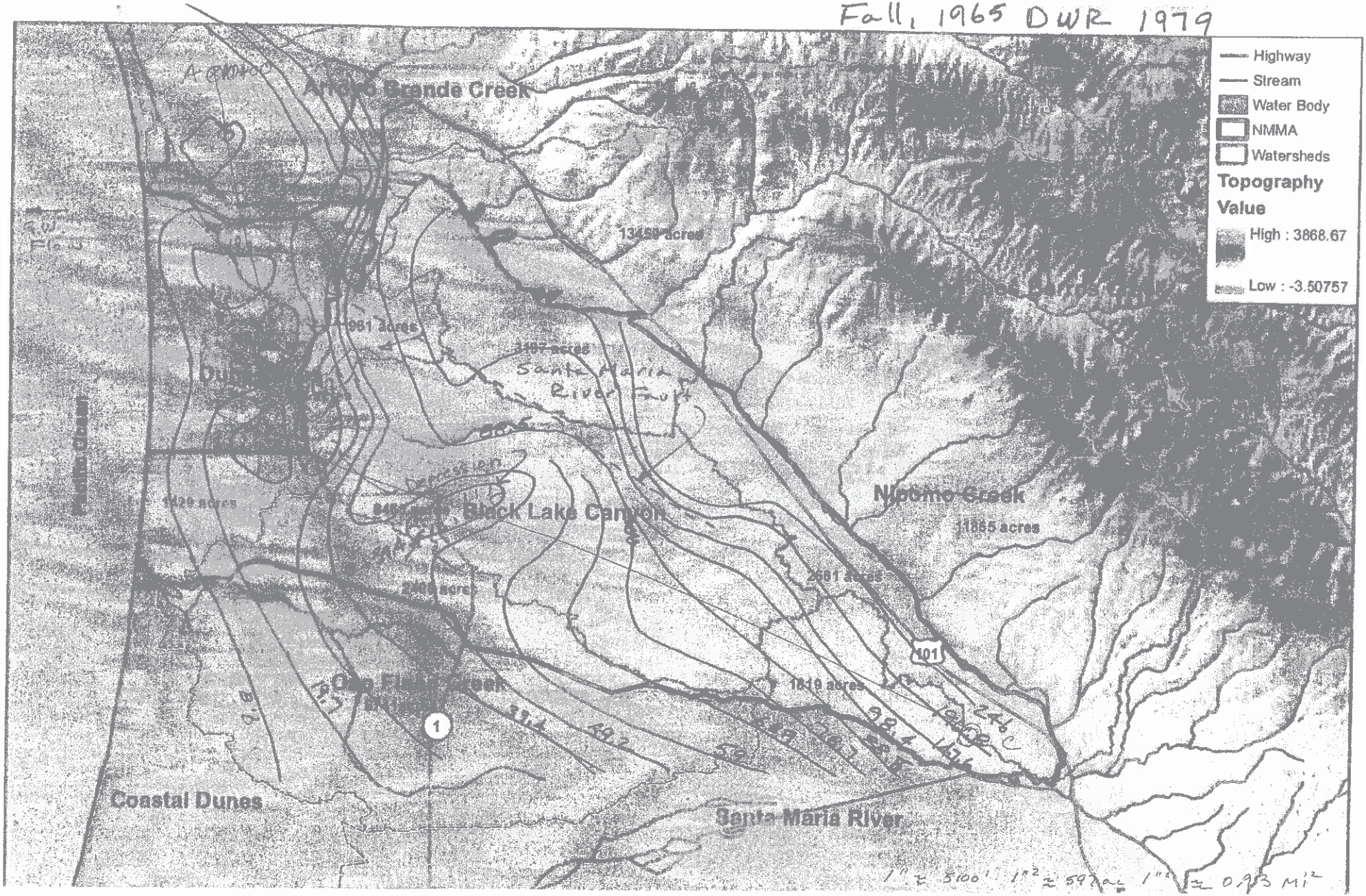
In Nipomo Mesa, the projected increase in urban extractions is the major factor contributing to projected deficiencies in 2010 and 2020. Reductions in subsurface outflows to the ocean and to Tri-Cities Mesa - Arroyo Grande Plain and increased subsurface inflow from Santa Maria Valley will likely offset the future negative imbalances between inflow and outflow and reduce the amount of loss in groundwater in storage. Subsurface outflow to the ocean was only 600 AF in the base period and reductions in this outflow would need to be small because of the concern regarding sea water intrusion.

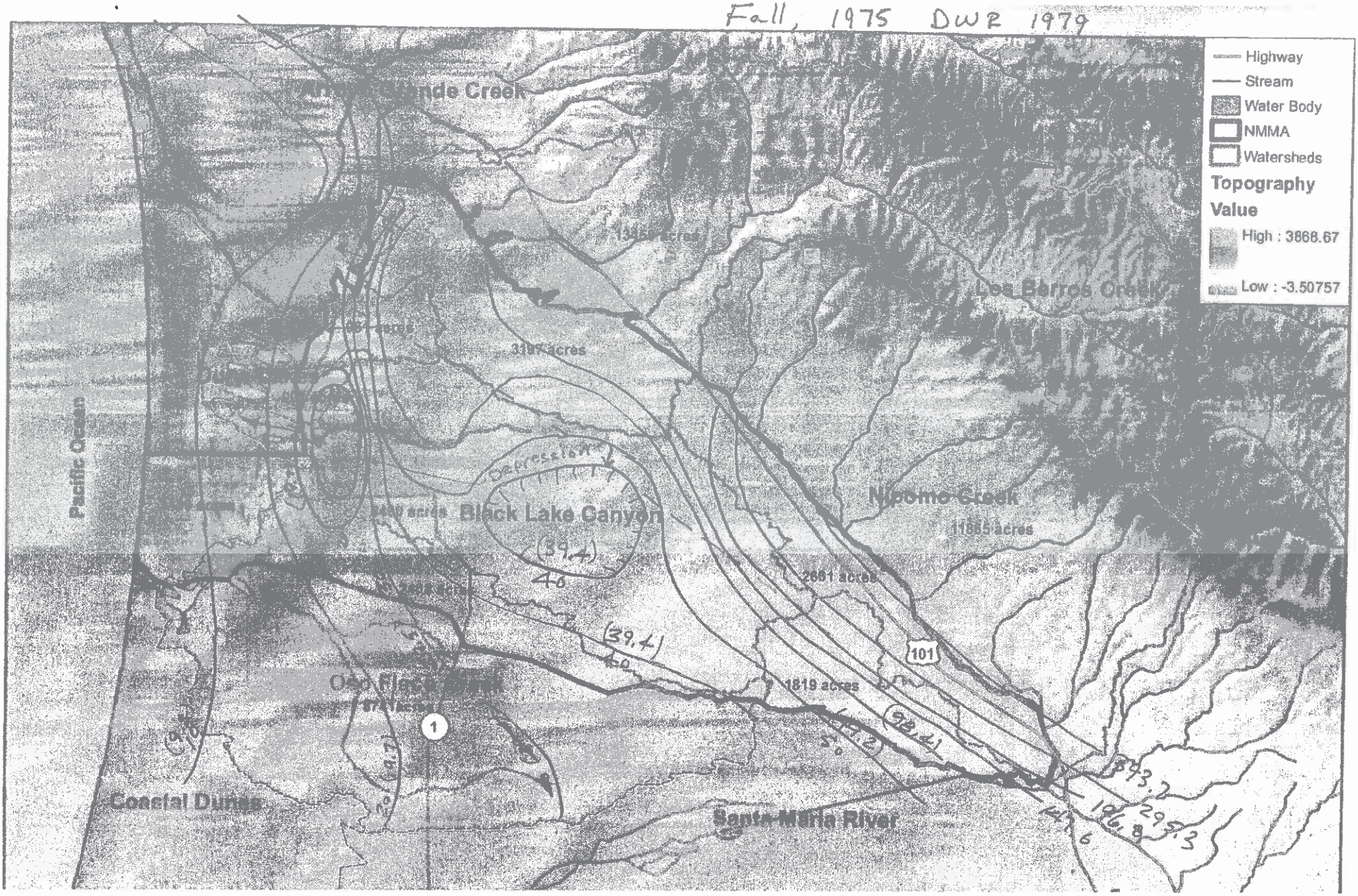
In Santa Maria Valley, the projected deficiencies are not the result of future increased extractions (extractions were projected to increase only 200 AF between 1995 and 2020). Projected subsurface outflows in 2010 and 2020 are substantial (6,200 AF to the ocean and 2,300 AF to Nipomo Mesa) from this portion of the basin. Potential future deficiencies will likely be offset by reduced subsurface outflow to the ocean, which accounts for about 30 percent of the total outflow in the future. However, if in the future, subsurface outflow to Nipomo Mesa increases above the projected amount, water budgets for this portion of the basin could show larger deficits (loss of groundwater in storage). The same concern regarding sea water intrusion applies. In addition, restoration and maintenance of the storage capacity of Twitchell Reservoir could improve future recharge amounts from the Santa Maria River to the groundwater basin.

The dependable yield of a groundwater basin is the average quantity of water that can be withdrawn from the basin over a period of time (during which water supply conditions approximate average conditions) without resulting in adverse effects, such as sea water intrusion, subsidence, permanently lowered groundwater levels, or degradation of water quality. Dependable yield is determined for a specified set of conditions and any changes in those conditions require a new calculation.

For this study, estimates of dependable yield for each division of the main groundwater basin were determined from the hydrologic equation for the 1984 through 1995 base period and for the 1975 through 1995 study period. Because subsurface flows to the ocean could be reduced and subsurface flows between portions of the basin increased or decreased, the dependable yield is given as a range. Thus, the dependable yield is estimated to range between 4,000 and 5,600 AF for the Tri-Cities Mesa - Arroyo Grande Plain portion of the basin, between 4,800 and 6,000 AF for the Nipomo Mesa portion of the basin, and between 11,100 and 13,000 AF for the Santa Maria Valley portion of the basin. These estimates of dependable yield for each portion of the main groundwater basin are more meaningful if they are considered as a unified whole because the estimates are directly affected by the amounts and nature of the subsurface flows occurring between portions of the basin. Thus, the dependable yield for the main Santa Maria Basin within San Luis Obispo County ranges between 19,900 and 24,600 AF.

Overdraft is defined as the condition of a groundwater basin or subbasin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years, during which the water supply conditions approximate average conditions. Droughts or


Fall, 1965 DWR 1979
Highway
Stream
Water Body
NMMA
Watersheds
Topography
Value
High : 3868.67
Low : -3.50757
Arroyo Grande Creek
13459 acres
3497 acres
Santa Maria River Fault
Black Lake Canyon
Nipomo Creek
11385 acres
2601 acres
1429 acres
2436 acres
1819 acres
101
1
Coastal Dunes
Santa Maria River
1" = 5100' 1"² = 597 ac 1"² = 0.93 Mi²


Fall, 1975 DWR 1979
Highway
Stream
Water Body
NMMA
Watersheds
Topography
Value
High : 3868.67
Low : -3.50757
Los Berros Creek
Nipomo Creek
11865 acres
Black Lake Canyon
2661 acres
1819 acres
3197 acres
Pacific Ocean
Coastal Dunes
Santa Maria River
101
1
(39.4)
46
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293.2
295.3
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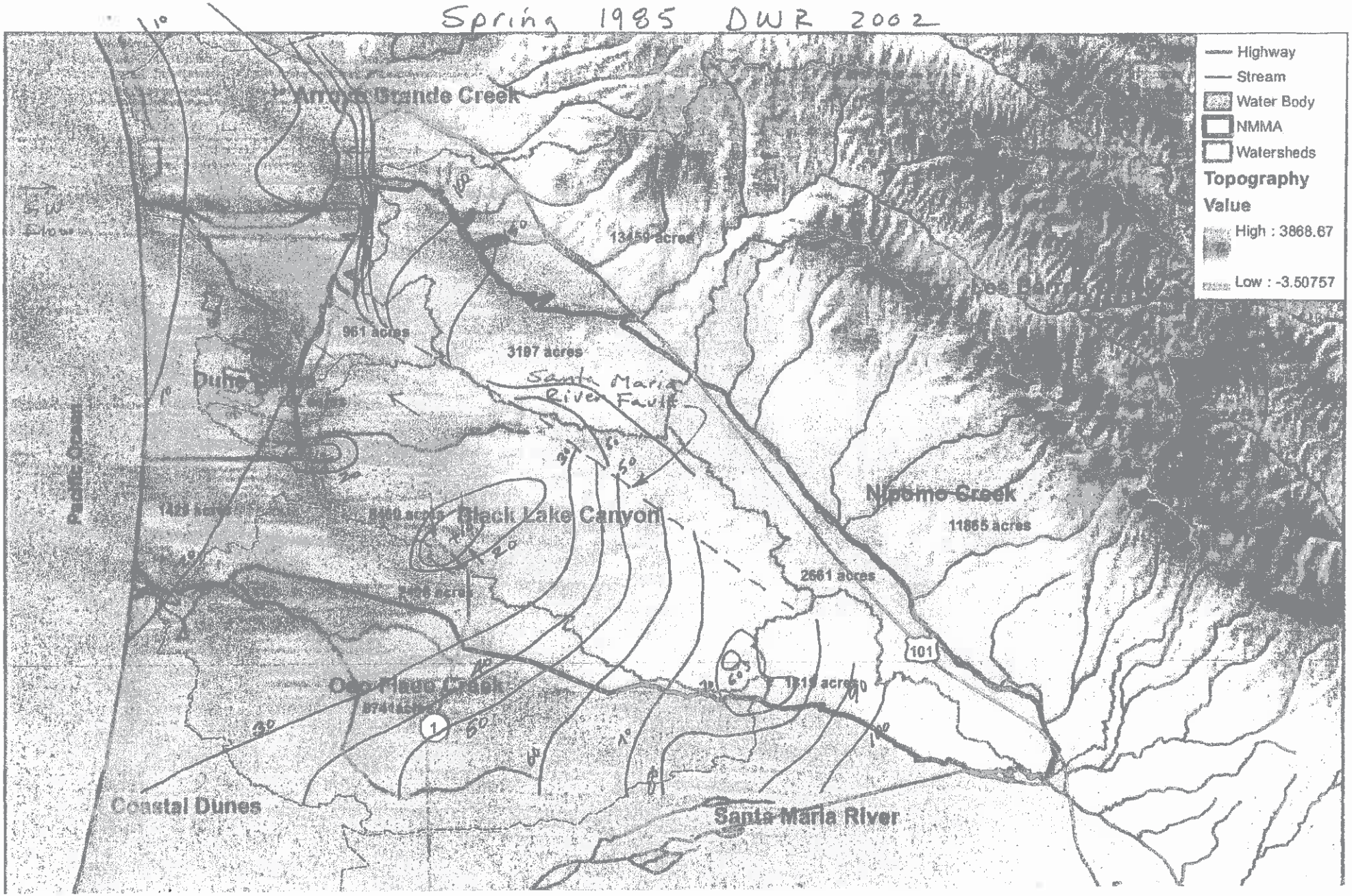
47.6


Spring 1985 DWR 2002
Arroyo Grande Creek
13450 acres
961 acres
3197 acres
Santa Maria River Fault
Dune
Black Lake Canyon
Nipomo Creek
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2661 acres
101
Coastal Dunes
Santa Maria River
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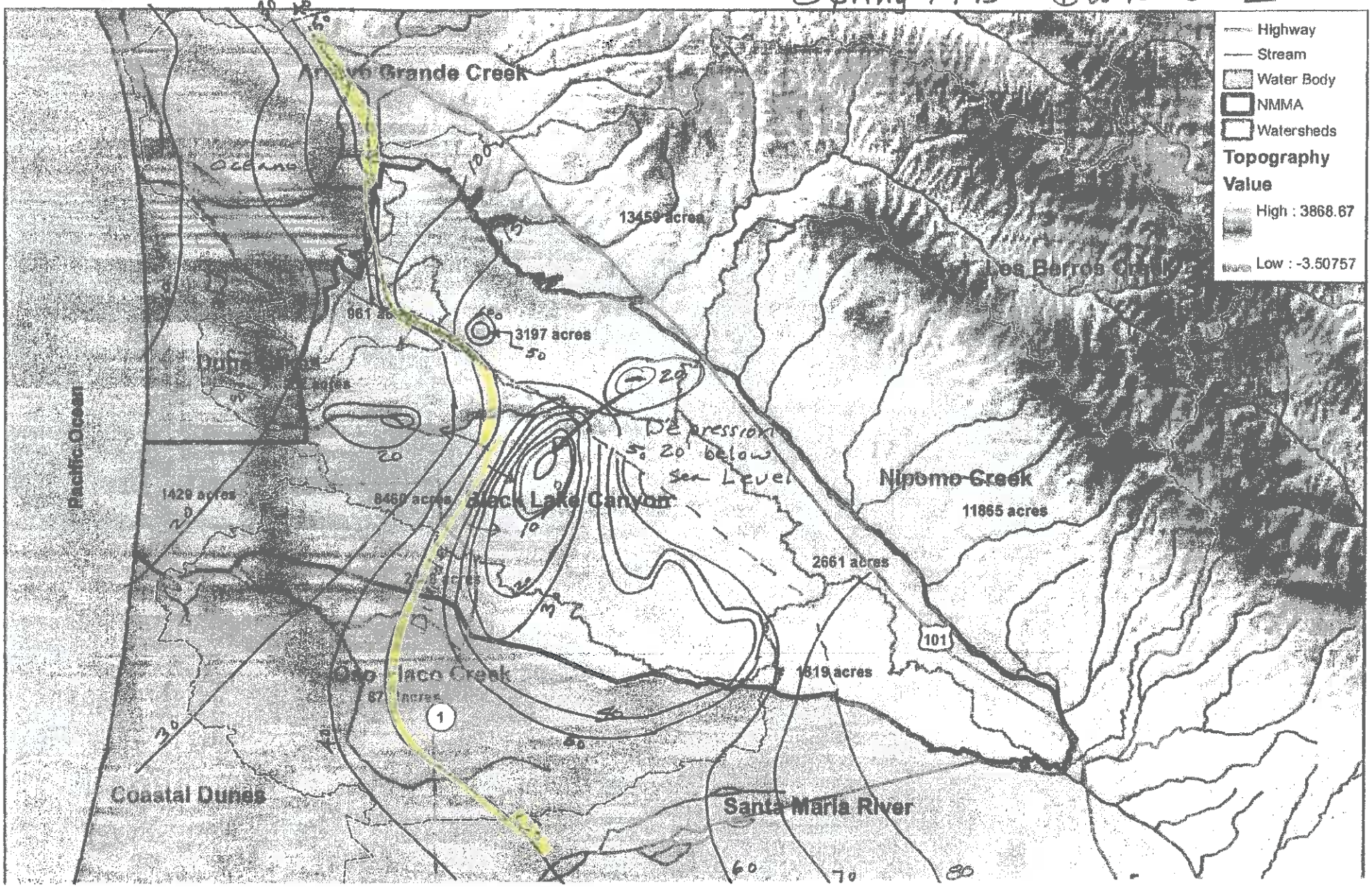
Spring 1995 DWR 2002
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Stream
Water Body
NMMA
Watersheds
Topography
Value
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Low : -3.50757
Arroyo Grande Creek
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Pacific Ocean
Depression
20' below
Sea Level
Nipomo Creek
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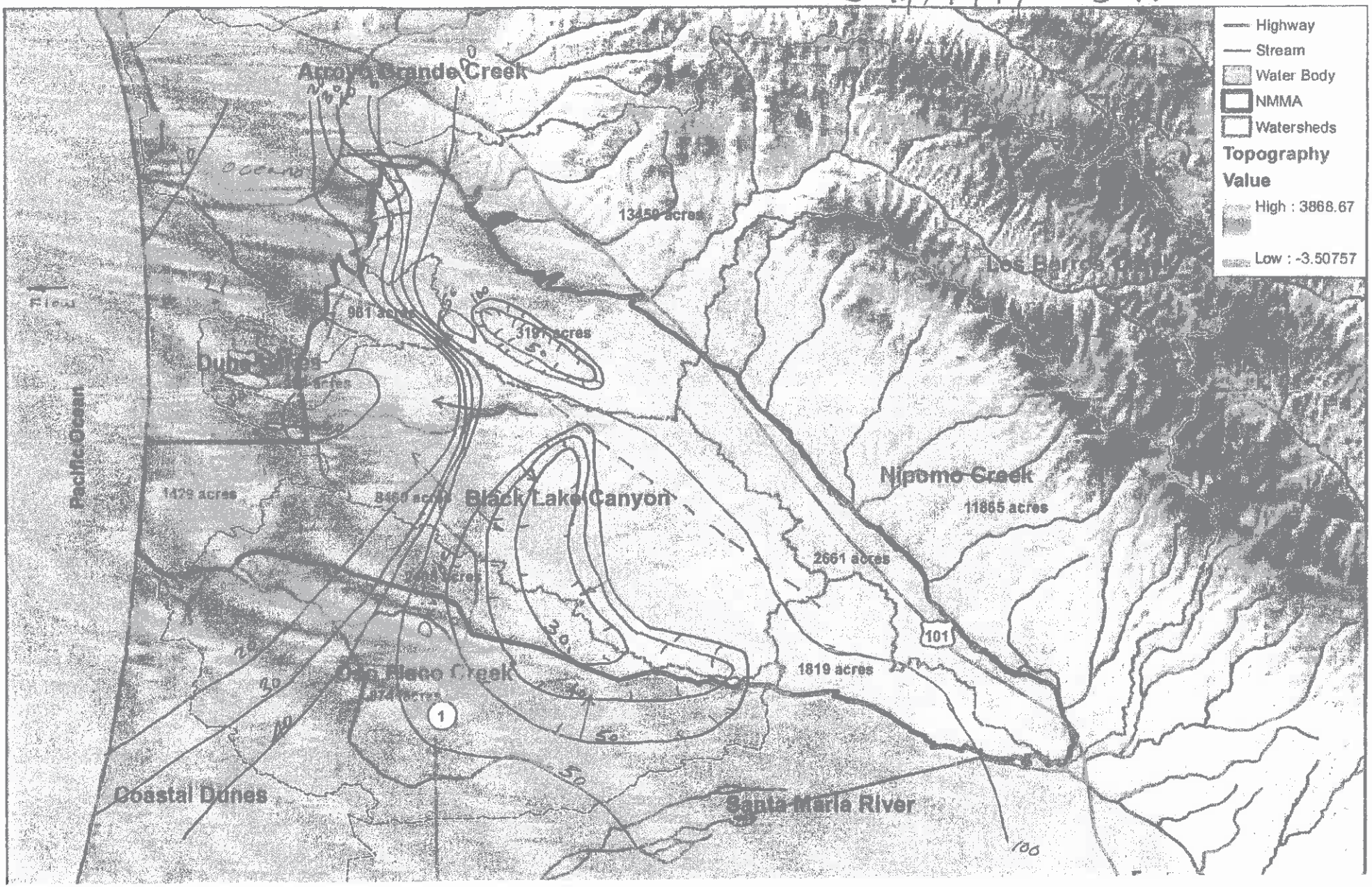
8450 acres
Oso Flaco Creek
2661 acres
101
1619 acres
Coastal Dunes
Santa Maria River


July, 1999 SAIC
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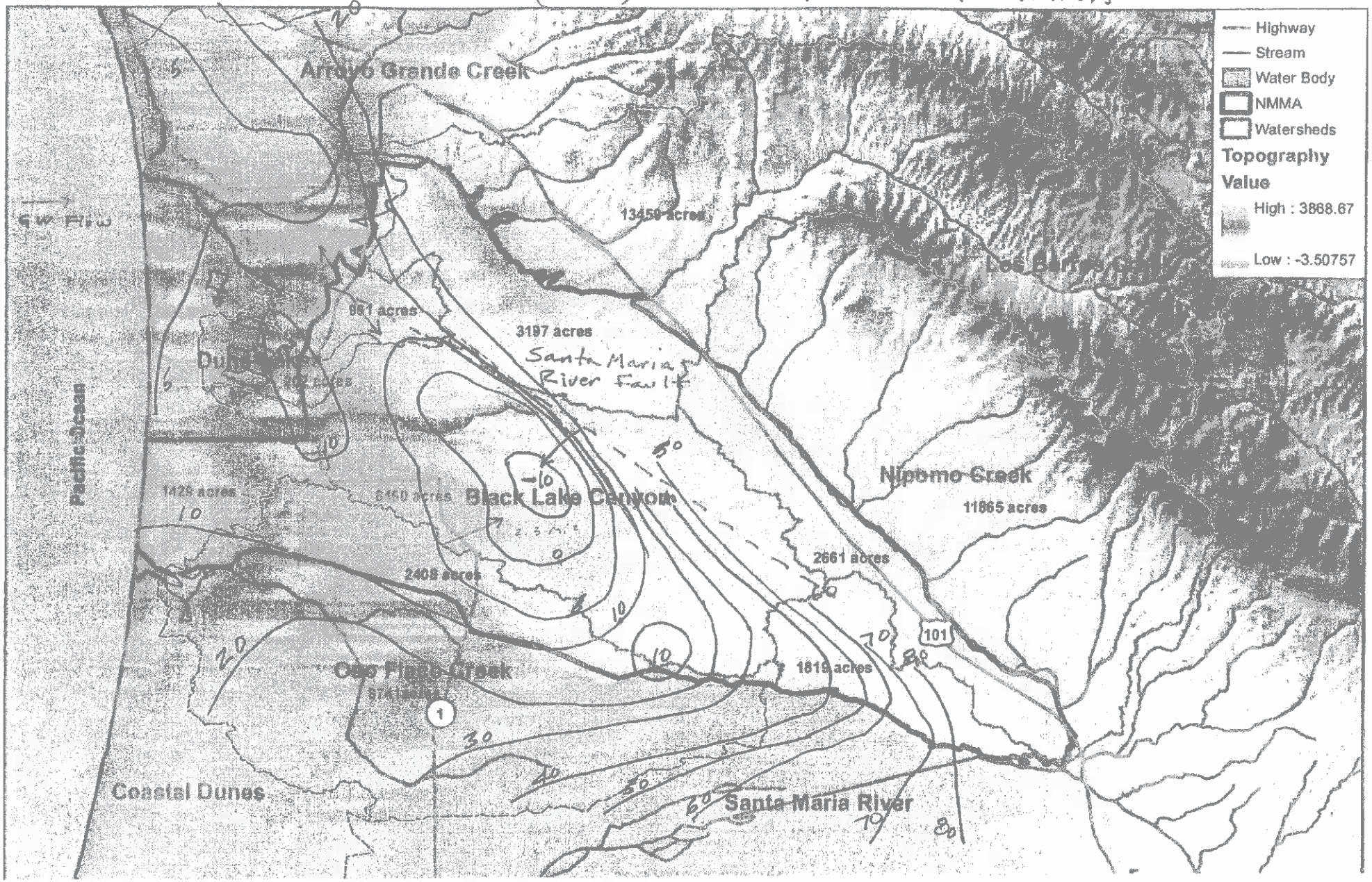
Santa Maria River
100


NCMA
(MSL)
Fall 2009 NMMA
Highway
Stream
Water Body
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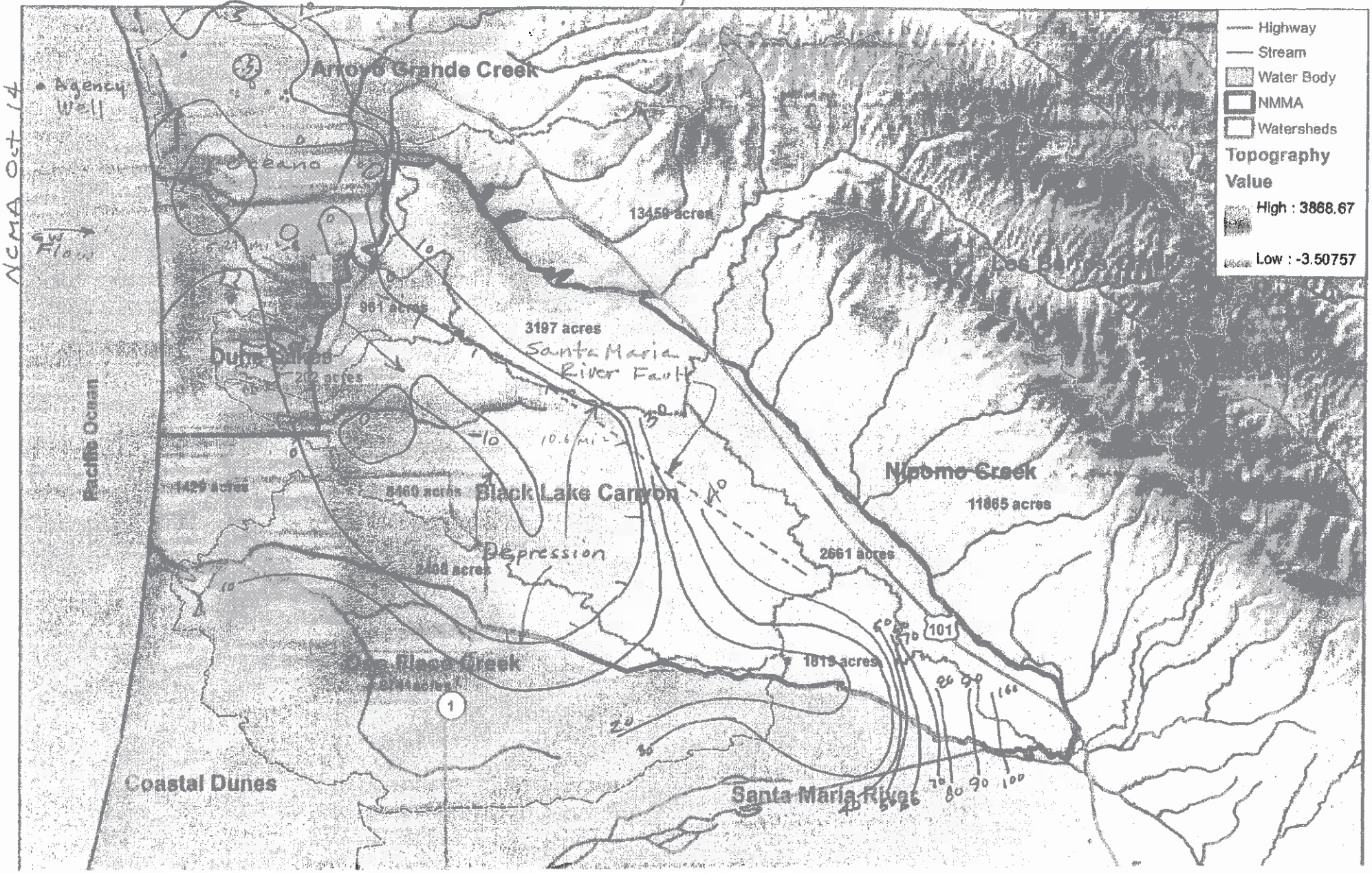
1819 acres
Santa Maria River


NAVD 88
Fall, 2014
NMMA
Highway
Stream
Water Body
NMMA
Watersheds
Topography
Value
High : 3868.67
Low : -3.50757
Arroyo Grande Creek
Agency Well
13459 acres
961 acres
3197 acres
Santa Maria River Fault
Pacific Ocean
202 acres
1429 acres
8460 acres
Black Lake Canyon
Depression
Nipomo Creek
11865 acres
2661 acres
1819 acres
101
Oso Flaco Creek
Coastal Dunes
Santa Maria River

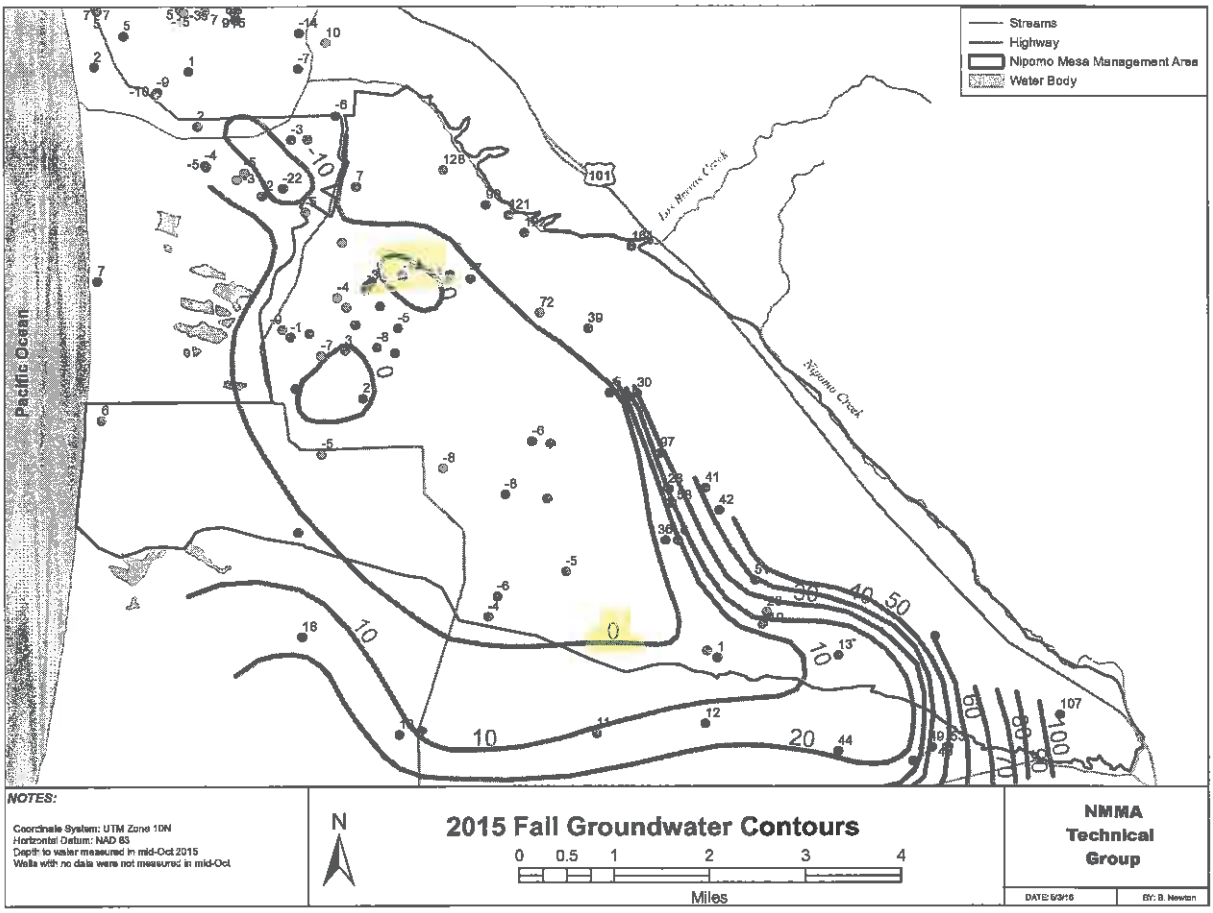


Figure 6-6. 2015 Fall Groundwater Contours

Comments on RSR draft report – Bill Garfinkel

I see a major problem with the forecast numbers used in this report. Although I am commenting on only four North Coast areas, I believe that the data used in all the areas is suspect.

Water demand data that was found in the 2014 IRWM Plan was used to predict future water use for each groundwater basin analyzed and I believe that this data is incorrect based on what is occurring.

In Table 11-1 the data for population and 2015-16 water deliveries for each community are from actual reports and I accept their validity. I also believe that individual water use for residential properties will not increase significantly in the future. Using those numbers and the forecast numbers used in the RSR it is easy to see the problems with the conclusions of the RSR.

Table II-1 – Water Purveyors Serving the Unincorporated County

Community	Water Purveyors	Approx. Population Served (2016)	2014-15 Water Deliveries[1] (AFY)	2015-16 Water Deliveries[1] (AFY)
Avila Beach Avila Valley	Avila Beach CSD Avila Valley Mutual Water Co. San Miguelito Mutual Water Co.	875 104 1,400	80.4 31.6 159.1	74.7 27.6 125.5
Cambria	Cambria CSD	6,200	367.5	412.8
Cayucos	CSA 10A Morro Rock Mutual Water Co. Paso Robles Beach Water Assoc.	1,350 2,125 2,577	96.5 94.6 123.0	91.0 91.5 121.5
Edna Valley	Golden State Water Co.	1,292	230.9	183.0
Garden Farms	Garden Farms CWD	240	45.7	36.4
Heritage Ranch	Heritage Ranch CSD	3,100	403.2	393.4
Los Osos	Los Osos CSD Golden State Water Co. S&T Mutual Water Co.	7,086 5,520 575	547.2 515.5 34.9	445.5 424.0 30.3
Nipomo	Nipomo CSD Woodland Mutual Water Co. Golden State Water Co.	12,886 1,600 4,904	2,110.1 746.6 832.2	1,773.3 732.1 625.1
Oceano	Oceano CSD	7,543	740.1	630.1
Santa Margarita	CSA 23	1,400	120.2	100.3
San Miguel	San Miguel CSD	2,400	243.3	236.3
San Simeon	San Simeon CSD	462	74.8	76.9
Shandon	CSA 16	1,260	93.2	90.2
Templeton	Templeton CSD Atascadero Mutual Water Co.	6,885 31,500	1,223.9 4,926.4	997.8 4,001.2

Source: San Luis Obispo County Flood Control and Water Conservation District, 2016
Notes:
1. July 1 through June 30. Reflects water conservation and production associated with ongoing drought conditions.

Table II-10 – San Simeon Area: Pico Creek Valley Groundwater Basin
Existing and Forecasted Water Supply and Demand

Demand	San Simeon CSD	Agriculture	Rural
FY 2015/2016 Demand (AFY)	76.9[1]	70[3]	20[3]
Forecast Demand In 15 Years (AFY)	222	97	44
Forecast Demand in 20 Years (AFY)	250	38	50
Buildout Demand (30 Or More Years) (AFY)	250[2]	10-60[3]	50[3]
Supply			
Pico Creek Valley Basin (AFY)	140	0[4]	0[4]
Arroyo de la Cruz Valley Basin	0	14[6]	18
Other GW Supplies	0	0	22
Surface Water	0	8[7]	10[7]
Total:	140	22	50
Water Supply Versus Forecast Demand	Water demand projected over 15 years will equal or exceed the estimated dependable supply.		

Sources: Water System Usage forms: July 2014 – June 2015; July 2015 – June 2016; San Luis Obispo County Master Water Report, 2012, Table 4.54; 2014 Integrated Regional Water Management Plan, Table D-13

Notes:

1. See Table II-1. Demand fluctuates due to changes in tourism. Data for agriculture and rural are from 2012.
2. Most recent master plan forecasts a build-out demand of 224 AFY, but San Simeon CSD's current build-out demand estimate is 250 AFY.
3. Agricultural and rural demand calculations do not account for livestock operations, and likely underestimates actual water demands.
4. Seventy (70) AFY of Pico Creek livestock and domestic usage was reported by Hearst Holdings Inc. to the SWRCB in June 2010.
5. Population within the San Simeon area is expected to decline slightly over the next 30 years.
6. 1,607 AFY of Arroyo De La Cruz Underflow is reported in the State Board diversion database as a permitted appropriative water right for Hearst Holdings Inc. Estimated safe basin yield is 1,244 AFY and all pumping is for agricultural or rural users.
7. Diversions from sources other than the three basins noted above total 238 AFY according to diversion reporting forms to the SWRCB from Hearst Holdings Inc. (June 2010) and the SWRCB diversion database.

Base on the approximate population figure of 462 (Table 11-1) the average water use per person calculates to be ~149 gal per person per day (very high)

Using 149 gallons per person day and the 15 year forecast of 222 acre-feet. The population would have to grow to **1,334** or an increase of 288.7%

From 2014 IRWM Plan

Urban Water District	2015	2030	
San Simeon CSD	108	222	acre-foot

Table II-11 – Cambria Area: San Simeon Valley and Santa Rosa Valley Groundwater Basins Existing and Forecasted Water Supply and Demand

Demand	Cambria CSD	Agriculture	Rural
FY 2015/2016 Demand (AFY)[1]	412.8	521	100
Forecast Demand in 15 Years (AFY)	909	996	184
Forecast Demand in 20 Years (AFY)	909	1,115	205
Buildout Demand (30 Or More Years) (AFY)	836-909[2]	1,115	205
Supply			
San Simeon Valley Basin (AFY)	610[3]	11	2
Santa Rosa Valley Basin (AFY)	199[4]	301	55
Villa Valley	0	112	21
Other GW Supplies	0	691	127
Other Surface Supplies	600[5]	0	0
SWRCB-WPA 1	0	0	0
Recycled Water	100	0	0
Total Supply:	1,509	1,115	205
Water Supply Versus Forecast Demand	Water demand for the basins projected over 15 years will likely equal or exceed the estimated dependable supply.[6]		

Sources: Water System Usage forms: July 2012 – June 2013; July 2013 – June 2014; San Luis Obispo County Master Water Report, 2012, Table 4.55, Cambria CSD 2015; 2014 Integrated Regional Water Management Plan, Tables D-15 and D-16.

Notes:

1. See Table II-1.
2. Cambria CSD Urban Water Management Plan Tables 3-9 and 3-12. The upper range represents estimated demand plus 8% unaccounted water (distribution system and meter losses). The lower range represents demand totals with no system losses.
3. State Board allows Cambria CSD 1,230 AFY maximum extraction and 370 AF dry season extraction. California Coastal Commission limits Cambria CSD total diversion from both San Simeon and Santa Rosa Creeks to 1,230 AFY. The table uses a conservative assumption for dry-weather extractions.

Base on the approximate population figure of 462 (Table 11-1) the average water use per person calculates to be ~59.4 gal per person per day (very high)

Using 59.4 gallons per person day and the 15 year forecast of 909 acre-feet. The population would have to grow to **13,652** or an increase of 220.2%

From 2014 IRWM Plan

Urban Water District	2015	2030	
Cambria CSD	804	909	acre-foot

Table II-12 – Cayucos Area: Cayucos Valley and Old Valley Groundwater Basins Existing and Forecasted Water Supply and Demand

Demand	Morro Rock MWC	Paso Robles Beach Water Assoc.	CSA 10A	Cayucos Cemetery District	Agriculture	Rural
FY 2015/2016 Demand (AFY)[1]	91.5	121.5[1]	91.0[1]	Not provided	562	91
Forecast Demand in 15 Years (AFY)	159	203	207	17	603	124
Forecast Demand in 20 Years (AFY)	168	212	226	18	617	135
Buildout Demand (30 Or More Years) (AFY)	164-173	207-218	220-232	17-18	430-800	130-140
Supply						
Whale Rock Reservoir (Old Valley Basin)	170	222	190	18	12	3
Nacimiento Water Project	0	0	58	0	0	0
SWRCB Water Diversions	3[3]	0	0	0	0	0
Cayucos Valley Basin	0	0	0	0	49[4]	11[4]
Other GW Sources	0	0	0	0	555	122
Total Supply:	173	222	248	18	617	135
Water Supply Versus Forecast Demand	Water demand for the basin projected over a period exceeding the LOS timeframe of 20 years will not equal or exceed the estimated dependable supply. Whale Rock Reservoir allocations are sufficient to provide for forecast demand.					

Sources: Water System Usage forms: July 2014 – June 2015; July 2015 – June 2016, San Luis Obispo County Master Water Report, 2012, Table 4.56; 2014 Integrated Regional Water Management Plan, Tables D-17 and D-18.

Notes:

1. See Table II-1. Current demand data for agriculture and rural are from 2012. All data are as reported separately by purveyors in 2016. Not apportioned.
2. CSA 10A has procured 40 AFY of Nacimiento Water Project via exchange with City of San Luis Obispo for Whale Rock Reservoir water. The original Exchange Agreement provisions allowed for up to 160 AFY of NWP if necessary (80 AFY for CSA 10A, 30 AFY for Morro Rock Mutual Water Company and 50 AFY for the Bella Vista Mobile Home Park (formerly the Lewis Pollard Family Trust.
3. Only 3 AFY is diverted for a school and park irrigation, but up to 56 AFY is the permitted diversion from Little Cayucos Creek underflow. 56 AFY is part of the 600 AFY safe basin yield for the Cayucos Valley Basin. Due to water quality, the remaining 53 AFY could be used for domestic supply following treatment.
4. Estimated safe basin yield is 600 AFY and the majority of pumping is for agricultural or rural users, but a small public water system does serve a mobile home park.

Total – 320

Total - 586

Base on the approximate population figure of 462 (Table 11-1) the average water use per person calculates to be ~47.2 gal per person per day (very high)

Using 47.2 gallons per person day and the 15 year forecast of 589 acre-feet. The population would have to grow to **11,083** or an increase of 183.1%

From 2014 IRWM Plan

Urban Water District	2015	2030	
Cayucos	470	586	acre-foot

Table II-13 – Los Osos Area: Los Osos Groundwater Basin Existing and Forecasted Water Supply and Demand

Demand	Los Osos CSD	S&T Mutual Water Co.	Golden State Water Co.	Agriculture[4]	Rural
FY 2015/2016 Demand (AFY)	445.5[1]	30.3	424.0[1]	2,161	20
Forecast Demand in 15 Years (AFY)	844.6	48	1,189.9	2,984	20
Forecast Demand in 20 Years (SFY)	911	64	1,369.9	3,258	20
Buildout Demand (30 Or More Years) (AFY)	1,557[2]	75[2]	524[2]	3,258	20
Supply					
Los Osos Groundwater Basin	(3)	(3)	(3)	(3)	(3)
Other GW Resources	0	0	0	1,988	0
Total Supply:	(3)	(3)	(3)	(3)	(3)
Water Supply Versus Forecast Demand	Due to seawater intrusion and nitrate contamination, the groundwater basin remains an unreliable source to meet existing demand and water demand projected over 15 years will equal or exceed the estimated dependable supply.[4]				

Sources: Water System Usage forms: July 2014 – June 2015; July 2015 – June 2016, San Luis Obispo County Master Water Report, 2012, Table 4.58; San Luis Obispo Integrated Regional Water Management Plan, Tables D-20 and D-21.

Notes:

1. See Table II-1. Current year data for agriculture and rural are from 2012.
2. Assumes the programs recommended by the certified Basin Management Plan are implemented and buildout demand from urban uses is 2,100 AFY divided among the three water purveyors in the same proportions as 2015 demand.
3. Safe basin yield is assumed to be 3,000 AFY and assumes the programs recommended by the certified Basin Management Plan are implemented. All pumping is for urban, agricultural or rural users. Purveyors have 2,150 AFY available for their use. The remaining 850 AFY is used for agricultural irrigation, private domestic use, and golf course irrigation.
4. The 2015 Updated Basin Plan for the Los Osos Groundwater Basin assumes agricultural demand within the Plan area to be 750 AFY. For purposes of this RSR, agricultural demand is assumed to include the entire area within Water Planning Area 5 as shown on Figure D-9 on page D-25 which includes lands outside the Updated Basin Plan area.

Total – 900

Total – 2.083

Base on the approximate population figure of 13,181 (Table 11-1) the average water use per person calculates to be ~61 gal per person per day (very high)

Using 61 gallons per person day and the 15 year forecast of 2,083acre-feet. The population would have to grow to **30,507** or an increase of 231.4%

From 2014 IRWM Plan

Urban Water District	2015	2030	
Los Osos	1,895	2,083	acre-foot

Angela Ruberto

From: Debbie Peterson
Sent: Monday, February 20, 2017 7:55 PM
To:

Cc:
Subject: RE: WRAC Subcommittee - Draft 2014/2016 RMS Biennial Report Discussion

Hi Angela,

Here are my comments on the RMS Biennial Report. Please record my support for the comments made by Jim Garing. My own comments, in addition, are as follows:

P.4 County Population Table 1-1 Unincorporated Areas -

- Do future projections include Cal Poly's intent to increase enrollment by 5,000?
- Are the 1,300 new homes in Trilogy included in the figures?

P. 22. Table II-1 Water Purveyors Serving the Unincorporated County. The Black Lake and Cypress Ridge developments do not appear to be included in this list and if not included elsewhere, should be.

P. 25. Table II-2 Pismo Creek Sub-Basin should include Sentinel Peak Resources Oil Company as a user.
Nipomo Valley Sub-basin should include Trilogy, Black Lake and Philipps Oil Company (1,100 afy) as users.

Note on Pismo Creek Sub-Basin - Should be included in groundwater mapping projects sooner rather than later to gauge connectivity between Edna Valley Basin and Northern Cities Sub-Basin. This is a critical basin because of increased drilling activity of the oil company and proposed activity to increase by 400 wells. This is critical because connectivity or cross contamination caused by new drilling could contaminate the Edna and Santa Maria Basins serving 150,000 people from San Luis Obispo to Santa Maria.

Please confirm receipt of my comments and let me know if you have questions. Thanks!

Debbie Peterson

From: Ray Dienzo [rdienzo@co.slo.ca.us]
Sent: Friday, February 17, 2017 11:11 PM

Subject: RE: WRAC Subcommittee - Draft 2014/2016 RMS Biennial Report Discussion

Hi all

If you need more time and can't get your comments to us by Tuesday morning, we can still receive them and submit them by us posting them on the website. For consideration at the March 1 meeting we need to do this within 72 hours prior to the meeting to meet our Brown Act requirement.

Let us know if you will do this so we can mention it on our staff report

Angela Ruberto

From: Greg Grewal
Sent: Tuesday, February 21, 2017 9:19 AM
To: Ray Dienzo
Cc:

Subject: Re: WRAC Subcommittee - Draft 2014/2016 RMS Biennial Report Discussion

Hi all,
Pg 3, in areas where there are no purveyors, how info gathered for Los
Pg 7, #3 note @ bottom of page
About wrac members not very many rural landowners , to many buss. Interests
Pg 15, Los 3 problem only in 1 sub area that would be Estrella where paso wells are
Pg 26, safe yield is a guess !
Basin has not been quantified

Pg 27, sgma , did not change any current water law
Over liers still have priority
When did county make claim that basin critically overdrafted , basin does not meet rule .
Look at pg 72 on 2005 prior agreement
Pg 73, again perennial yield 2500 to 2900 af short not true , no mention of mark battney report , 1 ac ft per ac of grapes not 1.7 should show almost 26000 ac ft to the plus
Pg,74 who sent notice to SWRB, county won't do there job
Pg,77and 77, Atascadero sub basin has basin modified all water use meets to be removed from paso basin
Where is any info on salinas dam water this is part of north co water
Sent from my iPhone

On Feb 17, 2017, at 11:11 PM, Ray Dienzo <rdienzo@co.slo.ca.us> wrote:

> Hi all
>
> If you need more time and can't get your comments to us by Tuesday morning, we can still receive them and submit them by us posting them on the website. For consideration at the March 1 meeting we need to do this within 72 hours prior to the meeting to meet our Brown Act requirement.
>
> Let us know if you will do this so we can mention it on our staff report
>
> I've requested to Brian Pedrotti to grant us more time perhaps April 7. But I will let you know if we are granted the extension.
>
> I hope this helps.
>
> Regards,
> Ray