TO: BOARD OF DIRECTORS

FROM: DON SPAGNOLO
GENERAL MANAGER

DATE: OCTOBER 21, 2010

AGENDA ITEM
E-3

OCTOBER 27, 2010

DRAFT 2010 URBAN WATER MANAGEMENT PLAN UPDATE

ITEM

Consider revised Public Review Draft 2010 Urban Water Management Plan Update and authorize circulation [APPROVE CIRCULATION OF THE DRAFT PLAN UPDATE].

BACKGROUND

On September 30, 2009, the Board of Directors selected Water Systems Consulting (WSC) to prepare the 2010 Urban Water Management Plan (UWMP) Update. On December 9, 2009, WSC presented the project scope and schedule to the Board. The Board authorized an addition to the Project Scope of Work to include the computation of the baseline per capita water use within the District.

On April 14, 2010, WSC presented the development of the Demand Database (Work Product #1) and computation of District per capita water use to the Board. WSC then developed two Administrative Drafts of the 2010 UWMP Update before providing a Public Review Draft of the 2010 UWMP Update that was dated September 16, 2010. The Public Review Draft was reviewed at the October 1, 2010 Special Board meeting and the Board provided numerous comments on the initial Public Review Draft. The Board requested the plan be revised prior to circulation to the County and other interested parties.

Attached is the revised Public Review Draft 2010 UWMP Update. The plan needs to be circulated to the County, interested parties and the public for comment before the plan can be adopted by the Board. The public hearing and consideration of adoption of the 2010 UWMP Update is tentatively scheduled for the January 26, 2011 Board meeting.

FISCAL IMPACT

The Project is included in the FY 10-11 Budget. The 2010 UWMP Update expenditure is within budget.

RECOMMENDATION

Staff recommends that the Board review the revised Public Review Draft and direct staff to circulate the Draft 2010 Urban Water Management Plan Update as required.

ATTACHMENTS

- Draft 2010 Urban Water Management Plan Update dated October 21, 2010

Nipomo Community Services District

2010 Urban Water Management Plan
Public Review Draft

Prepared Under the Responsible Charge of:

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California R.C.E. 63004, Expires 6/30/2012

10/21/2010

WSC
Water Systems Consulting, Inc.

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GLOSSARY OF TERMS AND ACRONYMS

AB 2882- Assembly Bill No. 2882

ACT- Active

Adjudication- the hearing and settlement of the Santa Maria Groundwater Basin Litigation

afy- acre feet per year

ATS- Automatic Transfer Switch

Basin- Santa Maria Groundwater Basin

BMP- Best Management Practice

Boyle Engineering Corporation- Is now known as AECOM

County- San Luis Obispo County

CUWCC- California Urban Water Conservation Council

District- Nipomo Community Services District

DMM- Demand Management Measure

DWR- Department of Water Resources

ETo- Evapotranspiration

GIS- Geographic Information System

gpm- gallons per minute

GSWC- Golden State Water Company; formerly Southern California Water Company

Guidebook- Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan , Department of Water Resources 2005

HCF- Hundred Cubic Feet

HDR- HDR, Inc. is a consultant

IRWMP- Integrated Regional Water Management Plan

Judgment- the Stipulation for the Santa Maria Groundwater Basin Litigation

LAFCO- San Luis Obispo County Local Agency Formation Commission

MFR- Multi-Family Residential

MG- Million Gallons

mg/L- milligrams per Litre

msl- mean sea level

NCMA- Northern Cities Management Area

NCSD- Nipomo Community Services District

NMMA- Nipomo Mesa Management Area

NMMA TG- Nipomo Mesa Management Area Technical Group

NMWCA- Nipomo Mesa Water Conservation Area

OS- Out of Service

Per Capita TM- Baseline Daily Per Capita Water Use Technical Memorandum

Response Plan- Response Plan for Potentially Severe and Severe Water Shortage Conditions

RWC- Rural Water Company

SAIC- Science Applications International Corporation

Santa Maria Groundwater Basin Litigation- *Santa Maria Valley Water Conservation District vs. City of Santa Maria, et al.* Case No. 770214

SB 7- Senate Bill x 7-7Settlement- the effects and implications of the Stipulation

SFR- Single-Family Residential

SLOCOG- San Luis Obispo Council of Governments

SLO-PD- San Luis Obispo County Planning and Development

SMVMA- Santa Maria Valley Management Area

SOI- Sphere of Influence

Stipulation- the settlement of the Santa Maria Groundwater Basin Litigation

SWP- California State Water Project

UWMP- Urban Water Management Plan

UWMP Act- Urban Water Management Planning Act

WIP- Santa Maria Waterline Intertie Project

WIP FEIR- Santa Maria Waterline Intertie Project Final Environmental Impact Report

WMWC- Woodlands Mutual Water Company

Work Product 1- Work Product 1 Demand Database Technical Memorandum

WSA- Water Supply Assessment

WSC- Water Systems Consulting, Inc.

1 INTRODUCTION

This report comprises the 2010 Urban Water Management Plan (UWMP) update for the Nipomo Community Services District (NCSD or the District). NCSD is located in Nipomo, CA, an unincorporated community in Southern San Luis Obispo County. The District serves portions of the Nipomo community and the greater Nipomo Mesa. NCSD is an independent Special District formed and operated pursuant to Government Code §61000 et seq. NCSD provides water, wastewater, and solid waste services, as well as landscape maintenance, street lighting, and drainage services to its customers pursuant to Government Code §61600(a), (b), and (c). NCSD does not have land planning authority, which is retained by the County of San Luis Obispo; however, County land use planning authority is subordinated to resource limitations such as water and sewer capacity as established by the NCSD.

As a part of the California Water Code, the California Urban Water Management Planning Act (UWMP Act) requires all urban water suppliers with more than 3,000 connections or distributing more than 3,000 acre feet per year (afy) to complete an UWMP every five years ending in '5' and '0'. The UWMP Act is administered by the California Department of Water Resources (DWR), who is responsible for developing guidance for preparation of the UWMPs, reviewing the submitted plans for completeness, compiling the data for statewide and regional analysis, and publishing the documents online for public access. In 2009 NCSD produced about 2,700 afy of water and had 3,947 connections. NCSD adopted its first UWMP in January 2004. Since the first UWMP in 2004, there has been one update adopted by NCSD's Board of Directors on January 25, 2006.

This UWMP update was prepared based on guidance from DWR's *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* (Guidebook) (1), DWR SB x 7-7 (SB 7) public listening sessions, the Public Draft of *Urban Water Use Target Technical Methodologies* (2) prepared by DWR, and the 2005 UWMP DWR Review Sheets (Appendix F).

The 2010 UWMPs are due July 1, 2011. Usually, UWMPs are due on December 31 of years ending in 0 and 5, but a 6-month extension has been granted for submittal of the 2010 UWMPs to provide additional time for water suppliers to address the SB 7 requirements. The 2010 UWMP Draft Guidebook to support water suppliers in UWMP preparation will be available in November 2010 and the final Guidebook will be available in January 2011. DWR's tentative 2010 UWMP schedule is summarized in Table 1.

Table 1. Preliminary Schedule for DWR's 2010 UWMP Guidebook Update

Date	Event/Task
October 2010	Preliminary Guidebook released
November 2010	Initial workshops
January 2011	Amended Guidebook released
January/February 2011	Additional workshops
July 1, 2011	Submittal to DWR of UWMPs

At the direction of NCSD's Board of Directors, this report was produced before DWR's 2010 Guidebook was available, due to urgent supply conditions and significant changes in the District's water management plans since 2005. According to DWR, the 2010 Guidebook "...is being reformatted and updated to reflect changes in the law since 2005." Since this report addresses all updates to the UWMP Act since 2005 (see Table 2), the updated Guidebook is not expected to cause any material revisions.

According to the 2005 Guidebook, "As a general rule, DWR reviewers will consider a plan complete if it meets the criteria listed in the Review Sheets" (1). A Review Sheet checklist is provided in Appendix F. Table 2 summarizes changes to the UWMP Act since 2005 that have been addressed in this UWMP.

1.1 PURPOSE

The UWMP is a valuable planning document used for multiple purposes:

- Meets a statutory requirement of the California Water Code
- Provides a key source of information for Water Supply Assessments (WSAs) and Written Verifications of Water Supply
- Supports regional long-range planning documents including City and County General Plans
- Provides a standardized methodology for water utilities to assess their water resource needs and availability
- Serves as a critical component of developing Integrated Regional Water Management Plans (IRWMPs).

Table 2. Summary of Changes in the UWMP Act since 2005

New / Revised Water Code Section Number	Summary of Changes	UWMP Approach
10631.1	Demand projections must include projected water use for single-family and multi-family residential housing needed for lower income households.	Values are estimated based on NCSD customer data and the County of San Luis Obispo's Housing Element (Section 3.1.1).
10631.5	This section includes additional policies and procedures for determining an urban water supplier's eligibility for State grants and loans considering its implementation of the Demand Management Measures (DMMs) described in Section 10631.	No impact to this UWMP.
10631.7	This section requires DWR to convene an independent technical panel to provide information and recommendations to DWR and the Legislature on new DMMs, technologies and approaches.	No current impact to this UWMP, however DMMs for subsequent years could change depending upon input from the technical panel.
10644 (c)	This section requires DWR to report to the legislature and DMM technical panel those DMMs that achieve water savings significantly above the levels established by DWR.	No impact to this UWMP.
Part 2.55, commencing with Section 10608 (Senate Bill x 7-7)	Requires all water suppliers to achieve a reduction in per capita water use of 20% by December 31, 2020, with an interim target of 10% reduction by December 31, 2015.	This UWMP includes estimates of: 1) baseline daily per capita water use; 2) urban water use target; 3) interim urban water use target; 4) compliance daily per capita water use; and 5) bases for determining the estimates, with references to supporting data (see Appendix A).

1.2 PUBLIC INVOLVEMENT

To fulfill the requirements of Water Code Section 10642 of the UWMP Act, NCSD made the draft 2010 UWMP available for public review and held a public hearing on January 26, 2010. In addition, NCSD maintained the draft UWMP on its website from September 22, 2010, to XXX, and maintained a hardcopy at its offices from September 22, 2010, to XXX.

1.3 AGENCY COORDINATION

NCSD coordinated with multiple neighboring and stakeholder agencies in the preparation of this UWMP. The coordination efforts were conducted to: 1) inform the agencies of the activities of the District; 2) gather high quality data for use in developing this UWMP; and 3) coordinate planning activities with other related regional plans and initiatives. The coordination activities conducted by the District in preparation of this plan are summarized in Table 3.

Table 3. Agency Coordination

Agency	Participated in developing the plan	Commented on the draft	Attended public meetings	Contacted for assistance	Sent a copy of the draft plan	Sent a notice of intention to adopt	Notice of Plan Availability	Not Involved / No Information
All Seasons Flowers								
Ball Tagawa Growers								
Blacklake Village Master Association								
California Department of Water Resources		X		X	X	X		
Callender Water Association								
Central Coast Water Authority								
City of Santa Maria				X	X	X		
Clearwater Nursery								
County of San Luis Obispo Department of Agriculture								
County of San Luis Obispo Planning				X	X	X		
County of San Luis Obispo Public Works				X	X	X		
Cuyama Lane Water Co.								
Golden State Water Company					X	X		
Greenhheart Farms								
Greg Nester Construction Development								
Heritage Lane Mutual Water Company								
Hetrick Water Co.								
Home Builder Association of the Central Coast								
Kirk Consulting/ Rob Rossi								
La Colonia Water Association								
La Mesa Water Co.								
LAFCO				X	X	X		
Lucia Mar Unified School District								

Agency	Participated in developing the plan	Commented on the draft	Attended public meetings	Contacted for assistance	Sent a copy of the draft plan	Sent a notice of intention to adopt	Notice of Plan Availability	Not Involved / No Information
Mesa Mutual Water Co.								
Nipomo Mesa Management Area Technical Group				X	X	X		
Northern Cities Management Area Technical Group					X	X		
Rural Water Company					X	X		
San Luis Obispo Coast Keeper								
San Luis Obispo County				X	X	X		
San Luis Obispo County Flood Control and Water Conservation District Water Resources Advisory Committee (WRAC)								
Santa Maria Valley Management Area								
SLOCOG				X	X	X		
South County Advisory Council								
True Water Supply								
Woodlands Mutual Water Company					X	X		
Woodlands Rural Mutual Water Company								

1.4 SERVICE AREA DESCRIPTION

The Nipomo Community Services District (NCSD) was formed on January 28, 1965 to provide water and sewer services as allowed under the Community Service District Law of Government Code Section 61000 et. seq. The current NCSD service area boundary encompasses approximately 3,917 acres in the Nipomo area of southern San Luis Obispo County, and serves water to an estimated population of 10,815. NCSD's service area is primarily residential land uses, with some light commercial and suburban residential comprising the Nipomo village area. Figure 1 illustrates the District service area boundary relative to the County of San Luis Obispo and in relation to the Santa Maria Groundwater Basin.

The District is comprised of one water system with two pressure zones; one zone serves the Blacklake Specific Plan area, and the other zone serves the rest of the District's service area.

The District has a Sphere of Influence (SOI) consisting of 7 different SOI areas which cover approximately 4,339 acres. A SOI is defined by Government Code Section 56425 as "a plan for the probable physical boundary and service area of a local agency or municipality." SOIs generally represent an area adjacent to a jurisdiction where services might reasonably be expected to be needed in the next 20 years. Figure 2 illustrates the District's current service area and SOI boundaries as defined in the *July 2010 Sphere of Influence Update and Municipal Service Review for the Nipomo Community Services District* prepared by the San Luis Obispo Local Area Formation Commission (3). The SOI area designated SOI-5 is currently served water by the Golden State Water Company (GSWC). Because the District does not expect to provide retail water service to those parcels, SOI-5 was not included in any further analysis. The last Sphere of Influence Study for the Nipomo area was done in May 2004. Seven of the eight study areas presented in the 2004 study are included in the current SOI. The Woodlands Area (Study Area 6) was left out of the District's SOI since it is served by Woodlands Mutual Water Company.

Figure 1. Nipomo Community Services District

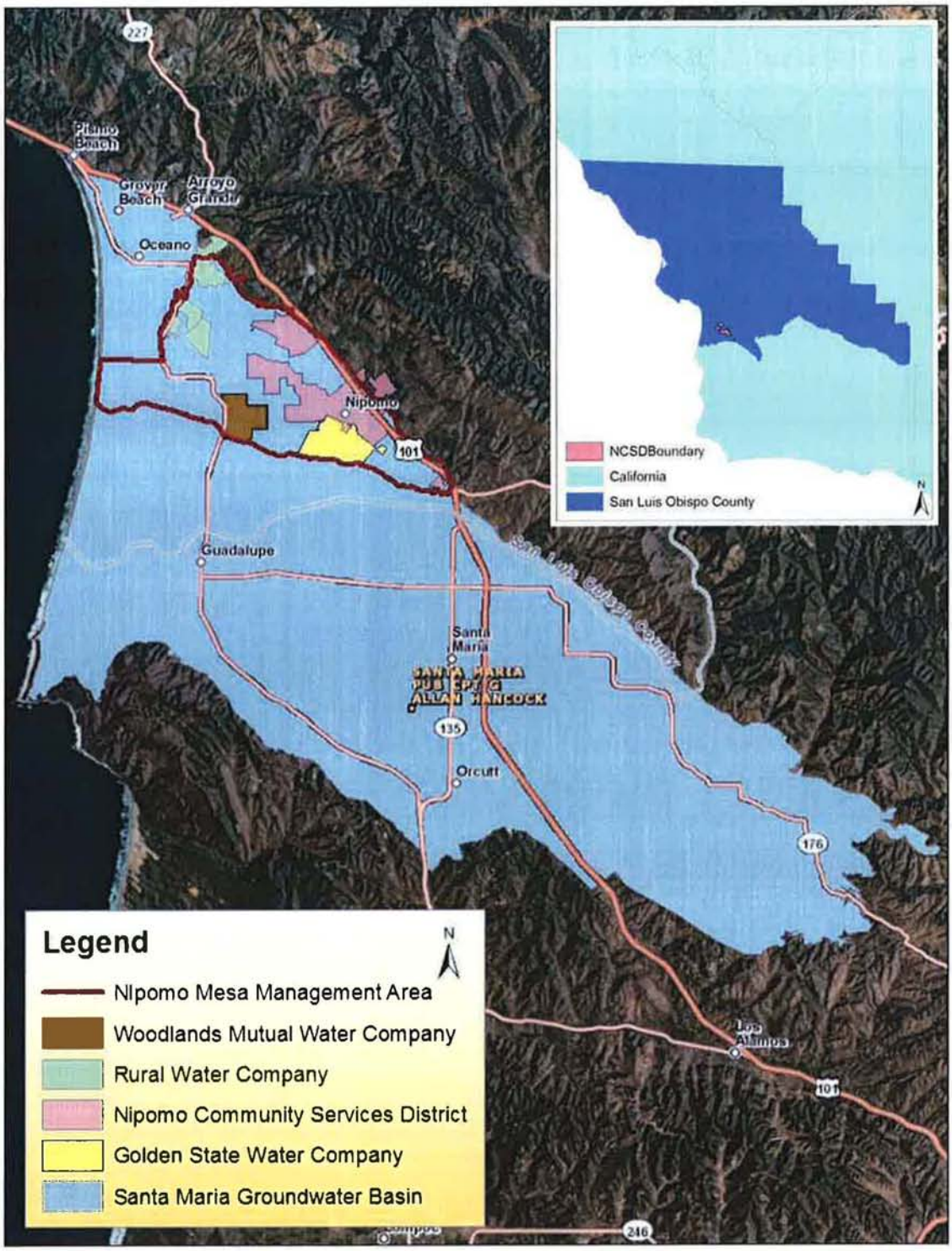
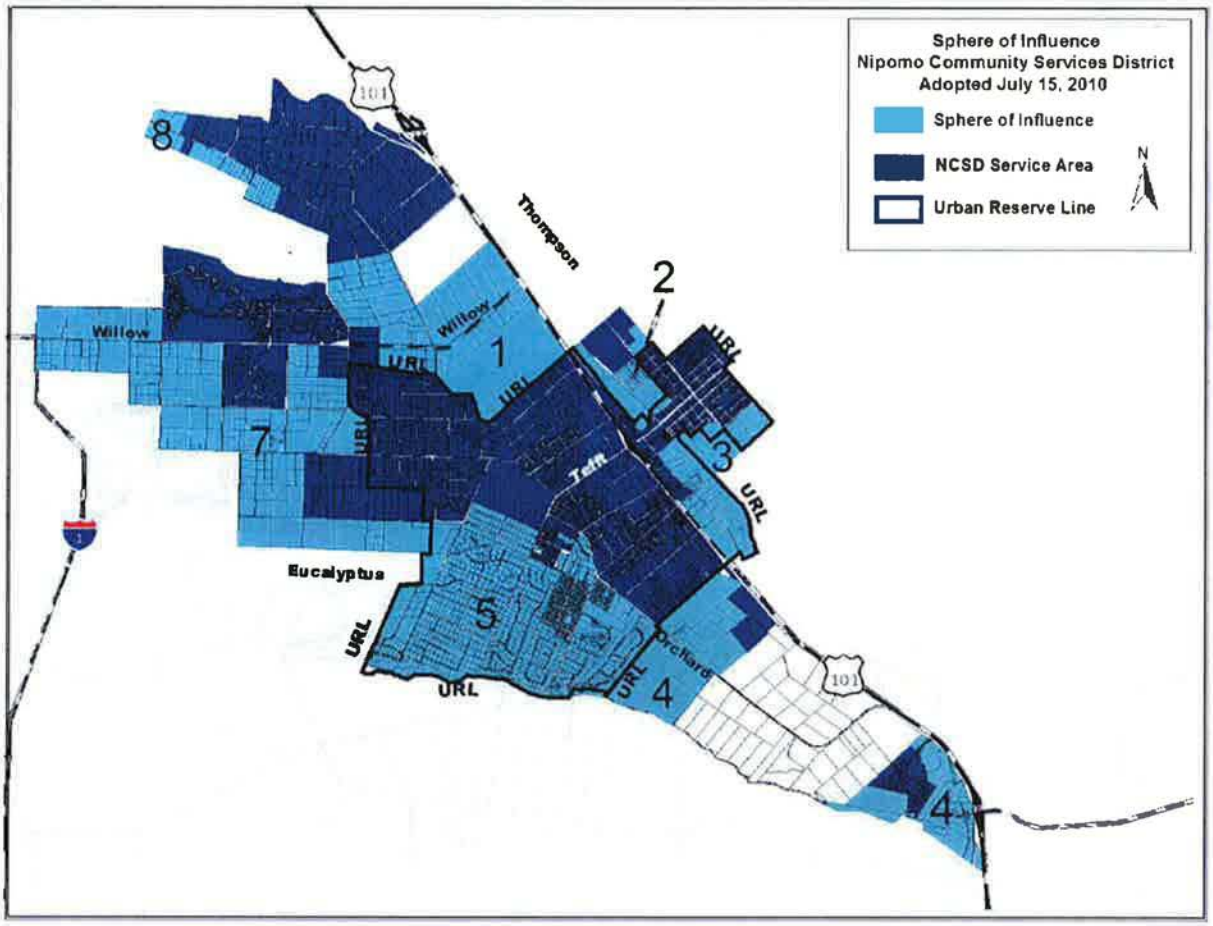


Figure 2. NCSD Service Area, Urban Reserve Line and SOI Boundaries (3)



1.5 CLIMATE

The Mediterranean climate of Nipomo and the surrounding southern San Luis Obispo County area is moderate as a result of the marine influence of the nearby Pacific Ocean. The winter season is usually cool and moist and the summer months are warm and dry, with relatively consistent temperatures averaging 57.3 degrees. Mountain ranges border Nipomo on the north, northeast, and east. The orientation of Nipomo's topography and surrounding mountain ranges facing the Pacific Ocean produces consistent winds from the Pacific in an on-shore, northwest direction. During the warmer summer months, heat rises above the surrounding mountain ranges, pulling in cooler moist air from the coast. As a result, temperatures stay relatively consistent. Rainfall usually occurs between the months of November and April. Table 4 illustrates monthly and annual average Potential Evapotranspiration (ETo), precipitation and temperature data for Nipomo. The average annual Potential Evapotranspiration (Average ETo) of 52.13-in is more than three times the average annual rainfall of 16.1-in. The stations used to gather data in Table 4 are shown in Figure 3.

Table 4. Climate

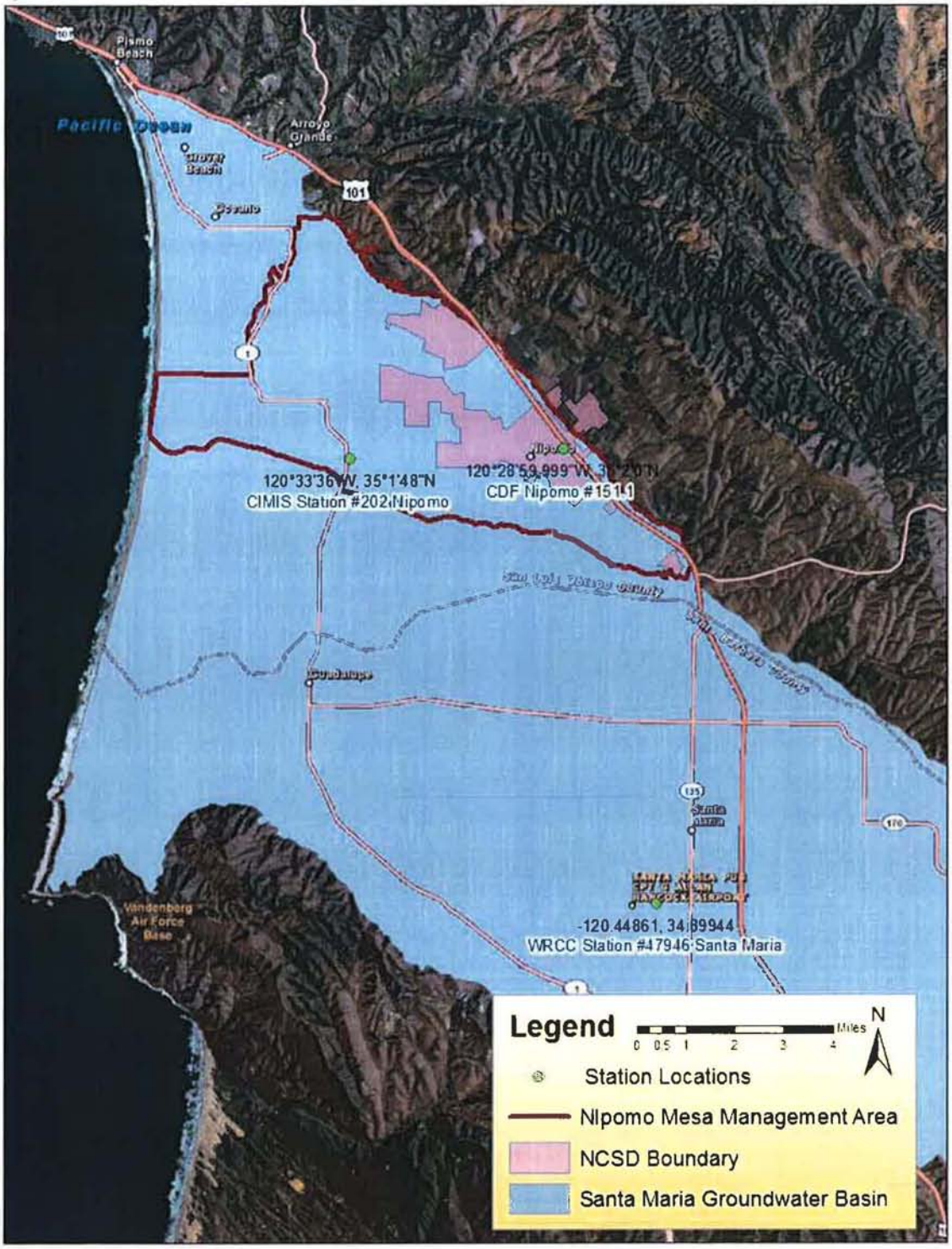
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average ETo(inches)[1]	2.21	2.5	3.8	5.08	5.7	6.19	6.43	6.09	4.87	4.09	2.89	2.28	52.13
Average Rainfall (inches)[2]	3.25	3.37	2.71	1.07	0.24	0.03	0.02	0.04	0.21	0.65	1.57	2.26	16.1
Average Temperature (Fahrenheit)[3]	51.1	52.6	53.4	55.2	57.6	60.4	63	63.5	63.3	60.7	56	51.5	57.3

[1] Data from CIMIS Station #202 Nipomo, June 27, 2006-June 23, 2010 **(5)**

[2] Data from SLO County Public Works Volunteer Precipitation Station-CDF Nipomo #151.1, 1959-2009 **(6)**

[3] Data from WRCC station #47946 Santa Maria 1948-2009 records. **(7)**
NOTE: Santa Maria is similar to Nipomo in elevation and distance from the Pacific Ocean and is the nearest climate station. However, Santa Maria is a little warmer, windier, and is at a lower elevation.

Figure 3. Climate Station Locations



1.6 POPULATION PROJECTIONS

San Luis Obispo County's population has grown by 40% between the years of 1980-2000, 14% between 1990-2000, and 5% between 2000-2005 (8). This growth trend is shown in comparison to the overall growth in California in Figure 4. The recent economic decline starting in 2007 has contributed to a reduced growth rate.

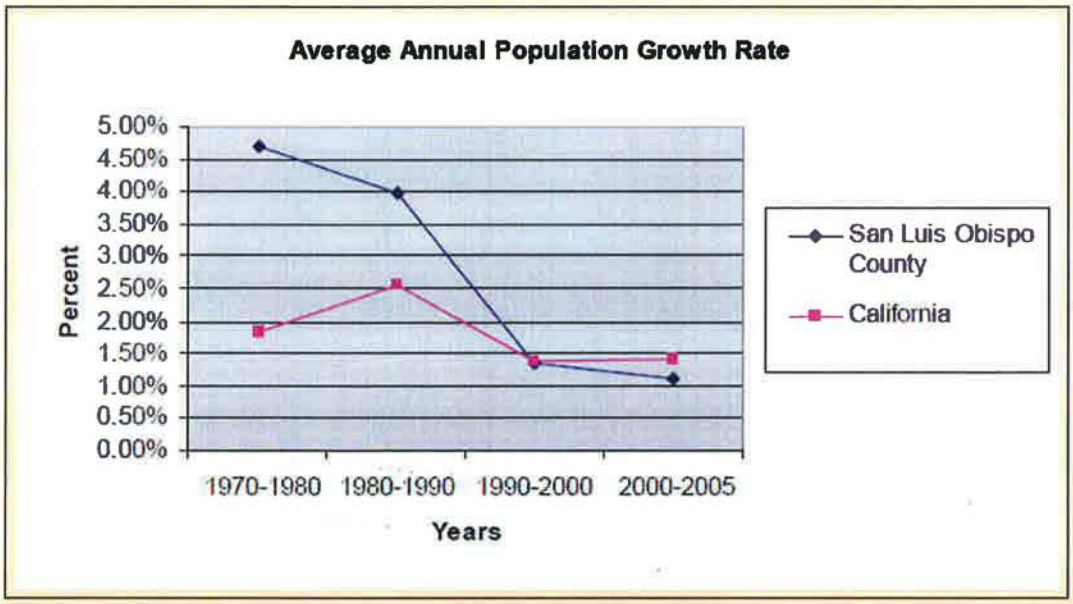
From 1990 to 2009, the overall population in San Luis Obispo County grew from 217,162 to 266,971, equating to an average annual growth rate of approximately 1%. During the same period, the water customer population within NCSD's service area grew from 5,064 to 10,815, or an average annual growth rate of approximately 4%. By comparison, the unincorporated areas in the County grew at an annual rate of roughly 1.6% per year during the same period.

The water customer population of Nipomo has increased rapidly in the past twenty years (Figure 5). The current population is more than double the 1990 water customer population of 5,064. The majority of this growth stems from the need for housing in the County. As a result of this rapid increase in population, there have been lasting and potentially severe effects on the groundwater basin. This increase in usage has contributed to the County Board of Supervisors declaring a Level of Severity III for the Nipomo Mesa Water Conservation Area, which is the highest severity level in the County General Plan's Resource Management System. In 2006, the County passed Ordinance 3090, which established the Nipomo Mesa Water Conservation area and stipulated:

> *1. General Plan Amendments and Land Divisions. Applications for general plan amendments and land divisions in the Nipomo Mesa Water Conservation Area shall include documentation regarding estimated existing and proposed nonagricultural water demand for the land division or development that could occur with the general plan amendment. If this documentation indicates that the proposed nonagricultural water demand exceeds the demand without the requested amendment or land division, the application shall include provisions for supplemental water as follows:*
>
> *a. General Plan Amendments. Where the estimated nonagricultural water demand resulting from the amendment would exceed the existing nonagricultural demand, the application shall not be approved unless supplemental water to off-set the proposed development's estimated increase in nonagricultural demand has been specifically allocated for the exclusive use of the development resulting from the general plan amendment, and is available for delivery to the Nipomo Mesa Water Conservation Area.*
>
> *b. Land Divisions. Where the estimated nonagricultural water demand resulting from the land division would exceed the existing nonagricultural demand, a supplemental water development fee shall be paid for each dwelling unit or dwelling unit equivalent, at the time of building permit issuance, in the amount then currently imposed by county ordinance, not to exceed thirteen thousand two hundred dollars. If the development resulting from the land division is subject to payment of supplemental water development fees to an entity other than San Luis Obispo County, the amount of these other fees shall be deducted from the county fee.*

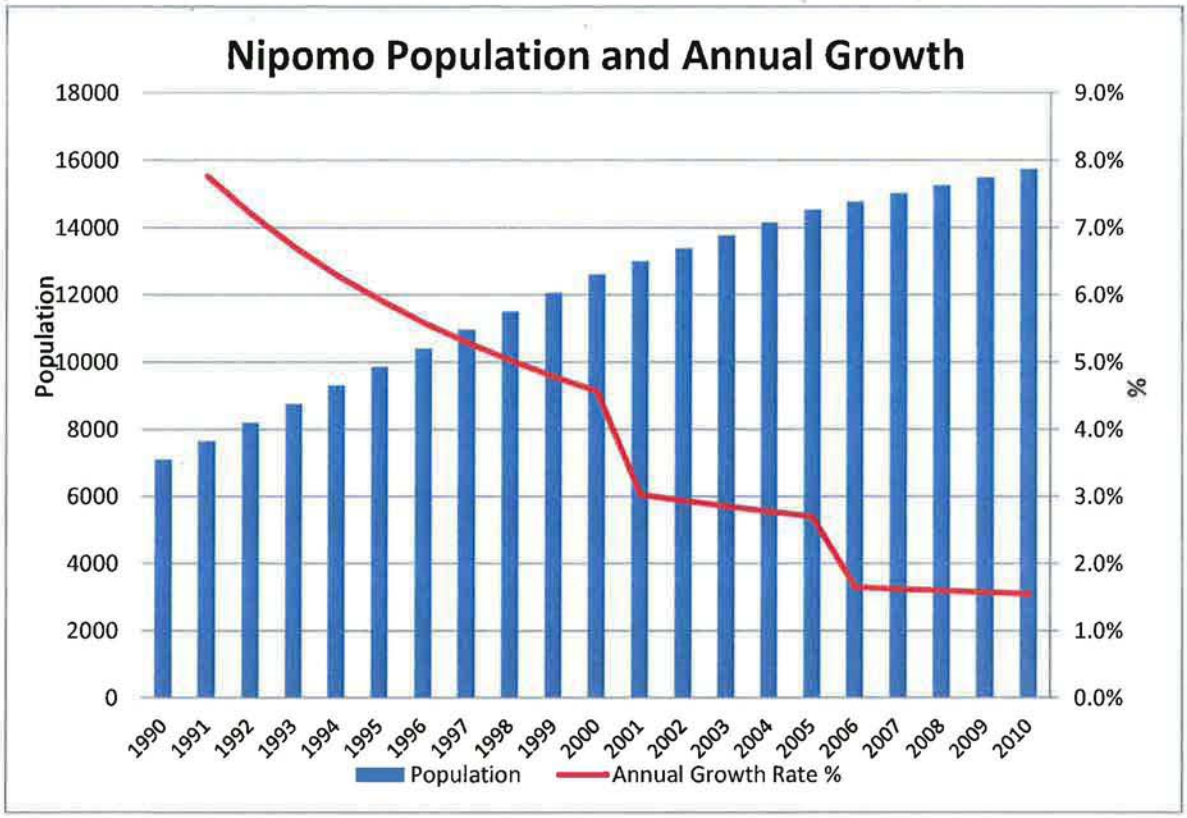
Population projections for the NCSD service area through 2030 are shown in Table 5. Appendix B provides a detailed discussion of the source data and methodologies used to develop population estimates and projections for this UWMP.

Figure 4. County and State Population (8)



Source: US Census, 1980, 1990, 2000

Figure 5. Population and Annual Growth[1]



[1] Data interpolated from SLOCOG data for the years 1990, 2000, 2005, and 2010. Sources: (8) (9) (10)

Table 5. Service Area Projected Population

Year	Estimated Population Served within NCSD [1]	Annual Growth Rate[2]
2010	10,815	1.8%
2015	11,651	1.5%
2020	12,367	1.2%
2025	13,127	1.2%
2030	14,003	1.3%

[1] Population based on persons per connection calculated using 2000 census data and applied to number of current and projected connections. See Appendix A for additional information regarding population estimates and projections.

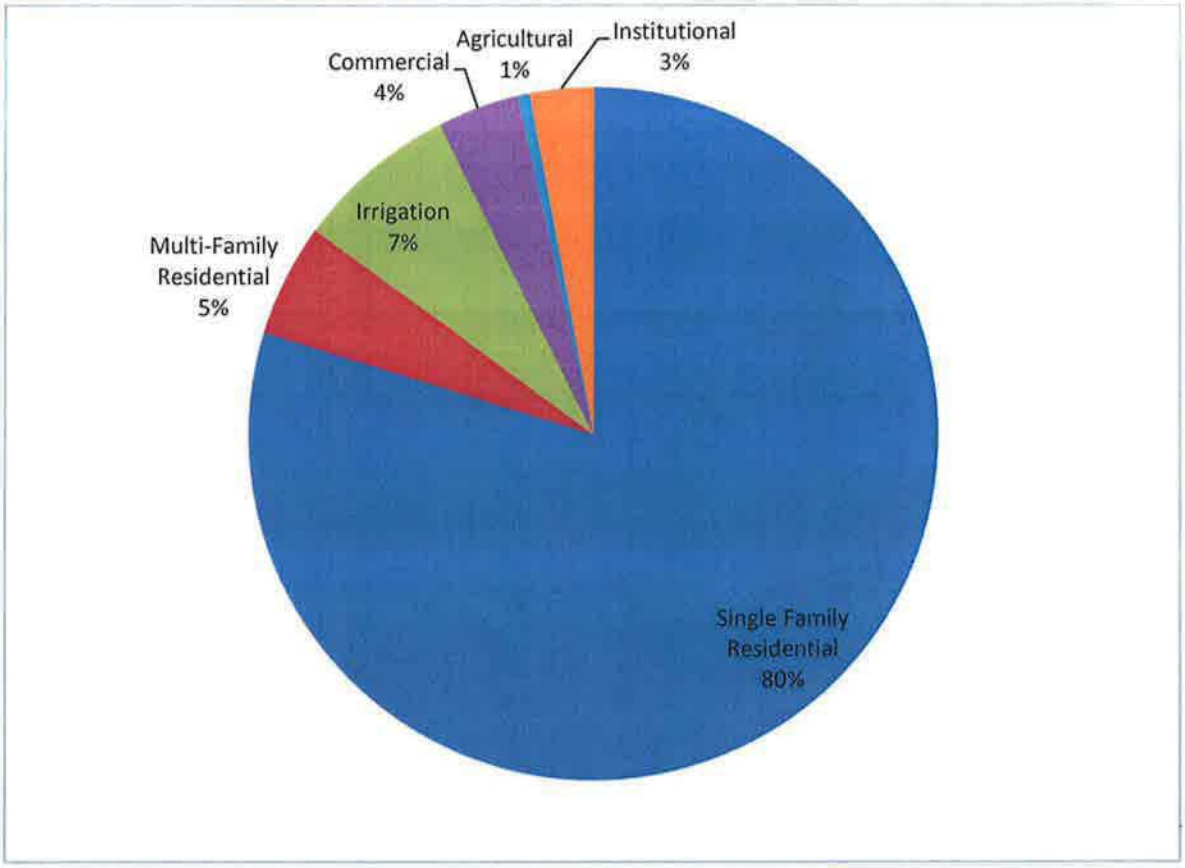
[2] Growth rates based on June 2009 SLOCOG projections for the Nipomo URL prepared by ERA and County staff (Medium Growth Estimate).

1.7 OTHER DEMOGRAPHIC FACTORS

Aside from population, there are several demographic factors that are important to consider in the context of this UWMP:

1. The current development in Nipomo is mainly residential (Figure 6).
2. The County Housing Element identifies Nipomo as a place with realistic development capacity for low-income to above moderate income residential uses (8).
3. The County has a need for additional housing units and Nipomo is one of the unincorporated communities expected to absorb population increases.
4. Development in the Nipomo area has slowed recently as a result of economic conditions and water supply constraints. The County has declared a Level of Severity III for Nipomo's water supply, which means existing community demands exceed the capacity of that resource. According to the County Housing Element, NCSD is expected to take the lead in addressing this issue (8).

Figure 6. Water Demand by Use Sector in NCSD



2 WATER SUPPLY

The District's current supply is entirely groundwater from the Santa Maria Groundwater Basin and the Nipomo Valley. The Nipomo Valley is not considered a reliable source for future use and is not discussed in detail. The Santa Maria Groundwater Basin supply is described in more detail in the following sections.

2.1 SANTA MARIA GROUNDWATER BASIN

Underlying NCSD is a portion of the Santa Maria Groundwater Basin (Figure 1). The Santa Maria Groundwater Basin covers about 288 square miles. It is bordered by the Santa Lucia mountain ranges to the north, the Casmalia-Solomon Hills to the south, the San Rafael Mountains to the east, and the Pacific Ocean to the west. The geologic makeup of the Santa Maria Groundwater Basin is composed of alluvial deposits including gravel, sand, silt, and clay. The estimated thickness ranges from 200 to 3,000 feet (9). This layer of alluvial deposits covers underlying consolidated rock which usually yields small quantities of water. Most of the water is contained in the alluvial sediments. Recharge of the Santa Maria Groundwater Basin occurs in four main ways: rainfall percolation, river bed recharge, subsurface inflows, and return flows.

The Santa Maria Groundwater Basin has been the subject of ongoing litigation since 1997. NCSD signed a June 30, 2005 Stipulation in the case that was ultimately approved by the Court and incorporated into the final judgment ("Judgment") that was filed on January 25, 2008 (Appendix C). The Court has the jurisdiction to make orders to enforce the rights of the parties outlined in the judgment. The Stipulation has five primary effects:

1. For purposes of management only, it divides the Santa Maria Valley Groundwater Basin into three separate administrative management sub-areas (the Northern Cities Management Area (NCMA), the Nipomo Mesa Management Area (NMMA), and the Santa Maria Valley Management Area (SMVMA).
2. It establishes a Technical Group (NMMA TG) that includes representatives appointed by NCSD, Southern California Water Company (SCWC)[2], ConocoPhillips, Woodlands Mutual Water Company (WMWC) and an agricultural overlying owner that signed the Stipulation.
3. It provides that a minimum of 2,500 afy of supplemental water from the City of Santa Maria be transmitted to the NMMA by NCSD with funding participation from Woodlands Mutual Water Company, Golden State Water Company, and Rural Water Company.
4. It contains specific provisions with regard to groundwater conditions, development of groundwater monitoring programs, and development of plans and programs to respond to Potentially Severe and Severe Water Shortage Conditions.

[2] Now known as Golden State Water Company (GSWC)

5. It contains provisions that each management area prepare an annual report to summarize monitoring results, water balance data and threats to groundwater supplies. The NMMA TG recently filed its 2009 annual report with the Superior Court (10).

2.1.1 Nipomo Mesa Management Area

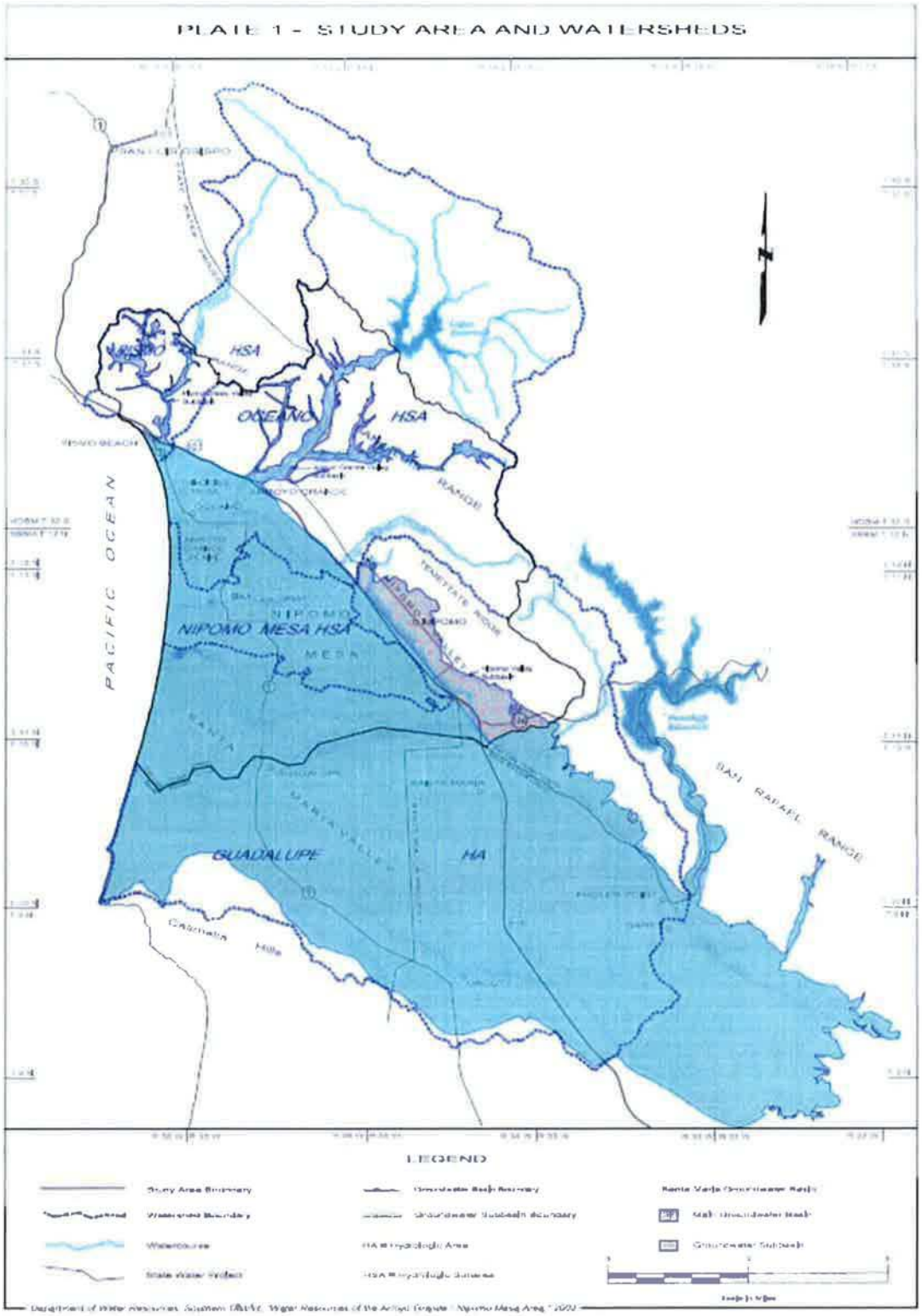
The Nipomo Mesa Management Area (NMMA) is an administrative management sub-area of the Santa Maria Groundwater Basin. The NMMA is bordered on the north by the Northern Cities Management Area (NCMA) and on the south by the Santa Maria Valley Management Area (SMVMA). A depiction of the NMMA and stipulating water purveyors is shown in Figure 1.

The NMMA covers approximately 33 square miles or 21,100 acres, which accounts for approximately 13 percent of the Santa Maria Groundwater Basin (10). The geology underlying the NMMA is comprised of 150 to 250 feet thick sand dune deposits overlying the Paso Robles Formation, the primary groundwater aquifer. There are no significant streams within the NMMA and the sand dune deposits are highly porous and permeable. Recharge to the aquifer only occurs through precipitation, agricultural and urban return flows, and subsurface inflows.

In 2002, DWR prepared a report entitled *Water Resources of the Arroyo Grande-Nipomo Mesa Area* (4) which evaluated the hydrologic and hydrogeologic conditions within the Santa Maria Groundwater Basin and the Nipomo Mesa Hydrogeologic Subarea (NMHSA). As shown in Figure 7, the NMHSA closely matches the boundary of the NMMA. In this report, DWR documented conditions of groundwater extraction exceeding recharge within the NMHSA dating back to the mid-1970s. DWR estimated Dependable Yield for NMHSA to be between 4,800 and 6,000 afy, and projected pumping from within the NMHSA to equal 7,800 afy in 2010 (4). DWR defined Dependable Yield as follows:

> *"... 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."*

Figure 7. Nipomo Mesa Hydrogeologic Subarea (4)



In June, 2003, San Luis Obispo County retained S.S. Papadopulos & Associates, Inc. to conduct a resources capacity study of the Nipomo Mesa area to further clarify the analysis and conclusions from the 2002 DWR report (9). The Papadopulos report confirmed that "...existing and projected future water demand at Nipomo Mesa exceeds sustainable groundwater supply..." and projected that continued mining of groundwater in storage will likely be "accompanied by reduced production capacity from many wells, increased energy costs for pumping, and increased risk of seawater intrusion of the aquifers near the coastal margin" (9).

Based in part on the findings of the 2004 Papadopulos report, the County's Water Resources Advisory Committee (WRAC) concluded that overdraft in the Nipomo Mesa area either exists currently or is imminent. Based on recommendations from the Papadopulos report, the Board of Supervisors determined a Level of Severity II for the Nipomo Mesa in November of 2004, and in April of 2007 certified the Level of Severity to a Level of Severity III. The County's Resource Management System as described in the County's *Framework for Planning* section of the General Plan defines a Level of Severity III:

> *"Level of Severity III exists when water demand equals the available resource; the amount of consumption has reached the dependable supply of the resource. A Level III may also exist if the time required to correct the problem is longer than the time available before the dependable supply is reached."*

The NMMA TG 2009 Annual Report estimated total production from the NMMA to be 12,200 afy, roughly three times the estimated Dependable Yield from the 2002 DWR report, and echoed the findings from the 2004 Papadopulos report:

> *"Although the hydrologic inventory cannot be used directly to calculate the potential imbalance in supply and demand for calendar year 2009, there are a number of direct measurements that indicate that demand exceeds the ability of the supply to replace this water pumped from the aquifers. These indicators include: 1) continuing deepening of the pumping depression in the NMMA, a portion of which is below sea level; 2) declining groundwater elevations as indicated by the Key Well Index and groundwater contours; 3) a limited component of seaward flow at the coast; 4) a flattening of the groundwater ridge between coastal and inland wells that protects inland areas from potential seawater intrusion; and 5) a threat on the north by the occurrence of seawater intrusion in the Deep Aquifer there."* (10)

In addition to those described above, the 2009 Annual Report for the NMMA includes several key findings, further reinforcing the severity of the water supply conditions in the NMMA:

- The NMMA TG recommends that the Nipomo Supplemental Water Project be implemented as soon as possible.

- The Key Wells Index for spring 2009 is below the groundwater elevation criterion established to indicate a Potentially Severe Water Shortage Condition, triggering a voluntary response plan. [3]
- The period of analysis (1975-2009) used by the NMMA TG is roughly 11 percent "wetter" on average than the long-term record (1920-2009) indicating there is a slight bias toward overstating the amount of local water supply resulting from percolation of rainfall. The 1920-2008 record of cumulative departure from mean rainfall is shown in Figure 12.

Through the proceedings of the adjudication, the Court did not take action to restrict pumping within the NMMA, however it retains ongoing jurisdiction to impose pumping restrictions on the basis of changing conditions. The Judgment included the following statement related to the condition of the Santa Maria Groundwater Basin:

> *"The Court determines that there is a reasonable likelihood that drought and overdraft conditions will occur in the [Santa Maria Groundwater] Basin in the foreseeable future that will require the exercise of the Court's equity powers. The Court therefore retains jurisdiction to make orders enforcing the rights of the parties hereto in accordance with the terms of this judgment."*

The following figures from the 2009 NMMA annual report are included here: Figure 8. Historic Pumping ; Figure 9. Spring 2009 Groundwater Elevation Contour Map; Figure 10. Fall 2009 Groundwater Elevation Contour Map; Figure 11. Key Wells Index ; and Figure 12. Cumulative Departure from Mean Rainfall .

[3] SAIC produced a report on the 2010 spring Groundwater Index (GWI) that has not yet been reviewed by the NMMA TG. This report states that the GWI for spring 2010 is 80,000 acre feet, which is 4,000 acre feet greater than the spring 2009 GWI. The Key Well Index from the NMMA 2nd Annual Report- Calendar Year 2009 generally follows the same historical trends as the GWI (12).

Figure 8. Historic Pumping (10)

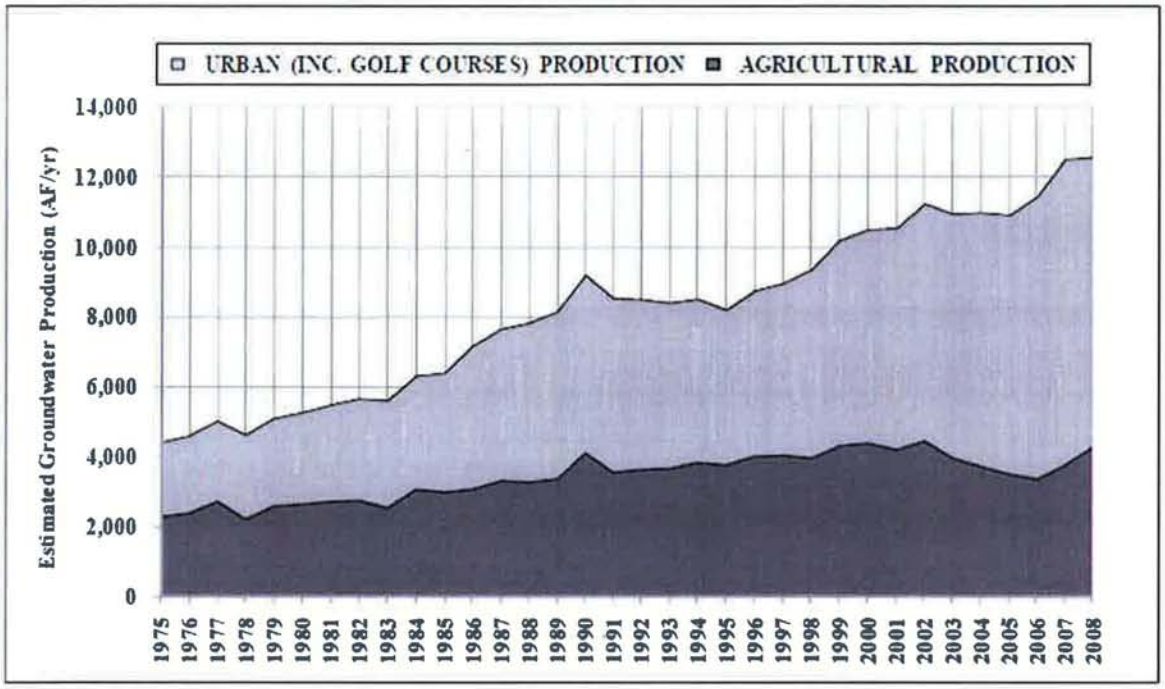


Figure 9. Spring 2009 Groundwater Elevation Contour Map (10)

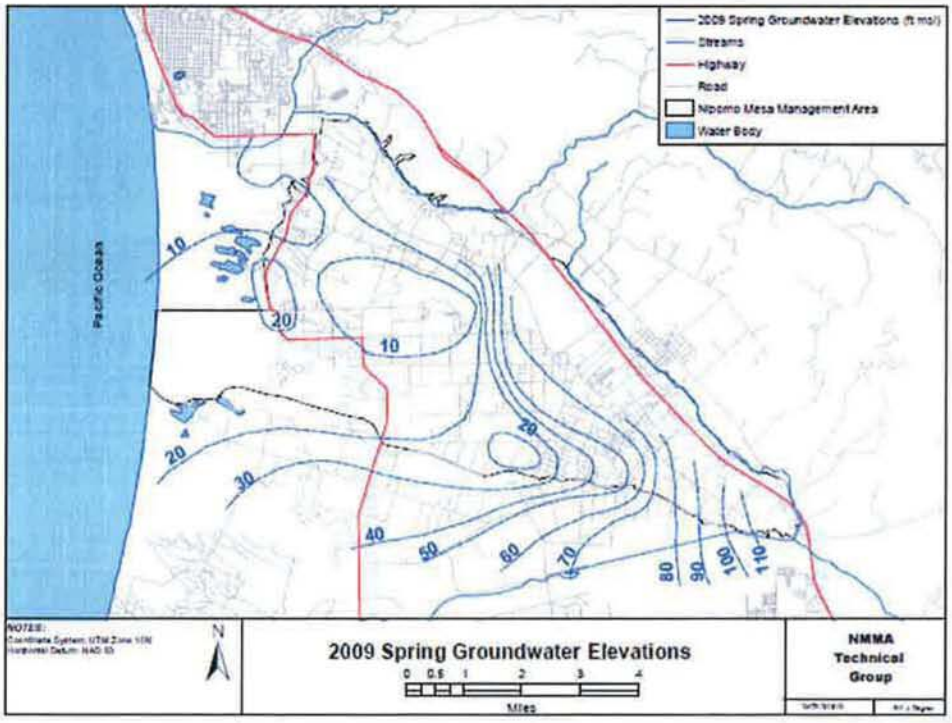


Figure 10. Fall 2009 Groundwater Elevation Contour Map (10)

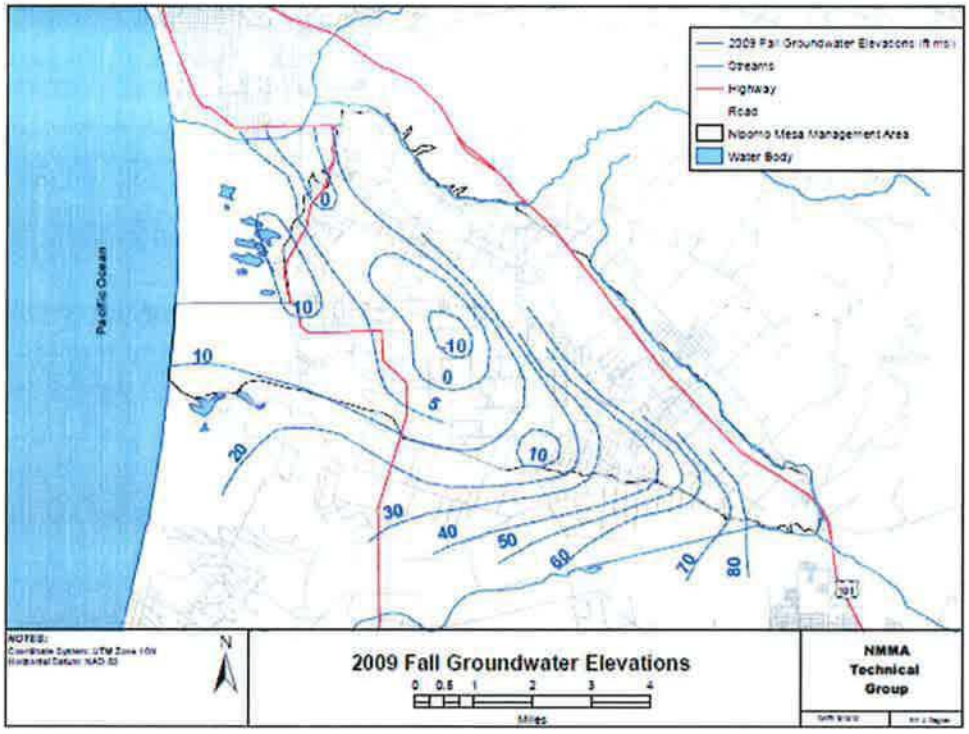


Figure 11. Key Wells Index (10)

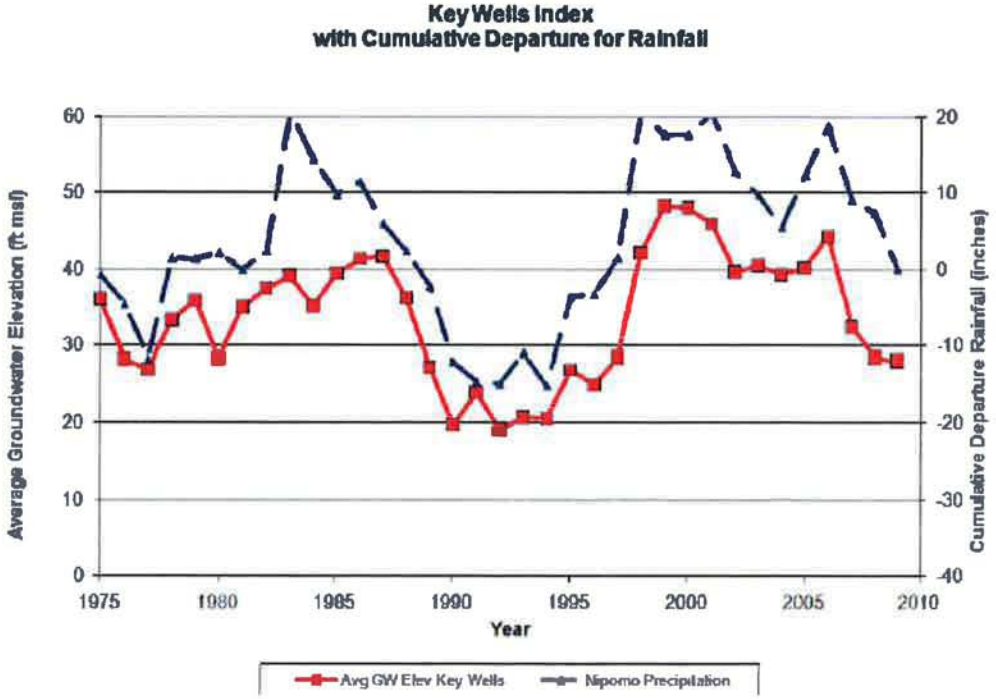
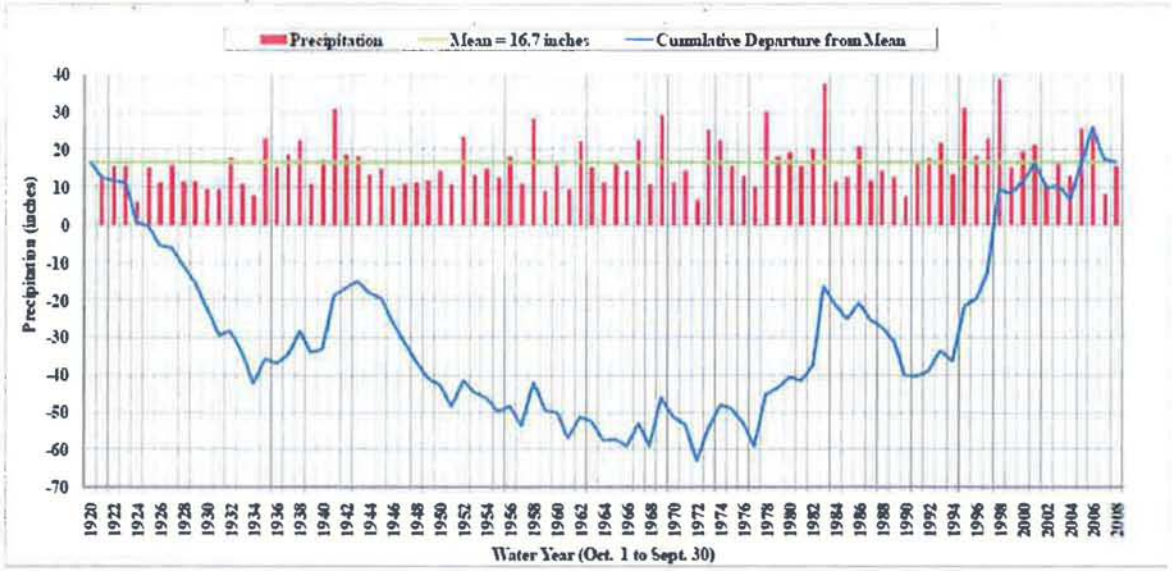


Figure 12. Cumulative Departure from Mean Rainfall (10)



2.2 NCSD GROUNDWATER SUPPLY

NCSD receives all of its water supply from groundwater in the Santa Maria Groundwater Basin and Nipomo Valley. The District has eleven wells in the NMMA and two wells in the Nipomo Valley (Church and Savage). The Church well is on standby and the Omiya and Savage wells are out of service due to operational and water quality issues. The Cheyenne and Mandi wells would need to be completed and activated per the conditions of their California Department of Public Health operating permits to achieve their estimated pumping capacity of 100 gpm. The combined pumping capacity of the active wells is estimated to be about 3,920 gpm (13). Table 6 summarizes the District's wells, Table 7 summarizes NCSD's storage tanks, and Figure 13 illustrates the locations of the District's wells and tanks.

Table 6. NCSD Wells

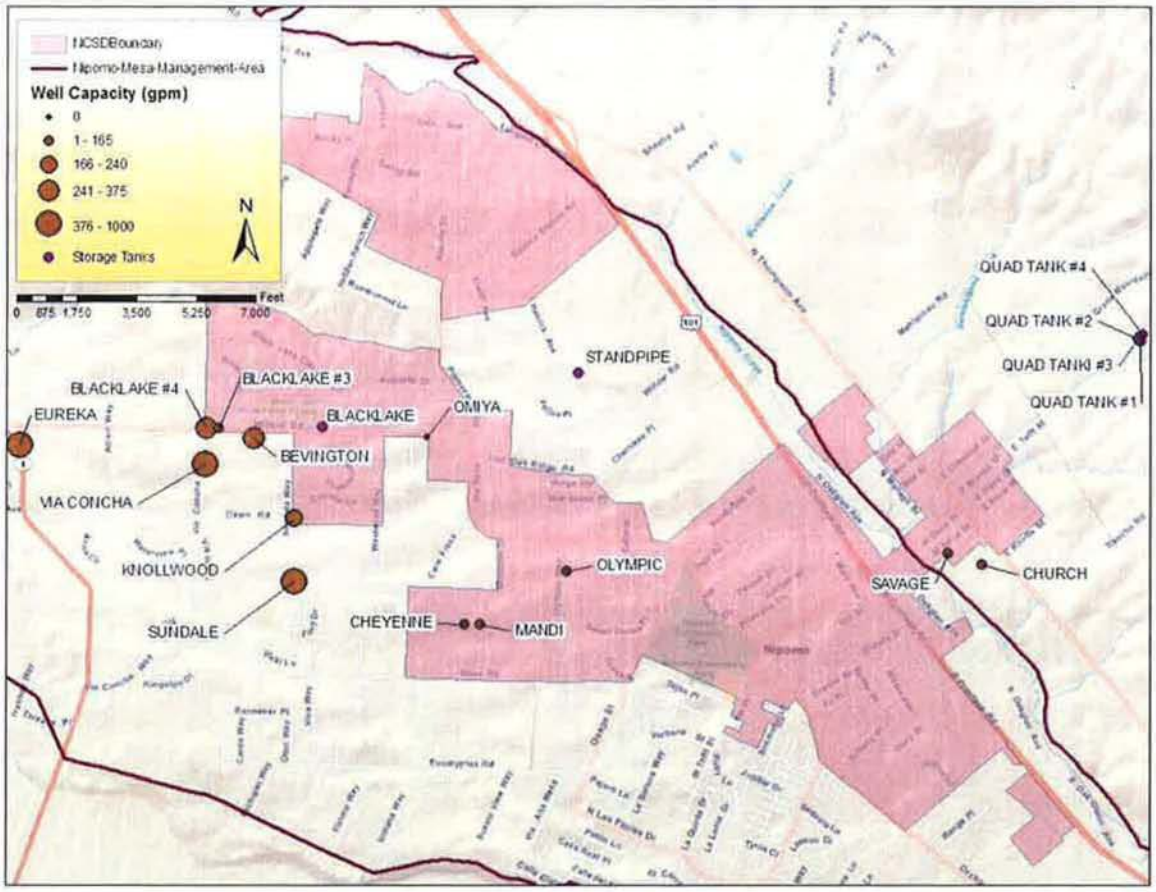
NAME	Source	Date Installed, Last Refurbished, or Last Replaced	Status	Capacity (gpm)	Well Depth (ft)
Active Wells					
BEVINGTON	NMMA	1985	Active	370	590
BLACKLAKE #3	NMMA	1989	Active	375	530
BLACKLAKE #4	NMMA	1989	Active	375	530
EUREKA	NMMA	1979	Active	890	727
KNOLLWOOD	NMMA	2001	Active	240	620
OLYMPIC	NMMA	1985	Active	130	465
SUNDALE	NMMA	1998	Active	1,000	680
VIA CONCHA	NMMA	1989	Active	750	710
Standby and Out of Service Wells					
CHURCH	Nipomo Valley	1984	Standby	145	240
CHEYENNE [1]	NMMA	1990	Not Yet Operational	100	475
MANDI [1]	NMMA	1990	Not Yet Operational	100	465
OMIYA	NMMA	1988	Out of service	0	485
SAVAGE	Nipomo Valley	1965	Out of service	124	330

[1] Cheyenne and Mandi would need to be completed and activated per the conditions of their California Department of Public Health operating permits to achieve their estimated pumping capacity of 100 gpm.

Table 7. NCSD Tanks

Name	Type	In-service Date	Capacity (gal)	Diameter (ft)
QUAD TANK #1	Steel	1966	500,000	60
QUAD TANK #2	Steel	1978	500,000	60
BLACKLAKE	Steel	1984	400,000	66
STANDPIPE	Steel	1993	1,000,000	44
QUAD TANK #3	Steel	2000	1,000,000	86
QUAD TANK #4	Steel	2003	1,000,000	86

Figure 13. Wells and Storage Tanks



NCSD's right to pump groundwater from the Santa Maria Groundwater Basin, which includes three administrative management areas, including the NMMA, is considered to be an appropriative right. Other appropriators include Golden State Water Company, Rural Water Company, the cities of Santa Maria and Guadalupe, and the cities and other public water suppliers located north of the NMMA, but still in the Basin. NCSD's appropriative right allows it to produce available groundwater surplus to the needs of overlying water producers located in the Basin, all subject to the provisions of the Judgment entered in the Basin adjudication, now on appeal. Should the NMMA ever be separately adjudicated, NCSD would have the opportunity to establish prescriptive rights to pump water from the NMMA which **would be of equal priority to the overlying producers' right to do so.**

Pursuant to the Stipulation and subsequent Judgment, the NMMA TG can declare a Severe Water Shortage Condition, and the Court may then order subsequent mandatory pumping restrictions on overlying landowners and/or holders of appropriative rights, including NCSD.

For the purposes of this UWMP, **NCSD's** appropriative access to water in the NMMA is approximated by the District's maximum annual historical pumping of 2,900 afy, since this value:

1. Represents maximum historical reasonable and beneficial use; and
2. There are currently no restrictions imposed by the Court limiting groundwater pumping.

Table 8 shows NCSD's pumping based on maximum historical pumping of water underlying the NMMA of 2,900 afy and the potential pumping capacity in the Nipomo Valley of 300 afy. It is important to note that NCSD's pumping in the NMMA is subject to change based on basin conditions and/or Court action (as described previously), and does not accurately reflect the sustainable supply. The Nipomo Valley supply is not within the NMMA and is currently not subject to the terms of the adjudication.

shows NCSD's historical production from 2005-2009. Since 2005, NCSD's pumping from the NMMA has been less than 2,900 afy .

Table 8. NCSD's Groundwater Pumping

Groundwater Source	Pumping (afy)
Santa Maria Groundwater Basin[1]	2,900
Nipomo Valley	300
Total	3,200

[1] Pumping is subject to the Santa Maria Groundwater Basin Adjudication and any subsequent Court action in the Adjudication proceedings.

Table 9. Historical Pumping

Groundwater Source	2005	2006	2007	2008	2009
Santa Maria Groundwater Basin[1] (afy)	2,794	2,727	2,839	2,755	2,698
Nipomo Valley (afy)	0	0	17	0	0
% of total water supply	100%	100%	100%	100%	100%

[1] Data from DWR reports rounded to the nearest afy

The amount of future pumping will decrease upon the implementation of a supplemental water supply source. The projected pumping in Table 10 is based upon the assumption that the Santa Maria Waterline Intertie Project (WIP) will be implemented by 2015 as envisioned in the Final Environmental Impact Report (discussed further in Section 2.3), and that groundwater pumping will not exceed the difference between total demand within the NCSD service boundary and the delivered supply from the WIP. In other words, the supplemental water will be used as a "base load" to meet demand, reducing the amount of water extracted by NCSD from the Basin.

Table 10. Projected Groundwater Pumping

Basin Name	2010	2015	2020	2025	2030
Nipomo Mesa Management Area (NMMA)[1]	2,771	1,617	1,450	1,281	1,474
Nipomo Valley Groundwater	0	0	0	0	0
% of total water supply	100%	54.79%	52.09%	43.45%	46.93%

[1] It is assumed that the WIP will be implemented by 2013. The Wholesale Water Supply Agreement provides a minimum delivery of 2,000 afy for years one through ten (years 2013-2023); 2,500 afy for years 11 through 19 (2024-2032); and 3,000 afy for years twenty through the end of the contract (2033-end of term) (Appendix D. **Wholesale Water Supply Agreement**). The District will receive 66.68% of the supplemental water delivered per the requirements of the Judgment. The available groundwater supply will only equal the demand not met by supplemental water.

2.3 WHOLESALE SUPPLIES

For nearly ten years, NCSD has been formally evaluating multiple alternative sources for a supplemental water supply (14) (15). Following extensive study and analysis, the District has decided to pursue a supplemental water supply project with the City of Santa Maria. The District currently has a sales agreement with the City of Santa Maria (Appendix D) and a completed Final Environmental Impact Report (FEIR) for the WIP (16). Design is progressing, and the project is expected to be brought on-line by 2013.

The District currently plans to form an assessment district to finance the capital portion of the WIP, which will be put to a land owner ballot in compliance with Proposition 218. Table 11 shows how much water is expected to be delivered by the WIP to NCSD if implemented by 2013.

Table 11. Projected Wholesale Supplies

Wholesale Supplier	2010	2015	2020	2025	2030
City of Santa Maria[1] (afy)		1,334	1,334	1,667	1,667

[1] It is assumed that the WIP will be implemented by 2013. The Wholesale Water Supply Agreement provides a minimum delivery of 2,000 afy for years one through ten (years 2013-2023); 2,500 afy for years 11 through 19 (2024-2032); and 3,000 afy for years twenty through the end of the contract (2033-end of term) (Appendix D. **Wholesale Water Supply Agreement**). The District will receive 66.68% of the supplemental water delivered per the requirements of the Judgment. The available groundwater supply will only equal the demand not met by supplemental water.

The proposed delivered amounts of water from the WIP shown in Table 11 reflect the minimum deliveries as scheduled in the Wholesale Water Supply Agreement (Appendix D. Wholesale Water Supply Agreement for NCSD if the project is implemented by 2013. Phase I of the WIP could deliver up to 3,000 afy. However, the sales agreement with the City of Santa Maria provides 3 stages of minimum purchasing commitment: 1) Delivery Years 1 through 10- 2,000 afy; 2) Delivery Years 11 through 19- 2,500 afy; 3) Delivery Years 20 through end of term- 3,000 afy. The Judgment requires NCSD to purchase 66.68%, Woodlands Mutual Water Company to purchase 16.66%, Golden State Water Company to purchase 8.33%, and Rural Water Company to purchase 8.33% of the delivered water. According to the FEIR, Phase I

> *"will supply water only to customers in the current NCSD boundaries and other water purveyors in the NMMA, specifically the Woodlands Mutual Water Company, Golden State Water Company and Rural Water Company. Only in [Phase II] will water be made available to new customers in the 2004 Sphere of Influence Areas that are annexed into the NCSD boundaries" (16).*

Phase II of the WIP, if implemented, would deliver an additional 3,200 afy, bringing the total amount of supplemental water delivered to the NMMA from the WIP to 6,200 afy (16).

2.4 DESALINATED WATER

Although some previous studies concluded that desalination is not a viable water supply within the timeline of this UWMP (prior to 2030), the District has identified desalination as an option for long-term water supply, for the following reasons:

1. The costs for implementing desalination are expected to continue to decrease as technology advances and more plants are permitted and built in California.
2. Desalination represents a local source of water that has the potential to be much more reliable than alternative supplies.
3. Viability of desalination is increasing as evidenced in the California Water Plan Update 2009 by the 26 desalting plants currently operating with a total capacity of approximately 84,000 afy in California as of 2009, 33 plants in design and construction with a combined capacity of 164,700 afy, and 49 plants planned or projected with a combined capacity of 479,000 afy (17).

2.5 FUTURE WATER SUPPLY PROJECTS

The District plans to obtain supplemental water from the Santa Maria WIP as described in Section 2.3. Table 12 illustrates the future supply contract term of the WIP.

Table 12. Transfer and Exchange Opportunities

Source Transfer Agency	Transfer or Exchange	Term	Proposed Quantities
City of Santa Maria	Transfer	Effective Date through June 30, 2085	6,200 afy[1]

[1] Assumes NCSD exercises its option to negotiate an additional 3,200 afy of supply via its agreement with the City of Santa Maria

2.6 CURRENT AND PLANNED WATER SUPPLIES

Table 13 summarizes NCSD's current and planned water supplies.

Table 13. Current and Planned Water Supplies

Water Supply Sources	2010	2015	2020	2025	2030
Nipomo Mesa Management Area (NMMA)[1]	2,771	1,617	1,450	1,281	1,474
Nipomo Valley Groundwater	0	0	0	0	0
Supplemental Water from the City of Santa Maria[2]		1,334	1,334	1,667	1,667
Total	**2,771**	**2,950**	**2,783**	**2,948**	**3,141**

[1] It is assumed that the WIP will be implemented by 2013. The Wholesale Water Supply Agreement requires a minimum delivery of 2,000 afy for years one through ten (years 2013-2023); 2,500 afy for years 11 through 19 (2024-2032); and 3,000 afy for years twenty through the end of the contract (2033-end of term) (Appendix D. **Wholesale Water Supply Agreement**). The District will receive 66.68% of the supplemental water delivered per the requirements of the Judgment. The available groundwater supply will only equal the demand not met by supplemental water.

[2] Based on the assumption that the Waterline Intertie Project will be implemented and the delivery schedule will start by 2013.

2.7 WATER SUPPLY RELIABILITY

The District has never had a single year or multiple dry years in which it did not pump 100% of its demand, regardless of regional hydrology. Additionally, the NMMA has never experienced groundwater conditions that would indicate a Severe Water Shortage Condition as defined by the NMMA TG. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions. On this basis, NCSD's supply is presented as 100% reliable for single and multiple dry year periods as summarized in Table 14.

Table 14. Water Supply Reliability

		Multiple Dry Water Years			
	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
% of Normal	100%	100%	100%	100%	100%

Although NCSD's supply is presented as 100% reliable for the purposes of this UWMP, the current pumping practices are unsustainable based on the following considerations:

1. Current pumping exceeds recharge as described in Section 2.1.1.
2. The presence of expanding groundwater depressions.

3. Existing pumping has the potential for seawater intrusion.
4. The period of analysis (1975-2009) is roughly 11 percent "wetter" on average than the long-term record (1920-2009) indicating there is a slight bias toward overstating the amount of local water supply resulting from percolation of rainfall.
5. In addition to NCSD's imposed pumping restrictions, the NCSD pumping is subject to mandatory restriction by the Court if the NMMA TG Severe Water Shortage Condition criterion is met.

Table 15 illustrates the base years for normal, single dry, and multiple dry years, as well as the historical sequences they are based on.

Table 15. Basis of Water Year Data

Water Year Type	Base Year(s)	Historical Sequence
Normal Water Year	2007	1975-2009
Single-Dry Water Year	2006	1975-2009
Multiple-Dry Water Years	1987-1990	1975-2009

2.7.1 Other Factors Affecting Supply Reliability

Supply from the adjudicated Basin and the proposed WIP are heavily influenced by legal, water quality, and climatic factors shown in Table 16. The NMMA TG could declare a Severe Water Shortage and the Court could set pumping limits. The WIP is subject to legal factors outlined by the Wholesale Water Supply sales agreement.

Table 16. Factors Affecting Supply Reliability

Name of Supply	Legal	Environmental	Water Quality	Climatic
NMMA Groundwater	The Court could set annual pumping limits on the Nipomo Mesa	Reduced percolation and recharge of stormwater due to increased development	Risk of seawater intrusion	Series of low rainfall years
Nipomo Valley Groundwater	Potential legal challenge of NCSD's pumping rights	None identified	Sulfides and high TDS at some wells locations	Series of low rainfall years Unknown safe yield
Supplemental water from City of Santa Maria	Wholesale Supply Agreement has conditions for renegotiation	NCSD Waterline Intertie Project FEIR (Douglas Woods & Associates, Inc., March 2004)	Reduced water quality associated with receiving pumped groundwater during dry years	None identified

2.7.2 Wholesale Supply Reliability

The WIP is the only wholesale supply currently planned for implementation. The 2005 Santa Maria UWMP describes its supply sources, rights, and reliability in detail. Santa Maria's sources and allotted amounts of water are shown in Table 17.

Table 17. Wholesale Supply Reliability from the City of Santa Maria

Source	2010	2015	2020	2025	2030
Purchased Water from SWP	13,706	13,706	13,706	13,706	13,706
Groundwater	12,795	12,795	12,795	12,795	12,795
Twitchell Yield/ Commingled Groundwater	14,300	14,300	14,300	14,300	14,300
Return Flows from SWP Water	8,909	8,909	8,909	8,909	8,909
Recycled Water	0	0	0		
Total	**49,710**	**49,710**	**49,710**	**49,710**	**49,710**

Source: (17)

The WIP sources are assumed to be 100% reliable as stated in the 2005 Santa Maria UWMP. As a result, the District plans on 100% of its supply from the WIP to be available in single dry and multiple dry years. The 2005 Santa Maria UWMP shows a 100% reliable supply in single dry and multiple dry years as shown in Table 18.

Table 18. Wholesale Normal, Single, and Multiple Dry Years Supply

Project Name	Normal Year	Single Dry Year	Multiple Dry Years		
			Year 1	Year 2	Year 3
Santa Maria Waterline Intertie Project [1]	3,000 afy	3,000 afy	3,000 afy	3,000 afy	3,000 afy
Supply Reliability	100%	100%	100%	100%	100%

[1] The delivery of supplemental water is subject to the terms of the Wholesale Water Supply Agreement in Appendix D. **Wholesale Water Supply Agreement.** The amounts of supplemental water shown in Table 10, Table 11, and Table 13 are minimum scheduled deliveries per the Wholesale Water Supply Agreement. This table reflects the maximum available wholesale water deliveries of Phase I of the WIP.

The reliability of State Water for Santa Maria is subject to the SWP annual supply:

> *"...any period on or after June 30, 2035, shall be subject to the renewal of the contract between the City and Central Coast Water Authority for SWP water. Furthermore, the terms of this Agreement shall be subject to renegotiation as described below in the event that the SWP contract or any subsequent SWP contract is not renewed or the terms of such renewal either (i) substantially impair the ability of City to continue to provide Supplemental Water in the quantities set forth in this Agreement; or (ii) the cost of continuing to provide Supplemental Water pursuant to the terms of this Agreement would create a significant financial burden on the City. In no event shall the City be required to deliver Supplemental Water following June 30, 2035 at a financial loss"* (18).

Even if Santa Maria does not receive its full allotment of SWP water, it can blend more groundwater to deliver to NCSD. However, as stated above, the terms of the Agreement are subject to renegotiation dependent on changes to Santa Maria's SWP contract. Santa Maria is investigating possible additional SWP water from San Luis Obispo County's excess SWP entitlements, which could further improve supply reliability from the SWP. Table 19 shows the other factors affecting supply reliability outlined in Santa Maria's 2005 UWMP.

Table 19. Factors Affecting Wholesale Supply Reliability

Name of Supply	Legal	Environmental	Water Quality	Climatic
Groundwater, Santa Maria Groundwater Basin	The Court retains jurisdiction over management of the Basin and may limit pumping under Severe Water Shortage Conditions as presented in the Stipulation. The Management Area Engineer will monitor groundwater conditions and report to the Court.	N/A	None	See Legal Column in this Table.
Purchased Water from SWP and Associated Return Flows	N/A	Environmental conditions in the Delta may require reduced deliveries from the SWP	None	Reliability of imported water supply may vary based on SWP annual water supply.

Source: 2005 Santa Maria UWMP (17)

2.8 REGIONAL WATER SUPPLY SOLUTIONS

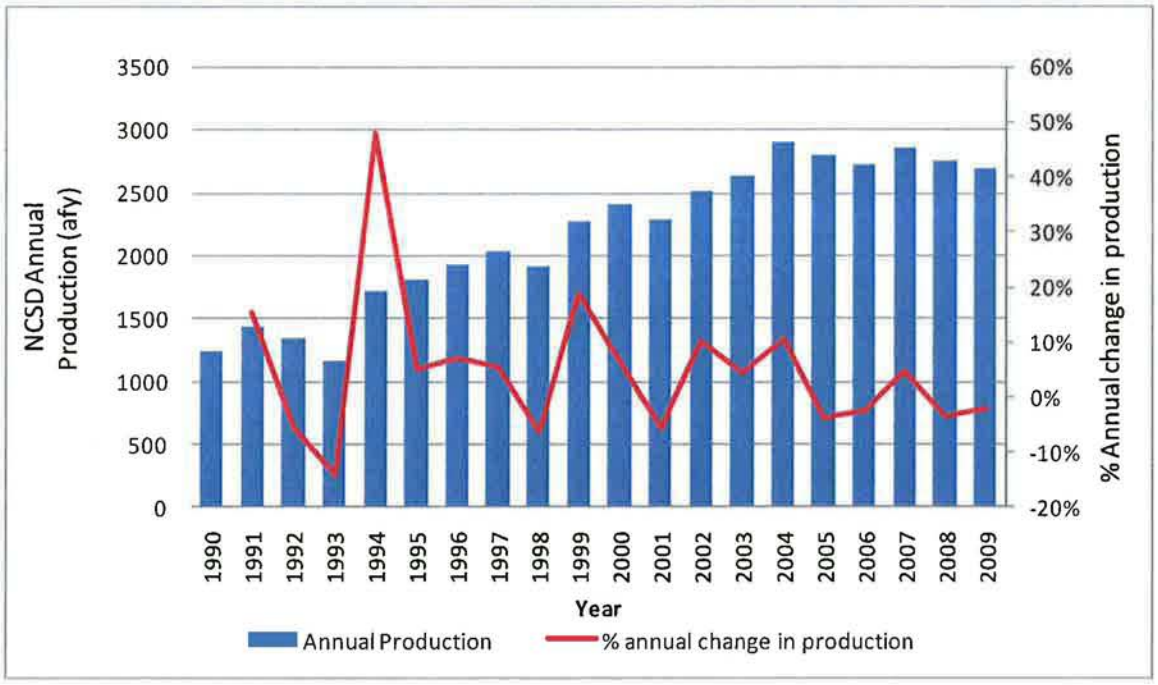
The water supply challenges facing NCSD are not unique to San Luis Obispo County, nor to the State of California. Water shortages are widespread nationwide, and represent a significant threat to economic stability (19). New sources of water supply are costly to plan, design and construct, and oftentimes present significant political, social and environmental challenges. For these reasons, DWR encourages water suppliers to develop regional solutions to improve the sustainability of local water supplies. By pursuing a coordinated regional effort, local purveyors can align their interests and pool their resources with neighboring jurisdictions to raise awareness, gain political support, raise funds and implement projects that would have otherwise been infeasible.

San Luis Obispo County and the water purveyors within the County have multiple near-term opportunities to collaborate and enhance supply and delivery systems for the benefit of all involved. First, the County and CCWA are initiating a cooperative effort to evaluate options of delivering additional State Water Project supplies to the Central Coast and optimizing utilization of the Coastal Branch of the State Water Project. Second, the County is currently preparing its Master Water Plan, which could serve as a framework for developing water supply alternatives for the NMMA and a vehicle for regional cooperation. Finally, the County may be updating its Integrated Regional Water Management Plan (IRWMP) in the next two years. These and other regional efforts can serve the District's interests, and may be the best way to advance projects that would have otherwise been infeasible, such as desalination, regional recycled water solutions and/or seawater intrusion barrier(s).

3 WATER DEMANDS

Historically, NCSD has experienced periods of rapidly increasing water demand corresponding with rapid growth and development in the Nipomo area (see Section 1.6). For example, between 1990 and 2005, the District's total production increased from 1,240 afy to 2,794 afy. This equates to an annual average growth rate of 5.6%. As a reflection of ongoing conservation efforts and a persistent economic recession, the District's production has stabilized, and actually decreased by 3% from 2,794 afy in 2005 to 2,698 afy in 2009.

Figure 14. NCSD Historical Production



3.1 DEMAND SUMMARY BY CUSTOMER TYPE

The projected demands reflect a reduction of demand between 2015 and 2020 as a result of assumed compliance with the per capita water use interim target (2015) and target water use (2020) identified in the Daily Per Capita Water Use Technical Memorandum (Appendix A. Daily Per Capita Water Use Technical Memorandum . After a period of reduced per capita water use, the population increases, creating a larger gross demand. Historical and projected demands were developed in Work Product 1 (Appendix B) and are summarized in Table 20, Table 21, and Table 22. All demands are metered within NCSD's service area.

Table 20. Past and Current Demand by Customer Type

Water Use Sectors	2005		2010	
	# of Connections	Deliveries (afy)	# of Connections	Deliveries (afy)
Single-Family	3,312	2,044	3,530	2,100
Multi-family	391	134	417	138
Commercial	86	99	92	101
Industrial	-	-	-	-
Institutional	6	77	6	79
Landscape	76	193	81	199
Agricultural	2	15	2	15
Total	**3,873**	**2,562**	**4,128**	**2,632**

Table 21. Projected Demand by Customer Type

Water Use Sectors	2015		2020	
	# of connections	Deliveries (afy)	# of connections	Deliveries (afy)
Single-Family	3,799	2,236	4,033	2,109
Multi-family	449	147	476	138
Commercial	99	108	105	102
Industrial	-	-	-	-
Institutional	7	85	7	80
Landscape	87	212	93	200
Agricultural	3	16	3	15
Total	**4,443**	**2,803**	**4,717**	**2,644**

Table 22. Projected Demand by Customer Type

Water Use Sectors	2025		2030	
	# of connections	Deliveries (afy)	# of connections	Deliveries (afy)
Single-Family	4,271	2,234	4,551	2,380
Multi-family	505	147	538	156
Commercial	111	108	118	115
Industrial	-	-	-	-
Institutional	8	85	8	90
Landscape	98	211	104	225
Agricultural	3	16	3	17
Total	**4,996**	**2,801**	**5,323**	**2,984**

NCSD is taking the lead to bring supplemental water in with financial participation from GSWC, RWC, and WMWC. Table 23 shows the amount of water NCSD will sell to other agencies.

Table 23. Sales to Other Agencies (afy)[1]

Purchasing Agency	2005	2010	2015	2020	2025	2030
Golden State Water Company	7	0	167	167	208	208
Rural Water Company	0	0	167	167	208	208
Woodlands	0	0	333	333	417	417
Construction Metered Use	14	0	0	0	0	0
Total	**21**	**0**	**666**	**666**	**833**	**833**

[1] Source: NCSD Staff

Unaccounted for system losses are calculated in Work Product 1 (Appendix B), and summarized in Table 24.

Table 24. Additional Water Uses and Losses (afy)

Water Use	2005	2010	2015	2020	2025	2030
Blacklake Recycled Water[1]	60	71	71	71	71	71
Unaccounted-for system losses[2]	211 (8%)	139 (5%)	148 (5%)	139 (5%)	147 (5%)	157 (5%)
Total	271	199	219	210	218	228

[1] Based on data from NCSD Staff.

[2] *Source:* Appendix B

3.1.1 Low-income Housing Water Demand

Section 10631.1 of the California Water Code requires 2010 UWMPs to include projected water use for lower income single-family and multi-family residential households. Lower Income is defined by Health and Safety Code Section 50079.5 as 80% of county median income or less. The projections are meant to assist water purveyors in complying with the requirements of Government Code Section 65589.7, which requires water purveyors to "grant a priority for the provision of [water and sewer] services to proposed developments that include housing units affordable to lower income households."

Low-income households in the Nipomo area are estimated from the San Luis Obispo County Housing Element (8) on a percentage basis of single family and multi-family residential connections. Estimated low-income residential demands are summarized in Table 25. The low-income single-family and multi-family residential estimates are included in the single-family and multi-family demand projections in Table 20.

Table 25. Low-income Residential Demand Projections

Calendar Year	Low-Income SFR Connections	Low-Income SFR Consumption (AFY)	Low-Income MFR Connections	Low-Income MFR Consumption (AFY)
2005 [1]	1,225	756	145	50
2010 [2]	1,306	777	154	51
2015 [2]	1,406	827	166	54
2020 [2]	1,492	780	176	51
2025 [2]	1,580	827	187	54
2030 [2]	1,684	881	199	58

[1] Low-income = 37% of single-family/multi-family connections and demand based on the number of low-income households in Nipomo in 2000 (1,471) and the total households in 2000 (4,029) from the Housing Element (8)

3.2 WATER CONSERVATION

The District is required by SB 7 to reduce its per capita water use by 20% from baseline by the year 2020. The legislation requires all water suppliers to achieve a reduction in per capita water use of 20% by December 31, 2020, with an interim target of 10% reduction by December 31, 2015. The legislation requires each urban water supplier to develop, and include in its UWMP, estimates of: 1) baseline daily per capita water use; 2) urban water use target; 3) interim urban water use target; and 4) compliance daily per capita water use. The UWMP must also include bases for determining the estimates, with references to supporting data.

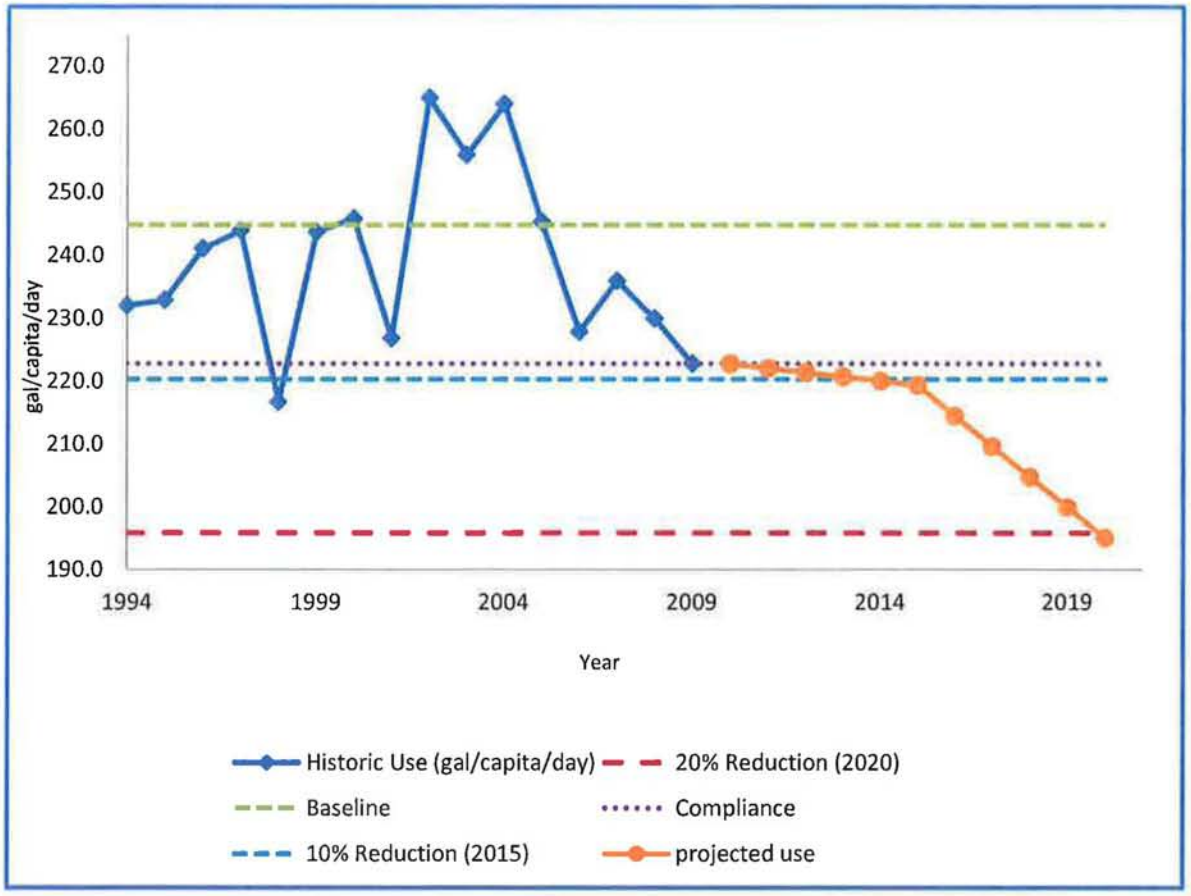
3.2.1 Determination of Actual Reductions in Water Use

The District preceded this UWMP with a Technical Memorandum to calculate Baseline Daily Per Capita Water Use (Appendix A) and Demand Database (Appendix B) to develop 20-year demand projections. Based on the prescribed reduction targets, the demand database will be used to compare future water use with the projections to determine if the District is effectively reducing its overall water use. Table 26 shows the water use reduction baseline, targets, and current compliance water use. Figure 15 shows the data from both technical memorandums in a visual format. Based on the current compliance use in 2009, the District has reduced its water use by 8.6% from the baseline since 2005.

Table 26. Per Capita Water Use

Description	Water Use, gal/capita/day	Compliance Year
Baseline Gross Water Use	244.8	10 year average (1997-2006)
Compliance (2009) Water Use	222.7	2009
Interim Water Use (90%)	220.3	2015
Target Water Use (80%)	195.8	2020

Figure 15. Per Capita Water Use and Projections



To achieve the remaining 11.4% reduction needed by 2020, the District will continue to implement the measures outlined in Section 6.6. The District plans to introduce a new tiered rate structure, continue to implement new development standards, target reducing the consumption for high-use customers, and implement Best Management Practices (BMP) from the CUWCC.

3.2.2 Tiered Rate Structure

The District currently has a two-tier rate structure. The rationale for a tiered rate structure is to target wasteful use by using allocation-based water conservation pricing. The two tiers currently used are from 0-40 HCF and 41+ HCF. The District plans to introduce a four-tiered rate structure to create a financial incentive for customers to conserve water. The benefits of conservation-based rate structures are discussed in detail in the Water Conservation Program (20). The tiered rate structure establishes volumetric rates; that is the more water a customer consumes, the more expensive the water becomes. This structure allows customers who use an amount of water within the limits of the first tier to have the lowest rates. Customers who exceed the specified limit of the first tier pay an increased cost per unit of water within the limits of the second tier. Customers using an amount of water in excess of the limits of the second tier have to pay an even higher rate per unit of water. The increased costs have to be reasonable with a rational nexus to the cost of service as required by Prop 218. With the recent implementation of Assembly Bill No. 2882 (AB 2882) to amend the California Water Code in January 2009, the District will have defensible guidance on how to establish and use allocation-based water conservation pricing. AB 2882 provides an opportunity for the District to conserve water while meeting reasonable costs through its rate structure. A good model for a tiered rate structure is the City of San Luis Obispo because of its successful history of water use reduction. The City states, "A key factor in our water conservation program is a rate structure that is based solely on use (no minimum charges) and tiered rates" (21). The District's next rate change is planned to take place in January 2011 and is subject to approval by the Board of Directors and a successful Proposition 218 process.

3.2.3 New Development Standards

The District Ordinance No. 2009-114 Water Service Limitations is intended to provide assurance that there will be adequate groundwater to meet present and future needs of District residents consistent with County resource protection goals. The goal of the Ordinance is to achieve a 15% reduction in observed water demand. Water limitations are outlined in the Ordinance and applicants for Will-Serve Letters and Intent-to-Serve Letters must receive a registered architect or engineer's signature certifying that the application meets the requirements of the ordinance. Intent-to-Serve applications for nonresidential/commercial/industrial projects require an irrigation plan, a landscape plan, a plant material list and a hardscape plan for water features. Will-Serve Letters are only issued to nonresidential/commercial/industrial projects verified by the General Manager to be in compliance with the total water demand requirements. Other ordinances relating to development and water use reduction are discussed in Section 6.6.

The County's Ordinance 3090 amends Title 19 of the County Code to require any applicant for a construction permit or remodel permit constituting a permit fee greater than $20,000 to install plumbing fixtures with certain criteria designed for water conservation. New construction permits will only be given when an applicant has retrofitted the plumbing fixtures of five existing structures in the Nipomo Mesa Water Conservation Area.

3.2.4 High-use Consumer Reduction

There are a few parcels in the District, shown in , that consume much more water per year than most other parcels. The two largest users are the Nipomo Community Park and the Nipomo High School. The Park uses about 56 afy and the High School uses about 80 afy. These parcels are in need of landscape irrigation retrofits and improvements.

3.2.5 CUWCC

The District is a member of the California Urban Water Conservation Council (CUWCC) and as a result is exempt from completing a Demand Management Measures (DMM) section as well as the DMM plan evaluation (Water Code §10631 (f) & (g)) for the 2010 UWMP. The District's Best Management Practices Report and 2009 Annual Report are included in Appendix E.

The major tools that the District is using to conserve water and achieve the 20% reduction from the baseline are: using a rate structure that encourages less water use, reducing high-use customer consumption, being a member of the California Urban Water Conservation Council (CUWCC); implementing water use reduction programs (Section 6.6); and implementing water use reduction ordinances (Section 6.6).

Figure 16. Historical Consumption by Parcel (Northern Section)

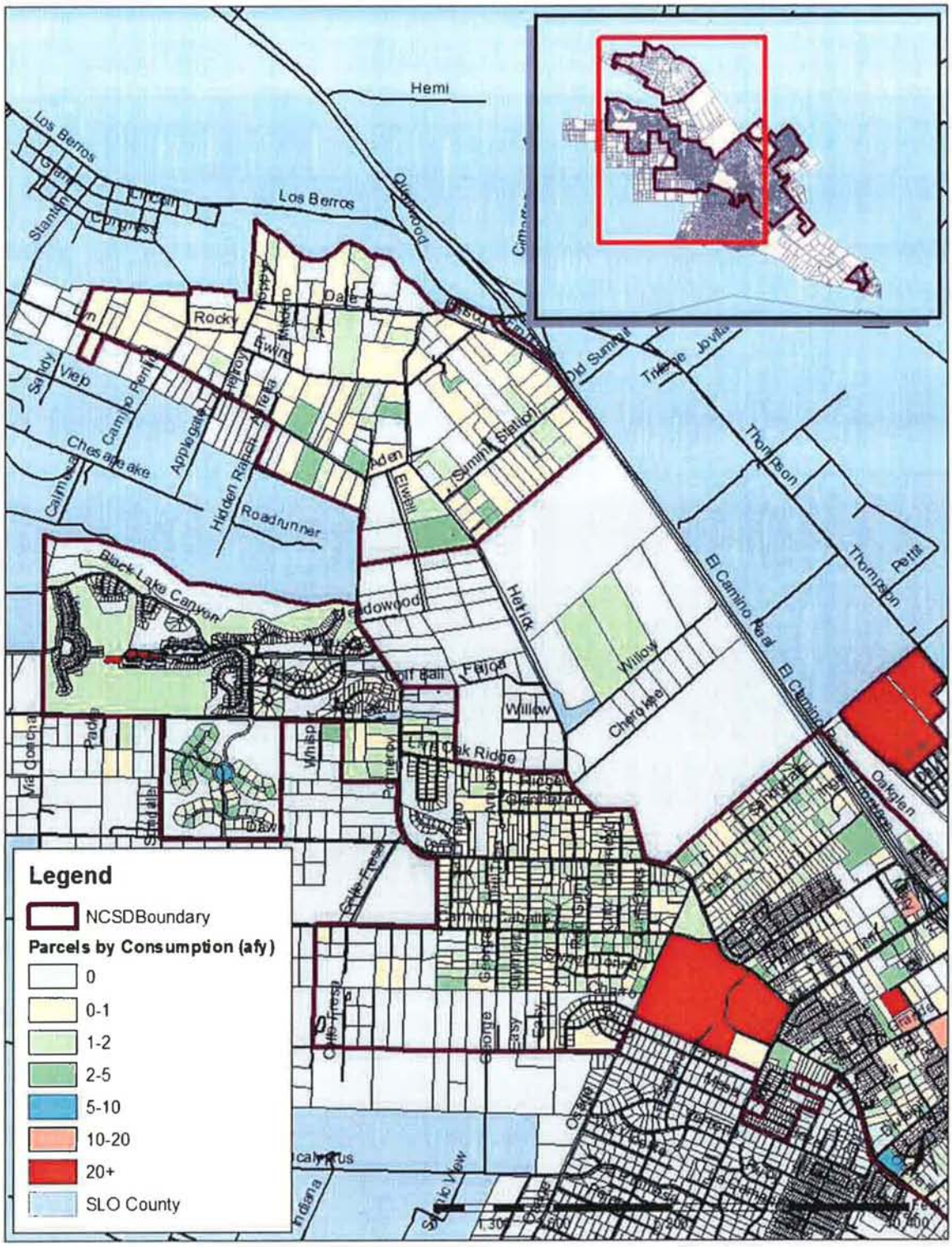
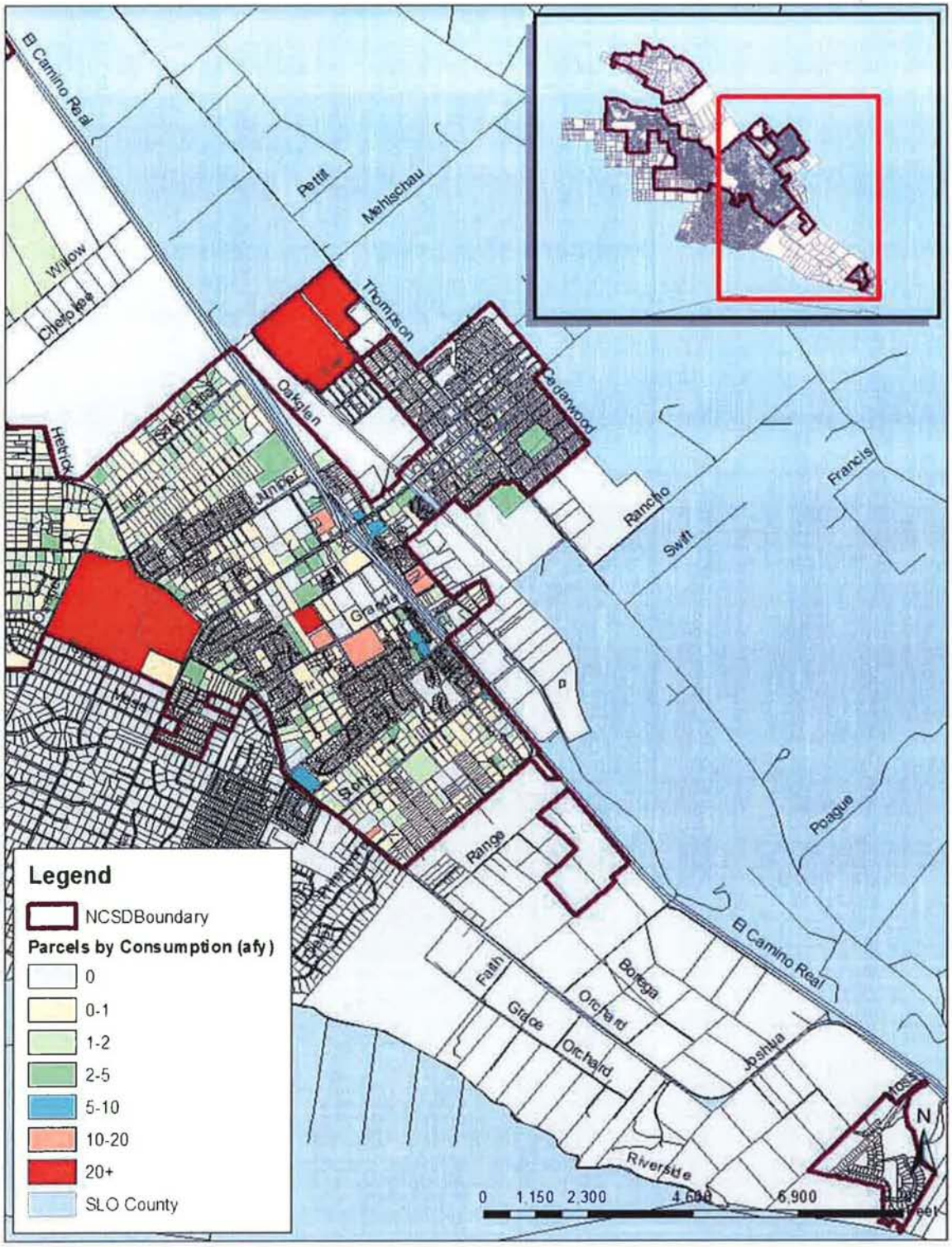


Figure 17. Historical Consumption by Parcel (Southern Section)



4 WATER SUPPLY AND DEMAND COMPARISON

The comparison of supply and demand in the following tables portrays an equal supply-to- demand ratio every year. Water supply is described in more detail in Section 2 and water demand is described in more detail in Section 3. Figure 18 summarizes current and projected water use through 2030 considering the projected reduction in per capita demand as described in Section 3.2. The projected demands reflect a reduction of demand between 2015 and 2020 as a result of compliance with the per capita water use interim target (2015) and target water use (2020) identified in the Daily Per Capita Water Use Technical Memorandum (Appendix A. Daily Per Capita Water Use Technical Memorandum. After a period of reduced per capita water use, the population increases, creating a larger gross demand.

Figure 18. Current and Projected Water Use

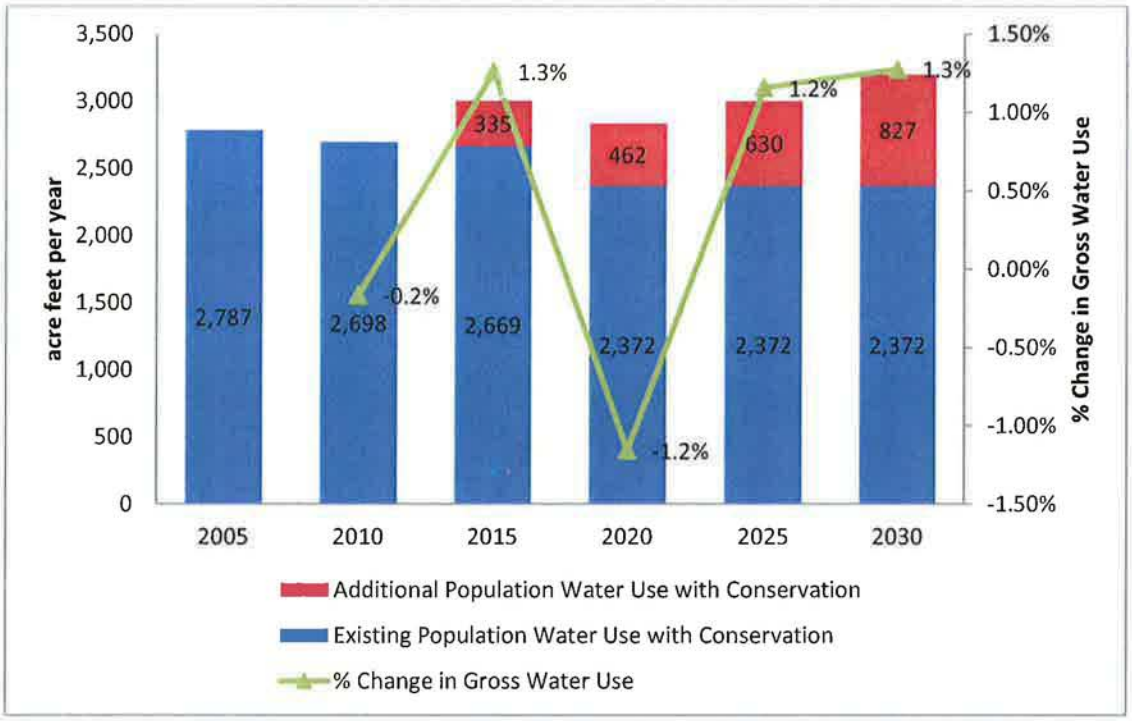


Table 27. Projected Normal Year Water Supply (afy)

	2010	2015	2020	2025	2030
Supply (afy)	2,771	2,950	2,783	2,948	3,141
% of year 2010	100%	106%	100%	106%	113%

Table 28. Projected Normal Year Demand (afy)

	2010	2015	2020	2025	2030
Demand	2,771	2,950	2,783	2,948	3,141
% of year 2010	100%	106%	100%	106%	113%

Table 29. Projected Normal Year Supply and Demand Comparison (afy)

	2010	2015	2020	2025	2030
Supply totals	2,771	2,950	2,783	2,948	3,141
Demand totals	2,771	2,950	2,783	2,948	3,141
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

4.1 SINGLE DRY WATER YEAR SCENARIO

Table 30 through Table 32 summarize NCSD's projected supply and demand during a single dry year.

Table 30. Projected Single Dry Year Supply (afy)

	2010	2015	2020	2025	2030
Supply	2,771	2,950	2,783	2,948	3,141
% of projected normal	100%	100%	100%	100%	100%

Table 31. Projected Single Dry Year Demand (afy)

	2010	2015	2020	2025	2030
Demand	2,771	2,950	2,783	2,948	3,141
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 32. Projected Single Dry Year Supply and Demand Comparison (afy)

	2010	2015	2020	2025	2030
Supply totals	2,771	2,950	2,783	2,948	3,141
Demand totals	2,771	2,950	2,783	2,948	3,141
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

4.2 MULTIPLE DRY WATER YEARS SCENARIO

Table 33 through Table 44 summarize NCSD's projected supply and demand during a multiple dry year periods.

Table 33. Multiple Dry Year Supply ending in 2015 (afy)

	2011	2012	2013	2014	2015
Supply[1]	2,806	2,841	2,877	2,913	2,950
% of projected normal	100%	100%	100%	100%	100%

[1] It is assumed that the WIP will be implemented by 2015

Table 34. Multiple Dry Year Demand ending in 2015 (afy)

	2011	2012	2013	2014	2015
Demand[1]	2,806	2,841	2,877	2,913	2,950
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

[1] Demand data from HDR UWMP Demand Tables

Table 35. Multiple Dry Year Supply and Demand Comparison ending in 2015 (afy)

	2011	2012	2013	2014	2015
Supply totals	2,806	2,841	2,877	2,913	2,950
Demand totals	2,806	2,841	2,877	2,913	2,950
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Table 36. Multiple Dry Year Supply ending in 2020 (afy)

	2016	2017	2018	2019	2020
Supply[1]	2,919	2,887	2,854	2,819	2,783
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

[1] It is assumed that the WIP will be implemented by 2015 and that deliveries will be increased to 2,500 afy by 2016 and, 3,000 afy by 2020.

Table 37. Multiple Dry Year Demand ending in 2020 (afy)

	2016	2017	2018	2019	2020
Demand	2,919	2,887	2,854	2,819	2,783
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 38. Multiple Dry Year Supply and Demand Comparison ending in 2020 (afy)

	2016	2017	2018	2019	2020
Supply totals	2,919	2,887	2,854	2,819	2,783
Demand totals	2,919	2,887	2,854	2,819	2,783
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Table 39. Multiple Dry Year Supply ending in 2025 (afy)

	2021	2022	2023	2024	2025
Supply	2,815	2,848	2,881	2,914	2,948
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 40. Multiple Dry Year Demand ending in 2025 (afy)

	2021	2022	2023	2024	2025
Demand	2,815	2,848	2,881	2,914	2,948
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 41. Multiple Dry Year Supply and Demand Comparison ending in 2025 (afy)

	2021	2022	2023	2024	2025
Supply totals	2,815	2,848	2,881	2,914	2,948
Demand totals	2,815	2,848	2,881	2,914	2,948
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Table 42. Multiple Dry Year Supply ending in 2030 (afy)

	2026	2027	2028	2029	2030
Supply	2,986	3,024	3,062	3,101	3,141
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 43. Multiple Dry Year Demand ending in 2030 (afy)

	2026	2027	2028	2029	2030
Demand	2,986	3,024	3,062	3,101	3,141
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 44. Multiple Dry Year Supply and Demand ending in 2030 (afy)

	2026	2027	2028	2029	2030
Supply totals	2,986	3,024	3,062	3,101	3,141
Demand totals	2,986	3,024	3,062	3,101	3,141
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

4.3 RESOURCE MAXIMIZATION AND IMPORT MINIMIZATION

NCSD is part of the Nipomo Mesa Management Area (NMMA) within the Santa Maria Groundwater Basin, and as such it coordinates with Northern Cities Management Area (NCMA) and Santa Maria Valley Management Area (SMVMA) to manage water resources. Each Management Area submits an annual report to the Court, which disseminates data and updates used to analyze the most prudent use of the Basin's groundwater.

The District has reduced its water use in the past five years and has plans to further reduce its water use as discussed in Section 3.2.1. The District also amended its annexation policy to require potential customers within the District's Sphere of Influence (SOI) to bring their own water.

5 RECYCLED WATER PLAN

5.1 INTRODUCTION

The Recycled Water Plan details the District's ongoing and planned efforts for recycled water use. Recycled water as set forth in Title 22, Division 4 of the California Code of Regulations is water which, as a result of treatment of wastewater, is suitable for a direct beneficial use or a controlled use that otherwise would not occur. The UWMP Act requires NCSD to include the following information in the Recycled Water Plan:

- Summary of coordination with local water, wastewater, groundwater and planning agencies to develop a recycled water plan for the area
- Description of the wastewater collection and treatment systems in the service area, a quantification of the amount of wastewater collected and treated and methods of disposal
- Description of the quantity of treated wastewater that meets recycled water standards
- Description of current recycled water usage
- Description of potential uses of recycled water
- Projection of recycled water use
- Description of actions and incentives in place to encourage recycled water use
- A plan for optimizing recycled water use

5.2 LOCAL AGENCY COORDINATION

The District does not plan on increasing its recycled water use as discussed in section 5.5. As a result, there is very little coordination with local and regional agencies. The Regional Water Quality Control Board (RWQCB) is the entity responsible for enforcing water quality standards for the District's two treatment facilities. The District works with this regional agency closely, and the RWQCB was provided a copy of this plan.

5.3 WASTEWATER SYSTEM DESCRIPTION

NCSD operates two wastewater treatment facilities. Blacklake Wastewater Treatment Plant (Blacklake WWTP) collects and treats wastewater from the Blacklake sewer system. The Southland WWTF collects and treats wastewater from much of the District and some properties outside of the NCSD boundary. Table 45 shows the amount of wastewater collected from both facilities and the amount that is recycled. A portion of the community is not sewered and utilizes septic systems.

The Blacklake system treats wastewater through secondary treatment and recycles the wastewater in the Blacklake golf course water hazards. From the water hazards, water is extracted as necessary to irrigate the course.

The Southland WWTF carries out secondary treatment. The treated water is disposed of in percolation ponds on-site. Since the treated wastewater percolates into the ground, it is believed that the water ultimately serves to recharge the groundwater basin. The District is planning to treat this water to recycled water standards. However, the time of implementation and amount of recycled water production is beyond the planning horizon of this UWMP. Wastewater recycling and recharge alternatives are evaluated in AECOM's Preliminary *Screening Evaluation of Southland Wastewater Treatment Facility Disposal Alternatives,* 2009 (23). The District has no formal plan to implement any further recycled wastewater programs other than the Blacklake golf course recycled water irrigation for the timeline of this UWMP, but will in the future.

Table 45. Wastewater Collected and Recycled

Wastewater Collection and Treatment System	2005	2010	2015	2020	2025	2030
Southland Wastewater Treatment Facility Average Annual Flow (afy)[1]	640	886	1,132	1,378	1,624	1,870
Blacklake (afy)	60	71	71	71	71	71
Quantity that meets recycled water standard (afy)[2]	60	71	71	71	71	71

[1] Data interpolated from the Southland WWTF Master Plan Amendment #1 **(24)**

[2] Assumes the amount of wastewater recycled in 2009 will be recycled in all years to follow. All water processed through the Blacklake WWTF meets reclaimed water permit conditions.

5.4 RECYCLED WATER SUPPLY AND USES

Blacklake WWTP is the only place where wastewater is recycled in the District. The method of disposal for the Southland WWTF is through percolation ponds. Table 46 shows the existing and projected amounts of wastewater disposed per year at Southland WWTF.

Table 46. Disposal of Wastewater (non-recycled)

Method of Disposal	Treatment Level	2010	2015	2020	2025	2030
Percolation Ponds (afy)[1]	Secondary	886	1,132	1,378	1,624	1,870

[1] Data interpolated from the Southland WWTF Master Plan Amendment #1 **(24)**

In 2009, the District recycled about 60 afy at the Blacklake WWTP. Table 47 shows the amount of water recycled currently and the projected future amounts. There are no current plans to expand the Blacklake WWTP and as a result, the amount of water recycled in 2009 is assumed to be the amount recycled in the future, through 2030.

Table 47. Projected Future Recycled Water Use in Service Area

	Treatment Level	2010	2015	2020	2025	2030
Golf Course Irrigation (afy)[1]	Disinfected Secondary	71	71	71	71	71

[1] Assumes data from District staff for 2009 will be the same for projected future recycled water use.

As shown in Table 48, the projected amount of recycled water use from 2005 was higher than the actual 2010 amount.

Table 48. Recycled Water Use 2005 Projection Compared to Actual

User type	2005 Projection for 2010	2010 actual use[1]
Golf Course Irrigation (afy)	75	71

[1] 2010 actual recycled water use assumed to be the same as 2009 data.

The actual and potential recycled water uses shown in Table 48 stay the same because the District has no specific plan yet to increase the use of recycled water.

5.5 RECYCLED WATER USE OPTIMIZATION

The alternatives for recycling or recharging the treated water from the Southland WWTF were analyzed in AECOM's *Preliminary Screening Evaluation of Southland Wastewater Treatment Facility Disposal Alternatives 2009* (23) and irrigation was evaluated as part of the *Evaluation of Supplemental Water Alternatives* study conducted by Boyle Engineering Corporation in 2007 (15). The study determined the use of recycled water as a substitute for irrigating with well water resulted in a small decrease in the net water extracted from the groundwater basin. Use of recycled water to recharge the aquifer was also studied. This alternative resulted in no increase in supply to the District. The District does plan to eventually carry out tertiary treatment.

6 WATER SHORTAGE CONTINGENCY PLAN

6.1 INTRODUCTION

The District's involvement with the Santa Maria Groundwater Basin Litigation and the legal requirements of the Adjudication complicate the District's ability to fulfill the UWMP Act's requirements. The Adjudication mandates two stages of action (Table 50). The District does have an Ordinance No. 2009-113 which outlines different stages of action to address a water shortage. The District Water Code currently only shows one stage of action which involves voluntary conservation. Mandatory conservation stages and conditions, prohibitions, reduction methods, and penalties were suspended by the NCSD Board of Directors through Resolution No. 2008-1098 in July of 2008. The rationale for the suspension is that it is not fair for the customers of NCSD to bear mandatory measures of conservation and associated costs when the rest of the members of the NMMA are not. The suspension is subject to change and can be overturned at any time by the Board of Directors. Therefore, the measures from the suspended ordinance are shown in this UWMP to fulfill the requirements of the UWMP Act as well as to plan for future water shortages. It is assumed during a severe water shortage the resolution would most likely be amended to reinstitute the mandatory conservation measures in coordination with the NMMA TG.

6.2 STAGES OF ACTION

Currently the District only has one water conservation stage shown as Stage No. I in Table 49. The other stages are suspended as discussed previously in section 6.1.

Table 49. Water Conservation Stages

Stage No.	Water Supply Conditions	% Shortage
I.	Voluntary Conservation shall be requested annually on May 15th. Stage I will be rescinded on October 15th or at any time that prevailing conditions indicate a more restrictive stage is necessary.	up to 15%
II.[1]	Conservation shall be required when pumpage is in excess of 1.5mgd for four consecutive days or pumpage in excess of 1.9 mgd for one day. Upon termination of Stage II, Stage I becomes operative.	15%-30%
III.[1]	Conservation shall be required when pumpage is in excess of 1.9mgd for four consecutive days; or 2.1mgd for one day; or continually failing reservoir levels which do not refill above fifty percent overnight. Stage III shall be terminated when all of the conditions listed as triggering events have ceased to exist for a period of five consecutive days. Upon termination of Stage III, Stage II becomes operative.	up to 50%

[1]Stages No. II and III from Ordinance 92-65 were suspended by Resolution No. 2008-1098. Res. No 2008-1098, § 1a-d, adopted July 23,2008, suspended §§ 3.24.030(8)(C) related to stage II and Stage III mandatory conservation, 3.24.04 related to stage implementation, 3.24.060 related to violation and enforcement, and Exhibit "A" to Chapter 3.24 that establishes the policy for implementing the emergency conservation plan which derived from Ord. No. 92-65, §§ 3, 4, 6,1992. Chapter 3.24 changes were revised in Ordinance 2009-113 by the NCSD Board of Directors and can be reinstituted upon approval by the Board.

The NMMA's conservation stages are outlined in Table 50 to show the stages of conservation required by the Stipulation in the Response Plan for Potentially Severe and Severe Water Shortage Conditions (Response Plan). Currently the NMMA is in the Potentially Severe condition and as a result voluntary conservation is required. The Response Plan for a Severe Water Shortage is discussed in Section 6.5.

Table 50. NMMA Water Supply Conservation Stages

Stage #		Water Supply Conditions	
		Starts	Ends
I. Potentially Severe Water Shortage	Inland Area	If the Key Well Index is lower than 31.5 ft msl for two consecutive Spring measurements	Key Well Index is above 31.5 ft msl for two consecutive Spring measurements, or Key Well Index is 36.5 ft msl or higher in any Spring measurement
	Coastal Area	If the Spring groundwater elevation drops below threshold, or chloride concentration exceeds 250mg/L	Spring groundwater elevations are above threshold, and chloride concentration at or below 250 mg/L for two consecutive Spring measurements
II. Severe Water Shortage	Inland Area	Key Well Index is less than 16.5 ft msl using Spring measurements	Key well Index is greater than 26.5 ft msl using Spring measurements
	Coastal Area	Chloride concentration exceeds 500 mg/L	Chloride concentration is less than 500 mg/L for two consecutive Spring measurements

Source: NMMA Shortage Conditions and Response Plan 3/26/2009 (26)

6.3 THREE-YEAR MINIMUM WATER SUPPLY

The UWMP Act requires the District to quantify the minimum water supply available during the next three-years (e.g., 2011-2013) based on the driest three-year historic sequence for the water supply. Based on historic pumping, the District three-year minimum supply shown in Table 51 will equal 100% of the demand for the next three-years, unless the NMMA TG declares a Severe Water Shortage followed by pumping limitations. The demand and supply for 2011-2013 includes conservation.

Table 51. Three-year Minimum Water Supply

Source	2011	2012	2013
NMMA Groundwater Supply[1]	2,806	2,841	2,877
NCSD Nipomo Valley Groundwater Supply[1]	0	0	0
Santa Maria WIP	0	0	0
Total	**2,806**	**2,841**	**2,877**

[1] Supply is assumed to equal 100% of demand.

6.4 CATASTROPHIC SUPPLY INTERRUPTION PLAN

6.4.1 Introduction

The UWMP Act requires a catastrophic supply interruption plan. This plan looks at the vulnerability of each source and distribution system to events such as wildfires, flooding, earthquakes, landslides, rockslides, other natural disasters, and unforeseen emergencies. The actions taken to address each catastrophe are presented in Table 52.

Table 52. Catastrophic Supply Interruption Actions [1]

Possible Catastrophe	Summary of Actions
Wildfire	Notification of affected customers and implementation of voluntary and mandatory rationing, only if necessary, in the affected portions of the service area.
Flooding	Isolation, as needed, to minimize the area affected by flooding damage. Large scale system impact is not expected from flooding events.
Earthquake/ Fault Rupture/ Liquefaction	Emergency response plan procedures would go into effect. These procedures would insure any damaged sections of the distribution system were isolated; customers would be notified of the need to limit use; groundwater pumping would be established using backup generators if necessary; and water supply would be supplemented using water in storage.
Landslides/ Rockslides	Given the location and nature of NCSD facilities, these events are not considered significant threats to the NCSD water production or distribution system.

[1] Adapted from the 2005 NCSD UWMP.

The District is subject to the San Luis Obispo County Emergency Operations (27), which is a County-wide emergency response plan. NCSD has an Emergency Response Plan which provides guidance for emergency situations (28). The contents of the plan include information on the chain of command to be followed at the field response, local government, operational area, regional, and state levels. Contact information for public health and safety officials, inventories of equipment suitable for emergency repairs, procedures for notifying the public, training, drills, and restoration and recovery actions are also included in the plan.

6.4.2 Minimum Storage Requirements

According to the Water and Sewer Master Plan 2007 (13) the District is required by State Law (Title 22 Requirements) to maintain sufficient water storage capacity within its system to meet three basic needs: fire storage, emergency storage, and equalization storage.

The fire storage is estimated to be a minimum of 540,000 gallons to fight a fire for a duration of three hours at 3,000 gpm. In the Water and Sewer Master Plan it is assumed that the minimum value required is equal for both existing and future conditions.

The emergency water storage is calculated by multiplying population by 50 gallons per day for three days. Table 53 shows the amounts of emergency water storage required from 2010-2030. The District is allowed to meet its emergency water storage requirements by having a sufficiently sized well on emergency backup power. The Sundale Well has an electric motor and standby generator. The generator is a 300kw generator on a trailer for an emergency power situation. The District also has outfitted its Via Concha and Eureka Wells with manual transfer switches and generator receptacles. The District has a pre-negotiated contract with Quinn Generators for an emergency generator source. The Sundale Well is capable of producing 3.71 MG over a three-day period, which more than satisfies the minimum emergency storage supply requirement.

Table 53. Emergency Water Storage Requirement

Year	Population	Emergency storage requirement (gal)
2010	10,815	1,622,250
2015	11,651	1,747,650
2020	12,367	1,855,050
2025	13,127	1,969,050
2030	14,003	2,100,450

Equalization storage is required to maintain availability of demand during peak conditions when system demands are greater than that being fed directly from supply sources. The District's Water and Sewer Master Plan (13) estimates equalization storage using the formula: (1.5 – 1) times maximum day demand (gpm) times 14 hours times 60 minutes per hour. Estimates of equalization storage required through the planning horizon are shown in Table 54.

Table 54. Equalization Storage Requirement

year	demand (afy)	Average Daily Demand (MGD)	Maximum Daily Demand (MGD)	Maximum Day Demand (gpm)	Equalization Storage (MGal)
2010	2,771	2.47	4.20	2918	1.23
2015	2,937	2.62	4.45	3093	1.30
2020	2,772	2.47	4.20	2919	1.23
2025	2,936	2.62	4.45	3092	1.30
2030	3,128	2.79	4.74	3294	1.38

The amount of storage available is 3.68 MG of useful storage (13). The amount of proposed water available from the Sundale Well on an emergency basis over the course of three days is limited to the amount of required emergency storage, which acts to offset the emergency storage requirement. Table 55 shows that there is a surplus of storage for fire, emergency, and equalization requirements.

Table 55. Minimum Storage Requirement and Available Storage

	2010	2015	2020	2025	2030
Fire (gal)	540,000	540,000	540,000	540,000	540,000
Equalization (gal)	1,225,572	1,298,863	1,225,985	1,298,507	1,383,550
Emergency (gal)	1,622,250	1,747,650	1,855,050	1,969,050	2,100,450
Total minimum storage requirement	3,387,822	3,586,513	3,621,035	3,807,557	4,024,000
Storage available	3,680,000	3,680,000	3,680,000	3,680,000	3,680,000
Sundale Well storage credit	1,622,250	1,747,650	1,855,050	1,969,050	2,100,450
Surplus (deficit) of storage	1,914,428	1,841,137	1,914,015	1,841,493	1,756,450

6.4.3 Emergency Connections

If NCSD is not able to meet its emergency demands with its available supply, existing connections with other water purveyors could be utilized. NCSD has emergency connections with Golden State Water Company and Woodlands Mutual Water Company. However, these purveyors' distribution systems have a lower hydraulic grade than the District's distribution systems.

6.4.4 Design and Construction Standards

The District's facilities are designed and constructed to meet or exceed American Water Works Association standards in addition to local, state, and federal code. These standards limit the potential for damage to the District's facilities. The most vulnerable portions of the distribution system (e.g., pipeline crossing unstable soils, pipelines placed on bridges) have redundant interconnections. Redundant systems are also included in the District's groundwater pumping facilities.

6.5 MANDATORY PROHIBITIONS AND RESTRICTIONS

The Stipulation and Judgment incorporate the NCSD supplemental water project to import 2,500 afy of supplemental water to the NMMA with financial participation from WMWC, GSWC, and RWC. While the supplemental water is not available, the following actions are required by the Stipulation:

> *VI(A)(5). ...In the event that Potentially Severe Water Shortage Conditions or Severe Water Shortage Conditions are triggered as referenced in Paragraph VI(D) before Nipomo Supplemental Water is used in the NMMA, NCSD, [GSWCS], Woodlands and RWC agree to develop a well management plan that is acceptable to the NMMA Technical Group, and which may include such steps as imposing conservation measures, seeking sources of supplemental water to serve new customers, and declaring or obtaining approval to declare a moratorium on the granting of further intent to serve or will serve letters.6*
>
> *VI(D)(1b) Responses [Severe]. As a first response, subparagraphs (i) through (iii) shall be imposed concurrently upon order of the Court. The Court may also order the Stipulating Parties to implement all or some portion of the additional responses provided in subparagraph (iv) below.*

(iii) NCSD, RWC, SCWC, and Woodlands (if applicable as provided in Paragraph VI(B)(3) above) shall implement those mandatory conservation measures prescribed by the NMMA Technical Group and approved by the Court.

(iv) If the Court finds that Management Area conditions have deteriorated since it first found Severe Water Shortage Conditions, the Court may impose further mandatory limitations on Groundwater use by NCSD, SCWC, RWC and the Woodlands. Mandatory measures designed to reduce water consumption, such as water reductions, water restrictions, and rate increases for the purveyors, shall be considered.

(v) During Severe Water Shortage Conditions, the Stipulating Parties may make agreements for temporary transfer of rights to pump Native Groundwater, voluntary fallowing, or the implementation of extraordinary conservation measures. Transfer of Native Groundwater must benefit the Management Area and be approved by the Court.10

The mandatory limitations on groundwater use during a Severe Water Shortage are yet to be determined by the NMMA TG. It is assumed that the suspended ordinance shown in Table 56 would be similar to prohibitions during a Severe Water Shortage recommended by the NMMA TG or imposed by the Court.

Table 56. Water Use Prohibitions

Stage When Prohibition Becomes Necessary	Prohibitions
Stage I	Customers of the Nipomo Community Services District are requested to voluntarily limit the amount of water used from May 15th to October 15th of each year to that amount absolutely necessary for health and business. A fifteen percent reduction in water use is requested.
Stage II[1]	In addition to prohibitions and restrictions previously listed: 1. All outdoor irrigation of vegetation shall occur only between the hours of six p.m. and nine a.m. on designated days and must utilize hand held hoses, drip irrigation or permanently installed automatic sprinkler systems; 2. The washing of automobiles, trucks, trailers, boats and other types or mobile equipment not occurring upon the immediate premises of commercial car washes and commercial service stations and not in the immediate interest of the public health, safety and welfare shall be prohibited; 3. Use of water from fire hydrants shall be limited to fire suppression and/or other activities immediately necessary to maintaining health, safety and welfare of the citizens within the boundaries of the Nipomo Community Services District.
Stage III[1]	In addition to prohibitions and restrictions previously listed: 1. Use of potable water to irrigate grass, lawns, groundcover, shrubbery, crops, vegetation, ornamental trees, etc., shall be prohibited; 2. Quantity of water used shall not exceed seventy-five gallons per day per person. (Ord. 92-65 3, 1992)

[1]Stages No. II and III from Ordinance 92-65 were suspended by Resolution No. 2008-1098. Res. No 2008-1098, § 1a-d, adopted July 23,2008, suspended §§ 3.24.030(8)(C) related to stage II and Stage III mandatory conservation, 3.24 04 related to stage implementation, 3.24.060 related to violation and enforcement, and Exhibit "A" to Chapter 3.24 that establishes the policy for implementing the emergency conservation plan which derived from Ord. No. 92-65, §§ 3, 4, 6,1992. Chapter 3.24 changes were revised in Ordinance 2009-113 by the NCSD Board of Directors and can be reinstituted upon approval by the Board.

6.6 CONSUMPTION REDUCTION METHODS

The methods to reduce consumption are outlined in Table 56 and they coincide with the stages and percent of reduction outlined in Table 49. The existing District Water Code Chapter 3.24.050 does offer some water saving devices and policies that can be used to reduce consumption:

- All customers are encouraged to install and use the following water conservation devices:
  - Drip irrigation
  - Low-flush toilets 1.28 gallons per flush or less
  - Low-flow shower heads 2.5 gallons per minute or less
  - Bathroom sink aerators 2 gallons per minute or less

- No person, corporation or association shall be given relief on appeal unless the customer has installed all water-saving devices which are feasible.

The County Code requires a toilet-retrofit-at-time-of-sale, which is co-administered by NCSD Conservation and Public Outreach (NCSD-CPO) for Nipomo Mesa Water Conservation Area (NMWCA) (includes all of NCSD), and San Luis Obispo County Planning and Development (SLO-PD) (Title 8 Amendment).

The District also implements various programs, tools, and educational strategies to reduce consumption. The conservation strategies described in section 3.2 are encouraged to reduce demand. The following are some programs used to help reduce water demand:

- High efficiency washer rebate program
- Water audit program
- Turf-replacement program
- Quarterly newsletter
- Outreach workshops
- Advertising
- Events and item giveaways
- Post cards, brochures mailed out to NCSD customers
- Conservation website
- Door hangers for water waste and other water issues

6.7 PENALTIES FOR EXCESSIVE USE

The District's penalties and charges are suspended by Resolution No. 2008-1098. They are shown in Table 57.

Table 57. Penalties and Charges

Penalty or Charge[1]	Stage When Penalty Takes Effect
A copy of the notice will be left with someone at the establishment, or left in a conspicuous place, at the time of the violation observance.	First Violation
A copy of the violation notice will be sent to the address of the violator by certified mail, return receipt requested, with a letter explaining the gravity of the situation and the penalties for future violations.	Second Violation
A one gallon per minute flow restriction will be installed at the violators meter and left in place for seventy-two hours. Installation and removal charges of thirty dollars will be assessed to the account of the violator.	Third Violation
The water meter will be removed from the premises of the violator. The meter will be reinstalled after the payment of a fifty-dollar reconnection charge. (Ord. 92-65 6, 1992)	Fourth Violation

[1]These penalties and charges from Ordinance No. 2009-113 are currently suspended by Resolution No. 2008-1098 by the NCSD Board of Directors and can be reinstituted upon approval by the Board.

Currently, the Water Code states NCSD customers shall not waste water. The Policy is specified below:

3.24.020 - Prohibition of certain uses.

No customer shall waste water. As used herein the term "waste water" means:

1. *Allow potable water to escape from breaks within the customer's plumbing system for more than four hours after the customer is notified or discovers the break.*
2. *Use of potable water for sewer system maintenance or fire protection training without prior approval by the District.*

There are no penalties or charges to enforce this policy.

6.8 REVENUE AND EXPENDITURE ANALYSIS

The percent reductions outlined in Table 49 are used to show hypothetical percent reductions of 15%, 30%, and 50% in Table 58. NCSD's Operating and Non-Operating Budgets Fiscal Year 2009-2010 (29) line item data was used to calculate the revenue and expenditure analysis in Table 58. The sub categories of the 'Revenues' category and the 'Expenditures' category shown in Table 58 are the only categories in the budget which would, presumably, change with a water use reduction. Therefore, the sub categories are the only categories calculated to have a roughly proportional change in monetary value with the percent change of water use. Those select changes are then combined in the 'total' category. That 'total' is combined with all of the categories from the Budget in the' '09-'10 total' category to reflect the overall difference. The expenditures and revenues are summed to create the 'surplus (deficit)'. The 'surplus (deficit)' is then combined with the 'estimated account balance 7/1/09' to produce the 'estimated account balance 7/1/10'. The resulting estimated balance shows there are more than enough funds to cover a 15%-50% reduction of water use. This projection is very rough and does not account for multiple details that are included in a budget calculation. It is meant to show that extreme reduction of water use would have a substantial effect on the budget, especially if spanned over multiple years.

Table 58. Revenue and Expenditure Projections

Revenues	Total '09-'10 [1]	15% reduction	30% reduction	50% reduction
water- usage charges	$3,039,000	$2,583,150	$2,127,300	$1,519,500
sewer revenues	$1,872,000	$1,591,200	$1,310,400	$936,000
total (only categories above)	$4,911,000	$4,174,350	$3,437,700	$2,455,500
'09-'10 total revenues	$7,656,841	$6,920,191	$6,183,541	$5,201,341
Expenditures				
lab tests and sampling	$78,000	$89,700	$101,400	$117,000
outside services	$40,020	$46,023	$52,026	$60,030
water conservation/ recycling program	$125,500	$144,325	$163,150	$188,250
total (only categories above)	$243,520	$280,048	$316,576	$365,280
'09-'10 total expenditure	$6,754,903	$6,791,431	$6,827,959	$6,876,663
Surplus (deficit)	$901,938	$128,760	($644,418)	($1,675,322)
Estimated funds available				
estimated account balance 7/1/09	$9,700,730	$9,700,730	$9,700,730	$9,700,730
Surplus (deficit)	$901,938	$128,760	($644,418)	($1,675,322)
estimated account balance 7/1/10	$10,602,668	$9,829,490	$9,056,312	$8,025,408

[1]Data adapted from NCSD's Operating and Non-Operating Budgets Fiscal Year 2009-2010 (29)

6.9 DRAFT ORDINANCE

<Insert copy of Draft Water Shortage Contingency Plan ordinance here.>

7 ADOPTION AND IMPLEMENTATION OF UWMP

The Final 2010 UWMP was formally adopted by the Board of Directors for NCSD on _____, 2010.

7.1 ADOPTION RESOLUTION

A copy of the Adoption Resolution is included here:

<Insert Adoption Resolution Here>

7.2 IMPLEMENTATION OF THE RECYCLED WATER PLAN

The Recycled Water Plan included in this UWMP is being implemented as planned. The current use of recycled water is the furthest extent to which the District will pursue recycled water uses at this time. The District conducted an Evaluation of Southland WWTF Disposal Alternatives and concluded it was not economically feasible to increase the use of recycled water at this time (23).

7.3 IMPLEMENTATION OF THE CONSERVATION BEST MANAGEMENT PRACTICES

The Best Management Practices Report (BMP Report) attached in Appendix E is being implemented as planned. Because the District is a member of the CUWCC it does not need to include a Demand Management Measures section in this UWMP. The DMMs listed in the 2005 UWMP are being implemented as planned or exceed the planned implementation. The BMP covers all of the existing programs and policies implemented by the District and their implementation program to fulfill the requirements of the BMP. <THIS SECTION TO BE ELABORATED UPON THE COMPLETION OF THE BMP ACTIVITY REPORT BY THE DISTRICT'S WATER CONSERVATION COORDINATOR >

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APPENDIX A. DAILY PER CAPITA WATER USE TECHNICAL MEMORANDUM

Technical Memorandum

WSC
WATER SYSTEMS CONSULTING, INC.

Date: 10/19/2010

To: Mr. Don Spagnolo
Nipomo Community Services District
148 S. Wilson Street
Nipomo, CA 93444

Phone: (805) 929-1133

Prepared by: Jeffery Szytel, PE

Project: NCSD 2010 Urban Water Management Plan Update

SUBJECT: **BASELINE DAILY PER CAPITA WATER USE – FINAL (REVISED 10/19/2010)**

This memorandum presents the methodology used to calculate baseline daily per capita water use for the Nipomo Community Services District (NCSD or the District) as required by Senate Bill x 7-7 (SB 7) and the California Water Code (as amended). The water use target methodology is based on Method 1 from the draft Urban Water Use Target Technical Methodologies report (Technical Methodologies report) prepared by the California Department of Water Resources (DWR). The baseline daily per capita water use is used to calculate the urban water use target (equal to 80% of baseline daily per capita water use) and the interim urban water use target (equal to 90% of baseline daily per capita water use). These values will be reported in the District's 2010 Urban Water Management Plan (UWMP). A calculation of baseline and water use targets based on Method 3 from the Technical Methodologies report is also presented to show a comparison between Nipomo's baseline water use and the region's baseline use. Method 3 calculates the water use target as 95% of the applicable state hydrologic region target as stated in the draft 20x2020 Water Conservation Plan. Methods 2 and 4 from the Technical Methodologies report were not used for various reasons. Method 2 involves calculating the per capita daily water use by using the sum of performance standards applied to indoor residential use, landscaped area water use, and commercial, industrial, and institutional uses. Method 4 is an approach being developed by DWR and it will not be available until December 2010.

Background

On November 10, 2009, Governor Arnold Schwarzenegger signed SB 7 into law. The legislation requires all water suppliers to achieve a reduction in per capita water use of 20% by December 31, 2020, with an interim target of 10% reduction by December 31, 2015. The legislation requires each urban water supplier to develop, and include in its UWMP, estimates of: 1) baseline daily per capita water use; 2) urban water use target; 3) interim urban water use target; and 4) compliance daily per capita water use. The UWMP must also include bases for determining the estimates, with references to supporting data. However, SB 7 did not include a detailed description of the allowable methodologies for determining the required values. Instead, it required California Department of Water Resources (CA-DWR) to develop appropriate methodologies and criteria, and to make them available to water suppliers no later than October 1, 2010. In consideration of this delay, the bill extended the deadline for submission of the 2010 UWMP to July 1, 2011.

In connection with preparation of the District's 2010 UWMP update, NCSD hired Water Systems Consulting, Inc. (WSC) to develop the required estimates described by SB 7. To facilitate completion of the 2010 UWMP project by the end of 2010, the District directed WSC to apply methodologies consistent with those described in an earlier draft of the legislation, Preprint Assembly Bill No. 2, and proceed with developing the estimates prior to CA-DWR issuing guidance. The selected methodology includes the following basic steps:

1. Calculate average gross daily water use per capita, reported in gallons per capita per day, based on gross water use and service area population for a continuous 10-year period ending no earlier than December 31, 2004.
2. Calculate the urban water use target (equal to 80% of baseline daily per capita water use)
3. Calculate the interim urban water use target (equal to 90% of baseline daily per capita water use)
4. Calculate the compliance daily per capita water use (equal to the gross daily water use per capita during the final year of the reporting period (i.e. 2009))

Gross Water Use

SB 7 defines gross water use as:

> *"The total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following: (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier; (2) The net volume of water that the urban retail water supplier places into long-term storage; (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.; (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24."*

Subdivision (f) of Section 10608.24 states:

> *"An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use."*

The only water entering NCSD's distribution system is groundwater production. NCSD supplies recycled water to irrigate the golf course at Blacklake; however, it is accounted for separately. From 1994 through present, NCSD has not placed any water into long-term storage. NCSD has emergency connections with Golden State Water Company and Woodlands Mutual Water Company. The District provided flow records for deliveries to Golden State Water Company from 2000 through 2009. Since demand from NCSD's three designated agricultural customers will be incorporated into the District's UWMP, the agricultural water use may be incorporated into gross water use. Therefore, gross water use is taken as the District's total groundwater production less the amount conveyed to Golden State Water Company in any given year.

NCSD provided annual production records from January, 2000 through November, 2009 in Excel format, as well as CA-DWR Public Water System Statistics (DWR Annual Reports) from 1989 through 2009. NCSD also provided records of total volume of water conveyed to Golden State Water Company from 2000 through 2009. Table 1 summarizes NCSD's production from 1994 through 2009, the volume of water delivered to Golden State Water Company, and the annual gross water use estimates for those years. There were inconsistencies in total production

between the District's production spreadsheet and the DWR Annual Reports for the years 2002 and 2006. For 2002, the monthly production for December was excluded from the DWR Annual Report. For 2006, the DWR Annual Report shows 186.63 acre-ft produced in December, while the District's production spreadsheet shows 166.29 acre-ft. For 2002 and 2006, data from the District's production spreadsheet were used for gross water use.

Table 1. Summary of Gross Water Use for NCSD

Year	Annual Production from Production Spreadsheet, acre-feet/year	Annual Production from DWR Reports, acre-feet/year	Volume of water conveyed to Golden State Water Company, acre-feet/year	Gross Water Use, acre-feet/year
1994		1,718.00		1,718.00
1995		1,805.00		1,805.00
1996		1,934.70		1,934.70
1997		2,036.86		2,036.86
1998		1,909.74		1,909.74
1999		2,271.20		2,271.20
2000	2,414.51	2,414.51	17.57	2,396.94
2001	2,285.04	2,285.02	0.00	2,285.04
2002	2,709.32	2,520.79	0.00	2,709.32
2003	2,633.33	2,633.33	0.00	2,633.33
2004	2,907.83	2,907.83	0.25	2,907.58
2005	2,794.05	2,794.04	6.76	2,787.29
2006	2,706.42	2,726.77	40.08	2,666.34
2007	2,856.15	2,856.15	37.79	2,818.36
2008	2,755.23	2,755.24	2.33	2,752.90
2009		2,698.18	0.00	2,698.18

Population Estimates and Projections

San Luis Obispo County maintains several GIS datasets on their website that can be used for planning projects. A GIS shapefile of the 2000 census blocks was obtained from the County's data repository. This file has 2000 population in each of approximately 7,200 census blocks covering the County. Approximately 220 census blocks overlay some part of the District's service area or sphere of influence (SOI). Figure 1 shows the census blocks in relation to NCSD's service area boundary and SOI.

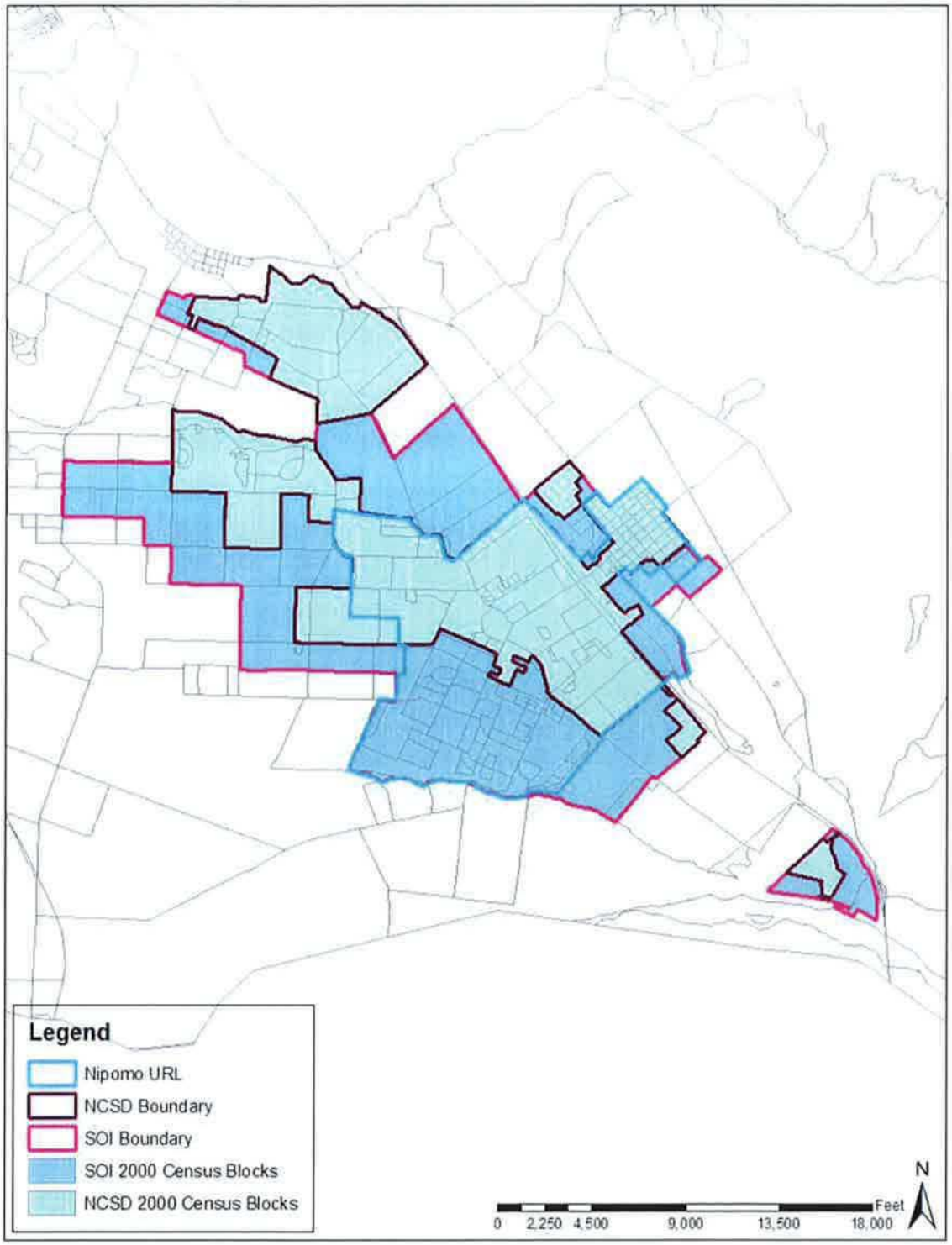
The County's data included a total population for each census block in the dataset based on the 2000 census. Actual population distribution within each census block can vary based on development and land use patterns. For the purposes of this analysis, the distribution of population within each census block was assumed to be uniform, and WSC calculated persons per acre for each census block. The NCSD service area boundary was intersected with the census block boundaries to calculate the area of each block within NCSD's service area. WSC then applied the persons per acre for each census block to the area of each block within NCSD's service area to calculate total

population within NCSD's service area. Table 2 shows the resulting estimate of population within the District's boundary for the year 2000.

Table 2. Estimated Population within NCSD Service Area for the year 2000

Area	2000 Population
NCSD Service Area	8,706

Figure 1. 2000 Census Blocks, Nipomo URL, NCSD Service Area Boundary, and SOI



Once the 2000 population was calculated, WSC used the number of residential connections given in the DWR Annual Reports to calculate a population per residential connection factor as shown in Table 3. This factor is much lower than NCSD's historical population per connection factor of 3.4. The historical factor of 3.4, which was used in the District's 2005 UWMP, appears to have been derived from County population data for "Nipomo". According to the County's planning staff, the "Nipomo" line item in their population estimates is based on the area within the Nipomo Urban Reserve Line (URL). As shown in Figure 1, the Nipomo URL does not coincide with the NCSD service area boundary, and includes large developed areas not served by the District. Therefore, the County's population estimates for "Nipomo" do not represent the population served by NCSD and should not be used to calculate population per connection or per capita demands.

Table 3. Population per Residential Connection

Year	# of Residential Connections	2000 Census Population	Population per Residential Connection
2000	3,183	8,706	2.74

The population per residential connection factor of 2.74 was applied to the number of residential connections for each year from 1994-2009, taken from the DWR Annual Reports, to estimate population in the District's service area for those years. Table 4 summarizes the resulting population estimates.

Table 4. Estimated Population Served within NCSD Service Area

Year	# of Residential Connections	Population per Residential Connection	Estimated Population Served within NCSD Service Area
1994	2,413	2.74	6,612
1995	2,526	2.74	6,921
1996	2,615	2.74	7,165
1997	2,721	2.74	7,456
1998	2,872	2.74	7,869
1999	3,037	2.74	8,321
2000	3,183	2.74	8,706
2001	3,283	2.74	8,995
2002	3,332	2.74	9,130
2003	3,353	2.74	9,187
2004	3,589	2.74	9,834
2005	3,703	2.74	10,146
2006	3,813	2.74	10,448
2007	3,893	2.74	10,667
2008	3,902	2.74	10,691
2009	3,947	2.74	10,815

As a check for the population estimates between 1994 and 2000, WSC calculated the total population within the District's service area in 1990 using the same methodology described above (using 1990 census data) and calculated interim year populations using linear interpolation. Figure 2 shows the 1990 census block boundaries, Table 5 shows the estimated population in 1990, and Table 6 compares the two estimates. The resulting population estimates varied by less than 3% in each year when compared to the estimates developed using NCSD's connection data. WSC opted to utilize annual population estimates based on NCSD's residential connection data and a uniform factor of 2.74 persons per connection to calculate per capita water use for the years 1994 through 2009.

Table 5. Estimated Population within NCSD Service Area for the year 1990

Area	1990 Population
NCSD Service Area	5,064

Figure 2. 1990 Census Blocks, Nipomo URL, NCSD Service Area Boundary, and SOI

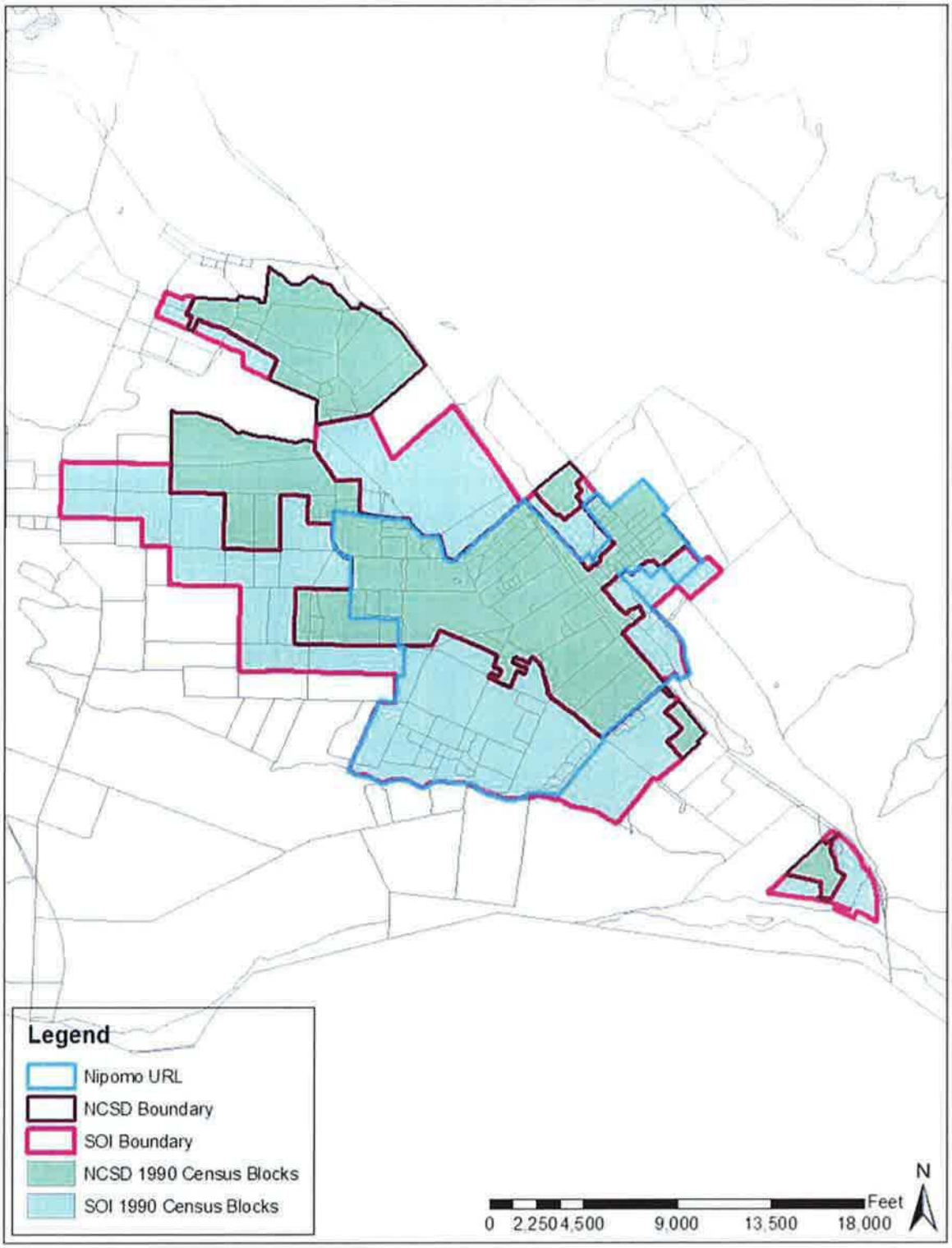


Table 6. Comparison of Population Estimates, 1994-2000

Year	Population based on census data and linear interpolation	Population based on NCSD connection data and 2.74 persons per connection	% Difference
1994	6,521	6,612	1.37%
1995	6,885	6,921	0.52%
1996	7,249	7,165	1.17%
1997	7,613	7,456	2.12%
1998	7,978	7,869	1.38%
1999	8,342	8,321	0.25%
2000	8,706	8,706	0.00%

Baseline Per Capita Water Use and Water Use Targets

WSC calculated per capita water use using the gross water use values shown in Table 1 and the population estimates shown in Table 4. The annual per capita water use values were averaged across 10-year periods ending no earlier than December 31, 2004. The highest 10-year average of per capita water use, 244.8 gallons per capita per day, was for the 10-year period ending December 31, 2006. Therefore, 244.8 gallons per capita per day was selected as the baseline daily per capita water use, as shown in Table 7. Table 8 summarizes the resulting values for the urban water use target for 2020 (equal to 80% of the baseline daily per capita water use), the interim urban water use target for 2015 (equal to 90% of the baseline daily per capita water use), and the compliance daily per capita water use (based on 2009 values).

The compliance daily per capita water use of 222.7 gallons per capita per day represents a reduction in per capita water use of approximately 9% from the baseline value. To comply with SB 7, the District will need to demonstrate an additional 1% reduction from the baseline value by 2015, and an additional 11% reduction from the baseline value by 2020.

Table 7. Per Capita Water Use Estimates

Year	Gross Water Use, acre-ft/year	Population Served	Per Capita Water Use, gal/capita/day	10 Year Average of Per Capita Water Use, gal/capita/day
1994	1,718.00	6,612	232.0	
1995	1,805.00	6,921	232.8	
1996	1,934.70	7,165	241.1	
1997	2,036.86	7,456	243.9	
1998	1,909.74	7,869	216.7	
1999	2,271.20	8,321	243.7	
2000	2,396.94	8,706	245.8	
2001	2,285.04	8,995	226.8	
2002	2,709.32	9,130	264.9	
2003	2,633.33	9,187	255.9	
2004	2,907.58	9,834	264.0	
2005	2,787.29	10,146	245.2	243.5
2006	2,666.34	10,448	227.8	**244.8**
2007	2,818.36	10,667	235.9	243.5
2008	2,752.90	10,691	229.9	242.7
2009	2,698.18	10,815	222.7	244.0

Table 8. Baseline, Target, Interim, & Compliance Water Use Values

Description	Water Use, gal/capita/day	Compliance Year
Baseline Gross Water Use	244.8	10 year average (1997-2006)
Target Water Use (80%)	195.8	2020
Interim Water Use (90%)	220.3	2015
Compliance (2009) Water Use	222.7	2009

Regional Baseline Water Use and Water Use Targets

NCSD is located in the Central Coast hydrologic region number 3 as defined in the 20x2020 Water Conservation Plan. The Central Coast Hydrologic Region and NCSD baseline and targets are shown in Table 9. Using Method 3 from the Technical Methodologies report, the regional baseline and targets were multiplied by 95% to produce NCSD's regional baseline and targets.

Table 9. Central Coast Hydrologic Region Baseline and Target Water Uses

	Regional gal/capita/day	NCSD gal/capita/day
Baseline (1995-2005)	154	146.3
Interim Target (2015)	139	132.1
Target (2020)	123	116.9

The baseline and targets using Method 3 are much lower and harder to achieve than the baseline and targets established using Method 1. Therefore, the baseline and targets calculated using Method 1will be used in the 2010 UWMP.

APPENDIX B. DEMAND DATABASE TECHNICAL MEMORANDUM

HDR

Technical Memorandum

WORK PRODUCT 1 - DEMAND DATABASE

NCSD 2010 Urban Water Management Plan ***October 18, 2010***

Reviewed by: Kevin Kennedy, P.E.
Jeffery Szytel, P.E.

Prepared by: Jeroen Olthof, P.E.

Background

As part of the development of a 2010 Urban Water Management Plan (UWMP), the Nipomo Community Services District (NCSD, or the District) is developing a database of current and projected future water demand. The database is being developed using Geographical Information Systems (GIS) tools to geographically reference current water users and develop focused estimates of potential future demands. This document describes the development of the database and summarizes the estimates of future demand.

Existing Data

Several existing data sets were provided by NCSD or San Luis Obispo County for use in this project. These included:

- A geodatabase called NCSD_Landbase.mdb that was last updated in March of 2010. This geodatabase is updated by the District on a monthly basis. The March 2010 file included three feature classes with parcel information:
  - NCSDParcels, showing 4,568 parcels in the NCSD service area with a total area of 3,917 acres. Attributes that could be present for each parcel included the Assessor Parcel Number (APN), the street address, the County zoning category, and the water account number.
  - NCSDSOIParcels, showing 1,920 parcels in the District's sphere of influence (SOI) with a total area of 5,719 acres.
  - SLOCOParcels, showing 16 parcels in the County to the northeast of the current service area. These parcels are not in the District's service area or its SOI.
- A benefit unit assessment spreadsheet developed by the Wallace Group and provided in a Microsoft Excel file. It included information on current and potential future development for 4,498 parcels in the District's service area. Fields for each parcel included:
  - Assessor land use description
  - Physical land use
  - Development status
  - Existing residential unit value
  - Future development potential
  - Developed benefit units
  - Undeveloped benefit units

- Five years of water consumption data from the District's billing system, referred to as the MOM database. The data were provided by fiscal year (FY), from FY 2004-05 through FY 2008-09. For each year a spreadsheet was provided showing the bi-monthly consumption in hundred cubic feet (hcf) at each location. The billing system includes a unique identification number called Location for each meter location. The billing system also stores an APN for each account that can be used to help correlate water use with geographic location.
- Monthly records of gross water production from the District's wells. These data were provided for each well from January 2000 through November 2009.
- A map showing the SOI areas identified with their numbers. The SOI areas as defined by NCSD are shown in Figure 1.
- A map showing the current zoning for the parcels in the study area, as defined by the County. The zoning information provided by the County in December 2009 is shown in Figure 2.

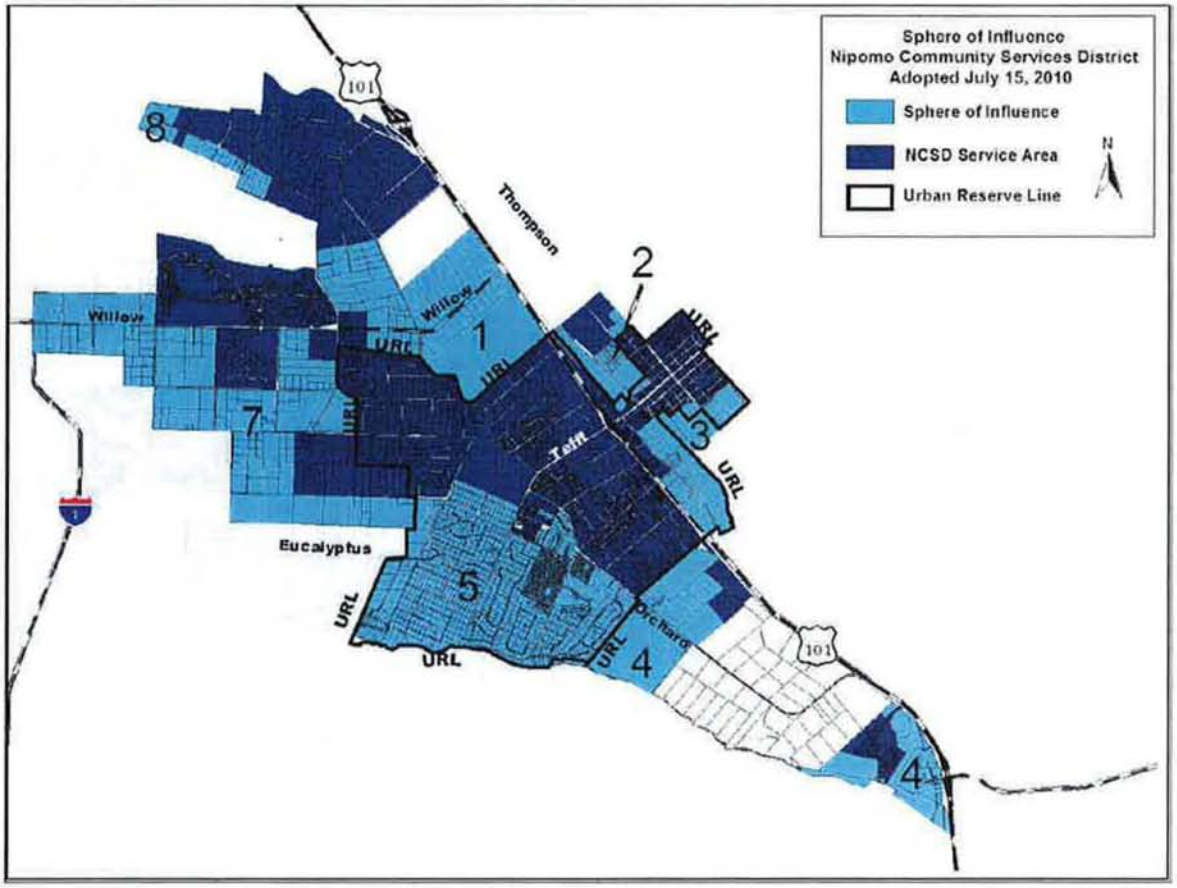


Figure 1. NCSD SOI Areas

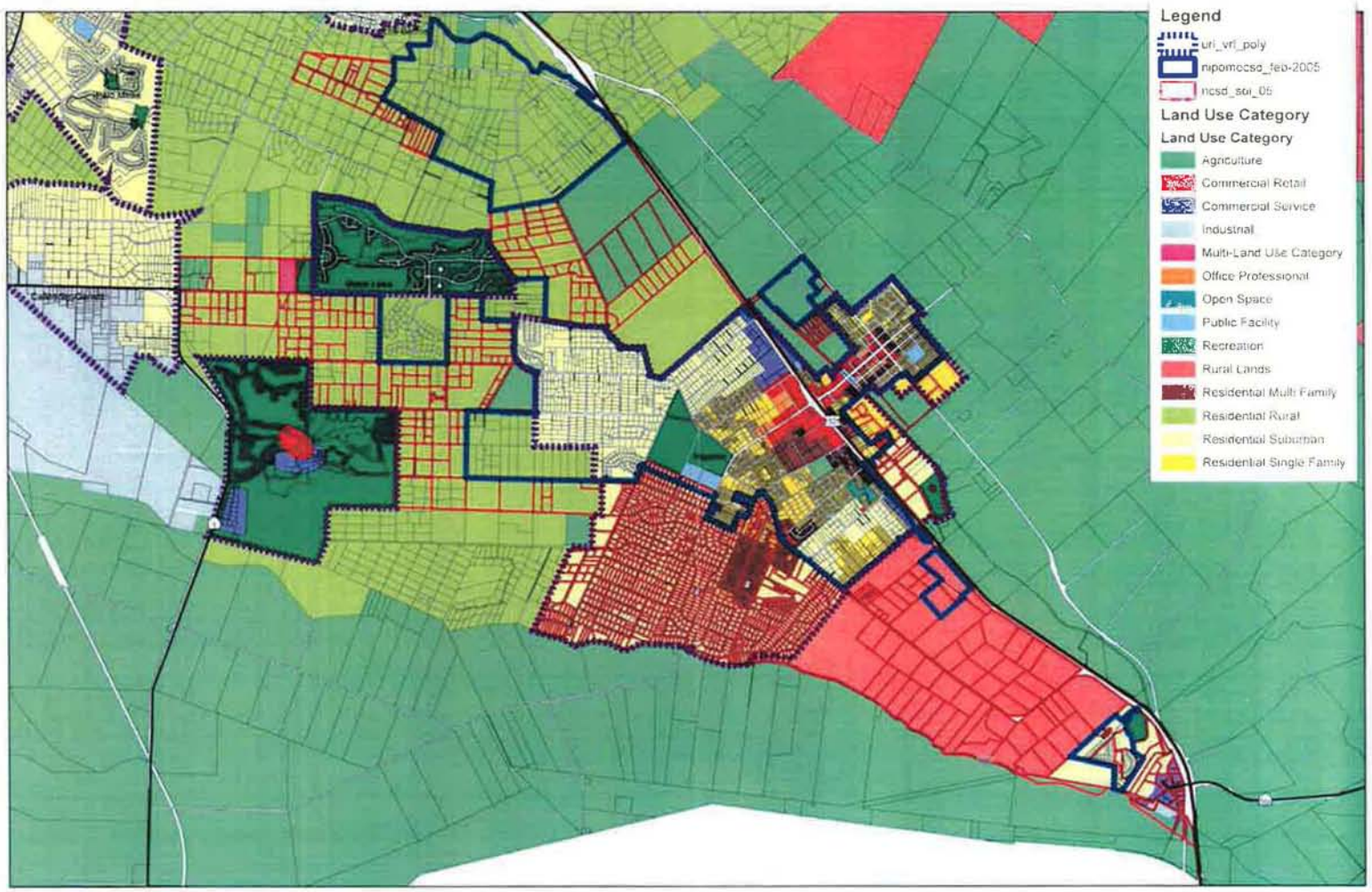


Figure 2. Zoning Map Provided by San Luis Obispo County (Line labeled url_vrl_poly shows Urban Reserve Line and Village Reserve Line)

UWMP Geodatabase

Using the NCSD_Landbase.mdb file as a reference, HDR created a new geodatabase called NCSD_UWMP.mdb. This geodatabase, formatted as a Microsoft Access file, will be a deliverable to NCSD. Geographic information in a geodatabase is stored in layers that are called feature classes. To help organize the information, feature classes can combined in groups that are called feature datasets. The UWMP geodatabase contains two feature datasets: one called Landbase that contains the feature classes maintained by NCSD, and one called UWMP that contains the information specific to this study. The coordinate system for these datasets is the North American Datum 1983 (NAD83), California State Plane, Zone 5, with units of feet. This coordinate system matches the GIS data provided by NCSD.

Parcels

In the UWMP geodatabase, HDR created a new data table by combining the tables associated with the NCSDParcels and NCSDSOIParcels feature classes into a single table. This combined table is called UWMP_Parcel_data and includes 6,488 parcels with a total area of 9,636 acres. The tables were combined to provide a single source of parcel information for use in demand projections. A field was added to identify the parcel's location as being in the NCSD service area or one of the seven SOI areas. Separate data can be generated as needed for any SOI area or for the NCSD service area by querying the data in this field.

Because NCSD updates the parcel information in the Landbase dataset on a monthly basis, HDR did not duplicate the geographic parcel boundaries in the UWMP dataset. The parcel data table includes a field called APN_DATA with a unique APN for each parcel. The parcel data table can be linked to the feature classes in the Landbase dataset using this APN_DATA field. When a new Landbase dataset becomes available, NCSD can import the new Landbase dataset into the UWMP geodatabase and overwrite the old information. With this arrangement, the information in the UWMP dataset can be linked to updated Landbase information as it becomes available.

HDR added additional fields to the UWMP_Parcel_data table to store information about current and potential future water use. Additional fields in the UWMP_Parcel_data table are summarized in Table 1.

Table 1. Fields in UWMP Parcels Data Table

Field Name	Description
APN_Data	The nine-digit APN, stored as text. Every parcel has a unique value.
MOM_APN	The APN in eight-digit format stored as text, without the leading zero. This value matches the APN format used in the MOM data.
NCSD	This text fields identifies each parcel either as within the District's service area ("NCSD") or in one of the seven sphere of influence areas (identified as SOI-1 through SOI-8, excluding SOI-6 which is the Woodlands).
Zoning	The zoning for the parcel, as defined by San Luis Obispo County. NCSD staff identified parcels that were covered by the Southland Specific Plan and the Canada Ranch Specific Plan. For these parcels, the specific plan provides more detailed information than the zoning category. HDR populated the zoning field with the name of the specific plan for these parcels.
URL_VRL	This field identifies the parcel as within the Urban Reserve Line (URL) of Nipomo, the Village Reserve Line (VRL) of Blacklake, or within the County (outside any URL or VRL).
Address	The street address of the parcel (if available).

The parcels in the District's service area and in the SOI areas are shown in Figure 3.

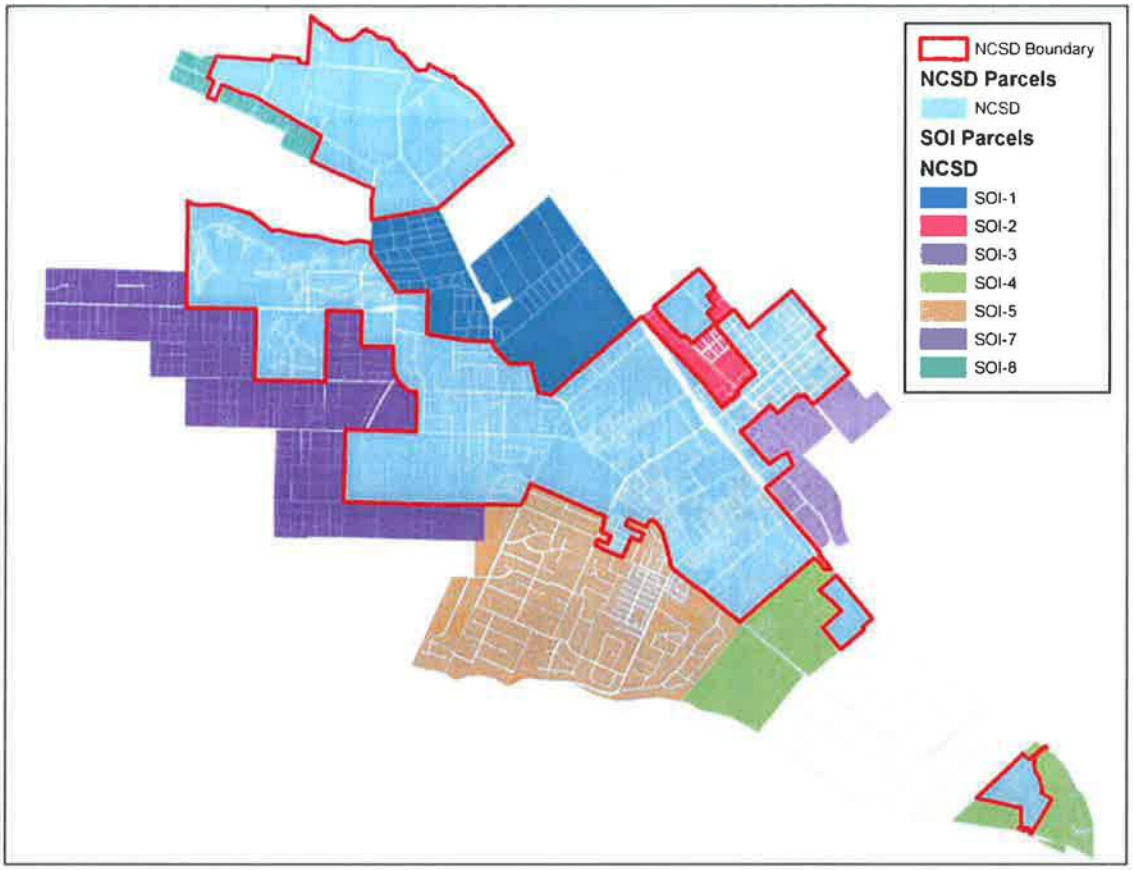


Figure 3. Parcels in District Service Area and SOI Areas

A portion of the SOI area designated SOI-4 is currently agricultural land and was removed from the District's SOI by the San Luis Obispo County Local Agency Formation Commission (LAFCO), which is responsible for defining the boundaries of the SOI.

The SOI area designated SOI-5 is currently served water by the Golden State Water Company. Because the District does not expect to ever provide retail water service to those parcels, SOI-5 was not included in any further analysis.

The parcels are shown color-coded by their location in a URL or VRL in Figure 4.

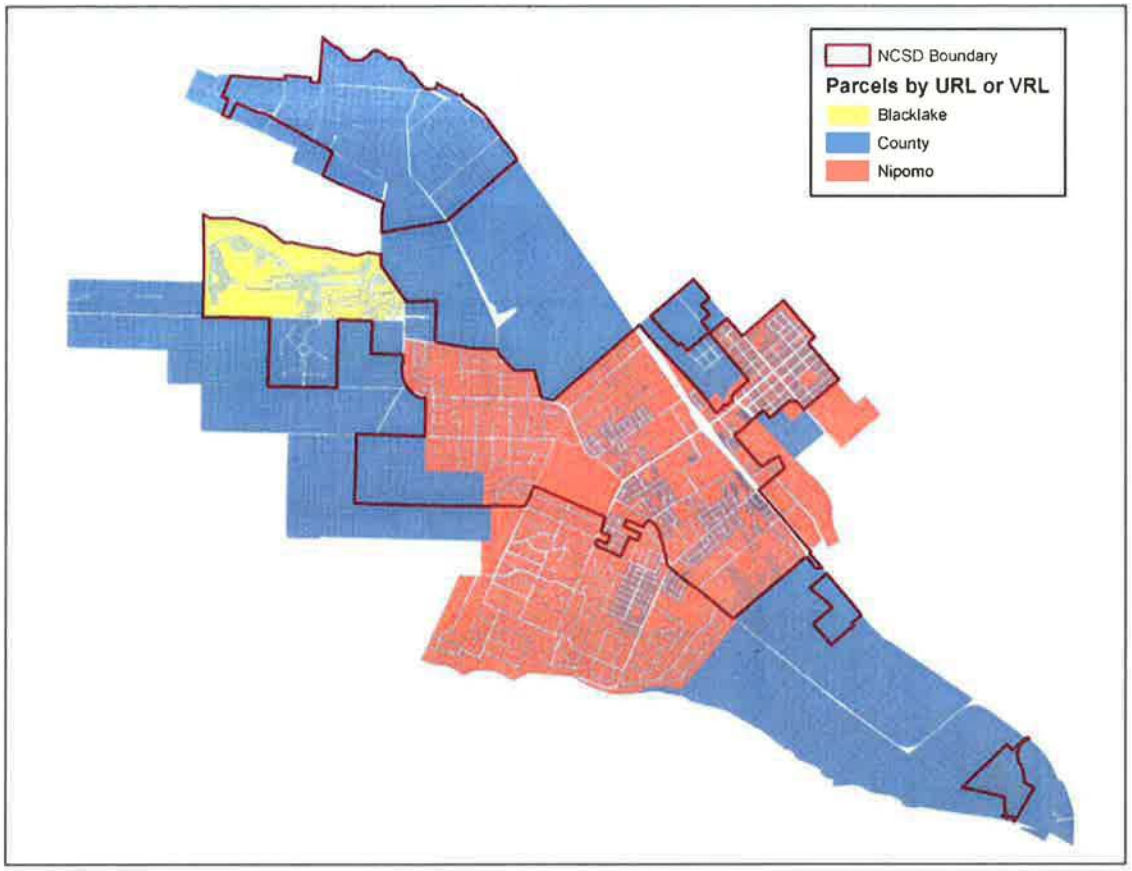


Figure 4. Parcels by Urban Reserve Line or Village Reserve Line

The parcels are shown color-coded by their County zoning or specific plan designation in Figure 5.

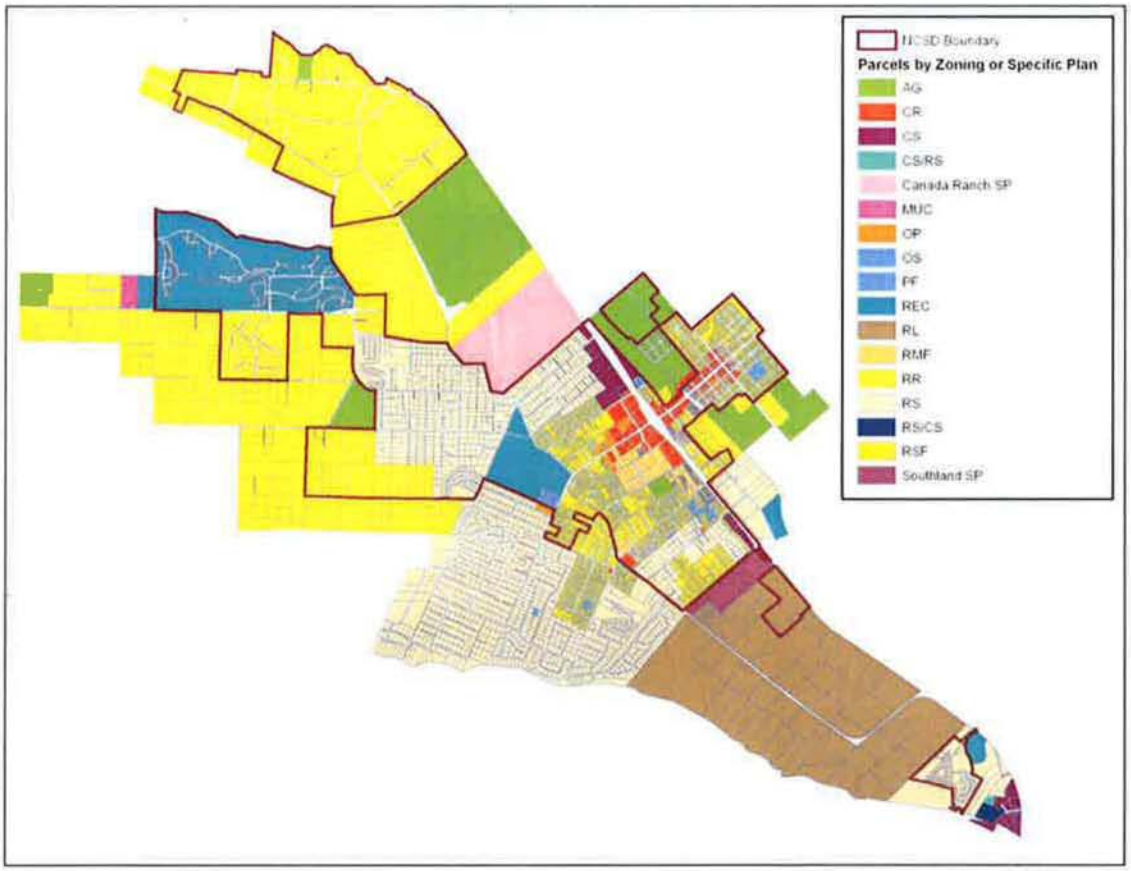


Figure 5. Parcels by County Zoning or Specific Plan

The zoning and specific plan codes used in the study area are summarized in Table 2. Some parcels are split zoned, meaning that two different zoning designations apply to different parts of the parcel. In the database these parcels have both zoning designations combined with a slash. For example, a parcel designated "CS/RS" includes a portion zoned Commercial Services and a portion zoned Residential Suburban.

Table 2. Zoning and Specific Plan Codes Used in the Study Area

Code	Description
AG	Agriculture
Canada Ranch SP	Canada Ranch Specific Plan area
CR	Commercial Retail
CS	Commercial Services
MUC	Multi-Land Use Category
OP	Office and Professional
OS	Open Space
PF	Public Facility
REC	Recreation
RL	Rural Lands
RMF	Residential Multi-Family
RR	Residential Rural
RS	Residential Suburban
RSF	Residential Single Family
Southland SP	Southland Specific Plan area
Note: Some parcels are split-zoned and have a designation that combines two categories (for example, "CS/RS"	

Based on the new geodatabase, the acres of each category in the service area and in the SOI areas are summarized in Table 3. The total acreage in Table 3 (7,297 acres) is less than the total acreage in the UWMP parcel data table (9,636 acres) because SOI-5 is being excluded from further analysis and because of reductions in the SOI made by LAFCO in July 2010.

Table 3. Summary of Zoning and Specific Plan Designation in NCSD Service Area and SOI Areas (Acres)

Code	NCSD	SOI-1	SOI-2	SOI-3	SOI-4	SOI-7	SOI-8	Total
AG	104	189	119	125		89		625
CR	119		7					126
CS	74				37			112
CS/RS					3			3
MUC						19		19
OP	24							24
OS	11							11
PF	24							24
REC	593			21	19	19		653
RL	60				338			397
RMF	135							135
RR	1,316	391				1,240	117	3,064
RS	897			98	107			1,101
RS/CS					13			13
RSF	560		6	76				642
Canada Ranch SP		274						274
Southland SP					74			74
Total	**3,917**	**854**	**132**	**320**	**590**	**1,367**	**117**	**7,297**

Demand Locations

One of the District's objectives was to link water consumption data to the appropriate parcel so that water use could be analyzed geographically. It is possible for a parcel in the NCSD service area to have more than one water meter. Separate meters might be in place for indoor and irrigation water use, and some multiple-family developments have individual meters for each unit. Therefore, HDR created a point feature class in the geodatabase to represent water demand locations. These 4,180 points were located using a combination of the APN in the billing database, the street address in the billing database, and the water account number in the parcel database. Water use from the MOM database can be linked to these points using the MOM Location number. Historical water use by parcel can then be characterized in GIS by summarizing the water demand location points that fall within a parcel's boundaries. The fields in the water demand location feature class are summarized in Table 4.

Table 4. Fields in Water Demand Location Feature Class

Field Name	Description
Shape	A point showing the water demand location. Most points were generated by using the centroid of the parcel; they are not intended to represent the physical location of the meter within the parcel.
Location	The location number for that meter in the MOM database.
MOM_Addrss	The street address of the location, based on the information in the MOM database.
MOM_APN	The APN of the location, based on the information in the MOM database.
Source	The source of the information used to identify the location of the meter. This text field is used to describe how that point was located. Values include: • MOM APN matched GIS parcel APN (98%) • MOM location number matched water account number stored in GIS parcel table (1%) • Estimated from MOM street address (1%)

The water demand locations are color-coded by the information source in Figure 6.

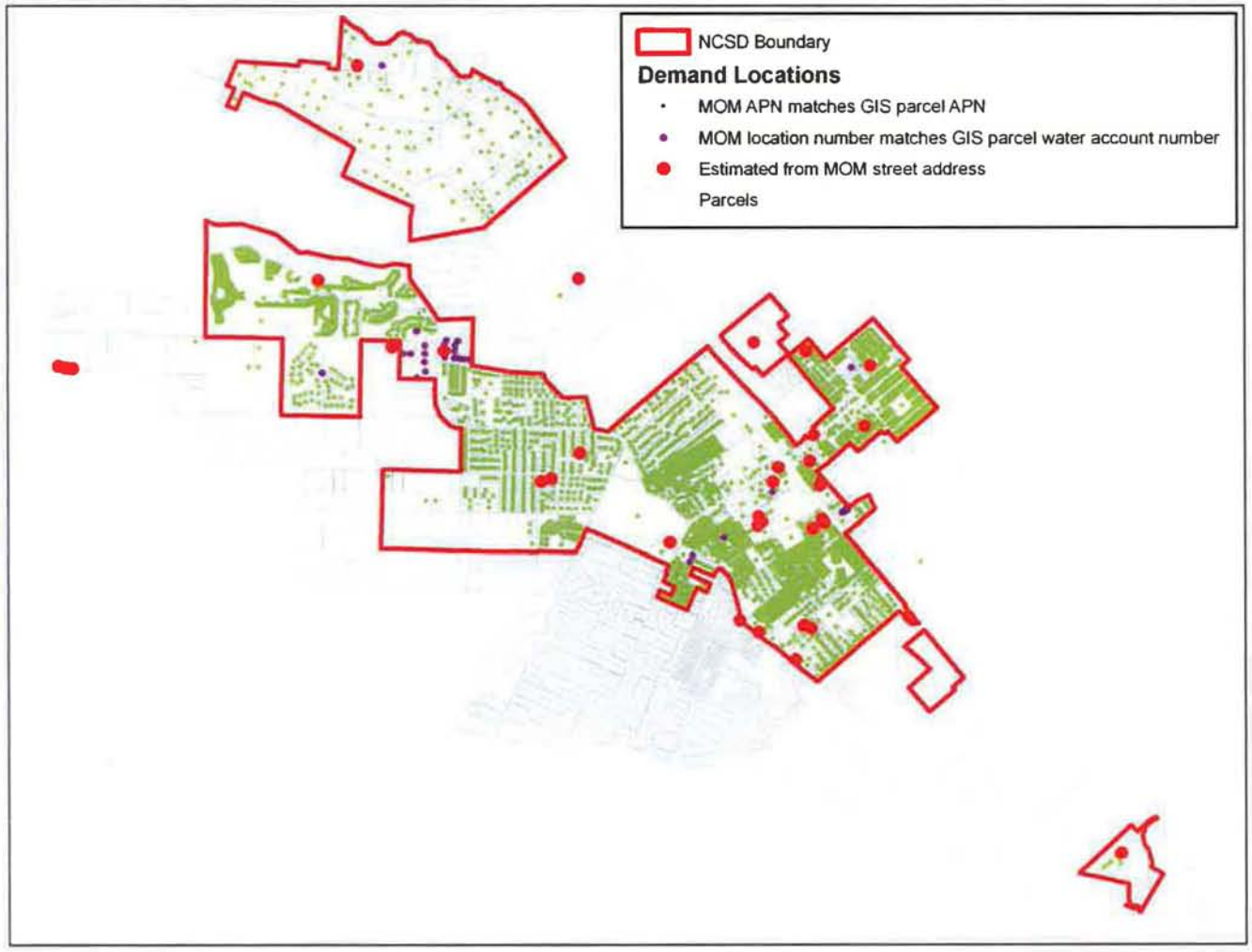


Figure 6. Demand Location Points

As shown in Figure 6, the District does provide water service to some parcels outside its service area. Many of these services were established as part of agreements to provide easements or right-of-way for District infrastructure. These accounts outside the District are summarized in Table 5.

Table 5. District Demand Locations Outside District Boundary

Location Number	Status as of March 2010	Location Number	Status as of March 2010
20318	Active	40048	Inactive
20407	Active	40050	Inactive
20408	Active	40054	Inactive
20409	Active	40062	Inactive
20414	Active	40063	Inactive
40046	Active	40064	Inactive
40047	Active	40354	Inactive
40049	Active	40356	Inactive
40050	Active	40357	Inactive
40051	Active	40358	Inactive
40052	Active	40359	Inactive
40053	Active	40360	Inactive
40060	Active	40361	Inactive
40061	Active	40363	Inactive
40348	Active	40364	Inactive
40355	Active	40365	Inactive
40406	Active	40366	Inactive
60973	Active	40367	Inactive

The demand locations outside the District boundary are shown in Figure 7.

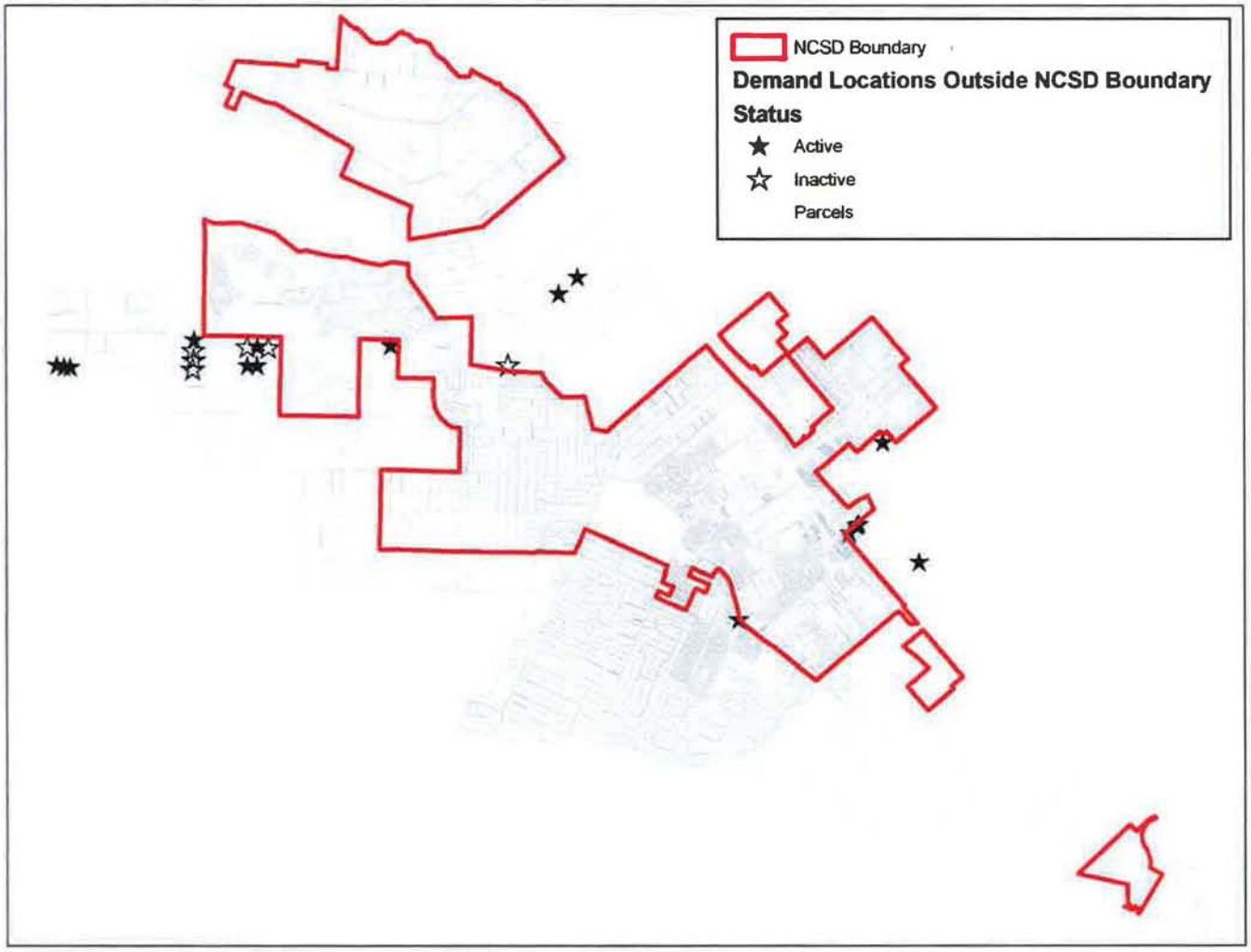


Figure 7. Demand Location Points Outside District Boundary

Water Consumption

HDR compiled the five years of consumption data and calculated consumption for each demand location for each month from July 2004 through June 2009. Because NCSD issues water bills on a bi-monthly basis, most locations have a water consumption recorded every other month. This bi-monthly consumption must be divided by two and allocated to both months before evaluating seasonal consumption patterns.

During the compilation, some values of unusually high consumption were noted and reviewed with the District. The District provided corrected consumption values for the accounts shown in Table 6.

Table 6. Revised Consumption Values

Location	Month	Original Consumption (HCF)	Corrected Consumption (HCF)
20641	December 2005	99,953	35
50170	January 2006	997,665	*0*
30159	September 2008	-100	*0*
Note: Values in italics are assumed.			

The water consumption for all locations is summarized in Table 7. Table 7 also shows the consumption converted to acre-feet per year (AFY).

Table 7. Summary of Water Consumption Data

	Consumption by Accounts Within NCSD Boundary (HCF)	Consumption by Accounts Outside NCSD Boundary (HCF)	Total Consumption (HCF)	Total Consumption (AFY)
FY05	1,118,411	6,940	1,125,351	2,583
FY06	1,104,932	8,605	1,113,537	2,556
FY07	1,195,428	9,856	1,205,284	2,767
FY08	1,186,107	8,840	1,194,947	2,743
FY09	1,116,852	6,217	1,123,069	2,578
Average			1,152,438	2,646

The monthly consumption data from the MOM database were linked to the layer of demand location points in the geodatabase. The layer of demand location points was then intersected with the parcels to determine the current water use by parcel. During the period from 2004 through 2009, there was no clear trend in consumption, although the FY09 consumption was slightly less than the FY05 consumption.

During any given year, some locations had no water use for part or all of the year. This situation could be due to ownership transitions or part-time residents. Some locations represent new

structures that have not been in place for the full five years. During future years there will continue to be ownership transitions or periods of minimal water use at any given parcel. Because assuming 100-percent occupancy would result in an unreasonably high total demand, the consumption data were not adjusted to exclude locations or time periods with no water use.

The consumption data for the five years were classified according to the billing code in the MOM data. The District's billing codes are summarized in Table 8.

Table 8. NCSD Billing Codes

Code	Description	General Classification
B1	Blacklake - SFR	Single Family Residential
B2	Blacklake -MFR	Multi-Family Residential
B3	Blacklake - IRR	Irrigation
B4	Blacklake - COM	Commercial
B5	Blacklake - AGR	Agricultural
I1	In Town - SFR	Single Family Residential
I2	In Town - MFR	Multi-Family Residential
I3	In Town - IRR	Irrigation
I4	In Town - COM	Commercial
I5	In Town - AGR	Agricultural
O1	Out of Town - SFR	Single Family Residential
O2	Out of Town - MFR	Multi-Family Residential
O3	Out of Town - IRR	Irrigation
O4	Out of Town - COM	Commercial
O5	Out of Town - AGR	Agricultural
OS	High School	Institutional
X1	Cal Cities Emergency	Other
X2	Outside Hydrant Use	Other
X3	Hydrant Construction Water	Other
Z1	NCSD No Charge	Institutional

The consumption for any given period can be summarized by these classes. The breakdown for the five years of data is shown in Figure 8.

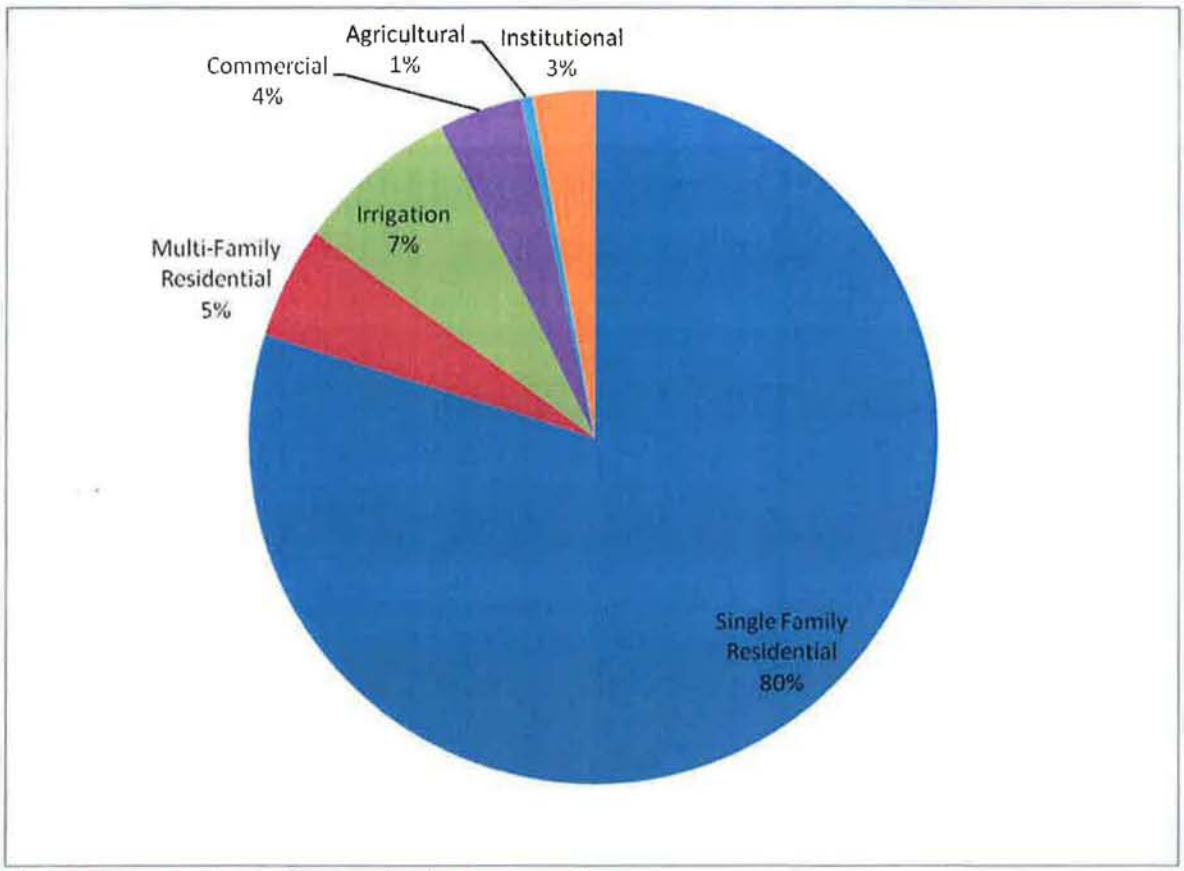


Figure 8. FY05-09 Water Consumption by Customer Class

The consumption data can also be analyzed geographically. The parcels in the study area are color-coded by their average water consumption (in AFY) in Figure 9.

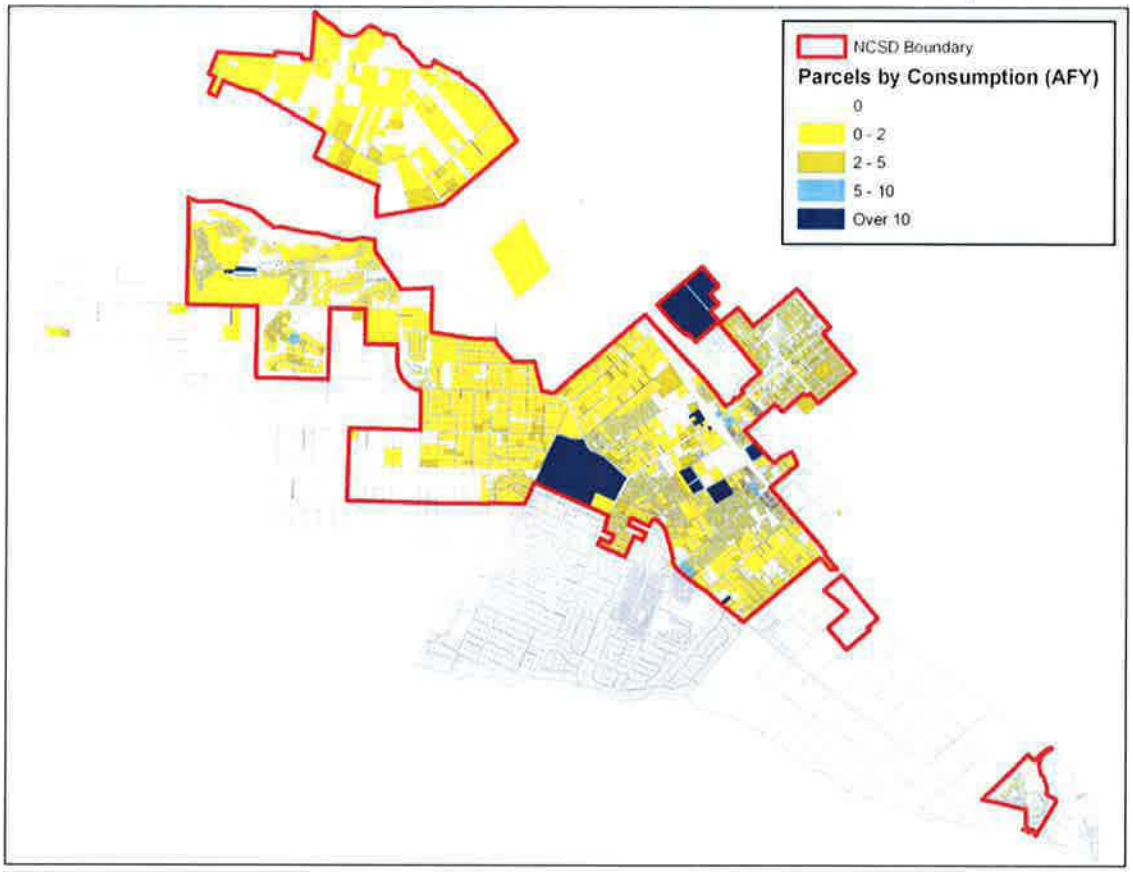


Figure 9. Parcels by Average Water Consumption

Water Production

NCSD provided ten years of monthly water production data from the District's wells. HDR compiled this information to calculate total monthly and annual production. The production information is summarized in Table 9.

Table 9. Annual NCSD Water Production

Calendar Year	Production (AF)		Fiscal Year	Production (AF)
2000	2,414		2001	2,410
2001	2,285		2002	2,494
2002	2,709		2003	2,616
2003	2,633		2004	2,827
2004	2,907		2005	2,643
2005	2,794		2006	2,747
2006	2,706		2007	2,982
2007	2,856		2008	2,843
2008	2,755		2009	2,642
Source: Annual Production Summaries Provided by NCSD				

The difference between production and consumption is considered to be non-revenue water (NRW). This NRW typically includes water used for unmetered uses, such as fire fighting or flushing, along with water lost to leaks in the distribution system.

Two additional uses of water for NCSD are deliveries to the Golden State Water Company and metered flows through construction meters on fire hydrants. District staff provided recorded flows to Golden State for the years 2000 through 2009. These flows were added to the measured consumption by NCSD accounts to determine total consumption. The District also provided metered water use through construction meters on fire hydrants for the years 2005 through 2009. These flows were also incorporated into the measured consumption.

The compilation of total consumption and production is shown in Table 10.

Table 10. Consumption and Production Summary

	NCSD Consumption (HCF)	Golden State Delivery (HCF)	Construction Meters (HCF)	Total Consumption (HCF)	Total Consumption (AFY)	Total Production (AFY)	Non-Revenue Water (AFY)	NRW as Percent of Production
FY05	1,125,351	2,944	6,203	1,134,498	2,604	2,643	39	1%
FY06	1,113,537	17,460	14,832	1,145,829	2,630	2,747	117	4%
FY07	1,205,284	16,461	21,484	1,243,229	2,854	2,982	128	4%
FY08	1,194,947	1,015	11,614	1,207,576	2,772	2,843	71	2%
FY09	1,123,069	-	2,293	1,125,362	2,583	2,642	59	2%
Average					2,689	2,771	82	3%

Over the five most recent years of available data, the NRW varied from 1 to 4 percent of production, with an average of 3 percent. For future planning purposes, a rounded value of 5 percent was used.

Future Water Demands

Future water demands were estimated for the parcels in the study area (both the District's service area and the SOI). The future demand projections were made in two steps. First, a buildout water demand was calculated for each parcel. This estimate used the benefit unit assessment spreadsheet for areas in the District service area and the County zoning information (as of 2009) for areas in the SOI. In the second step, interim projections were made for incremental periods between now and buildout. These interim projections were prepared using regional population projections for 2010 through 2035. These population projections were based on planning work by the San Luis Obispo Council of Governments (SLOCOG) and San Luis Obispo County.

Water Demand at Buildout (Based on Zoning as of 2009)

As part of its planning process, San Luis Obispo County has been calculating the development potential for parcels in the rural areas of the County. This analysis includes potential constraints on development such as slope and environmentally sensitive habitat. The County is extending this analysis to include parcels in the more developed areas of the County. The results of the County's analysis were not available at the time this memorandum was prepared. When that information becomes available, it could potentially be used to estimate buildout levels of development and buildout water demands in the study area.

For this project the best available estimate of future development in the NCSD service area is documented in the benefit unit assessment spreadsheet developed by the Wallace Group. The spreadsheet was developed for the purpose of assessing costs to property owners for a new water supply (an interconnection to the City of Santa Maria). The benefit unit assessment spreadsheet provided by NCSD included data for 4,498 parcels with a total area of 3,741 acres.

In order to calculate water use for different types of development, the Wallace Group defined a "benefit unit." A benefit unit is approximately equivalent to one single-family residence. Parcels were assigned existing benefit units based on their size and current land use. The Wallace Group identified a total of 5,825 benefit units in the current service area. Based on the District's average annual water production from 2005 through 2009 of 2,771 AFY, the current water use per benefit unit is 425 gallons per day (gpd).

The Wallace Group also calculated future benefit units that are expected for each parcel in the current service area. This calculation was based on a review of available information including zoning, current land use, and field investigation of selected parcels. The number of future benefit units assigned to an undeveloped parcel was calculated using the information in Table 11.

Table 11. Basis of Benefit Unit Assessment

Group	Category	Description	Parcel Sizes	Benefit Units
1	RSF	Residential parcels with one unit	<= 0.3 acres	1.0
			0.4 to 0.6 acres	1.6
			>= 0.7 acres	2.0
2	RSF-2	Second unit	< 1.0 acres	0
			>= 1.0 acres	0.3 for second unit
3	RSF>2	Greater than 2 units	All	0.3 for each additional unit
4	RMF	Multi-family units with no land	<0.1	0.7
5	COM	Commercial Services, Commercial Retail, Office Professional	<= 0.3 acres	1.0
			0.4 to 0.6 acres	1.6
			0.7 to 1.9 acres	3.0
			>= 2.0 acres	6.0
6	Mini Storage	Storage units	All	0.5
7	School	School	<= 0.3 acres	1.0
			0.4 to 0.6 acres	1.6
			0.7 to 2.0 acres	3.0
			> 2.0 acres	3.0 plus 1.0 for every acre above 2
8	Public Meeting	Churches, public meeting facilities	<= 0.3 acres	1.0
			0.4 to 0.6 acres	1.6
			0.7 to 2.0 acres	2.0
			> 2.0 acres	1.0 per acre
9	Recreational	Parks, fields	All	1.0 per acre
10	Government	Fire station, police station	<= 0.3 acres	1.0
			0.4 – 0.6 acres	1.6
			0.7 to 2.0 acres	3.0
			> 2.0 acres	3.0 plus 1.0 for every acre above 2
11	PF w/o Irrigation	Public facilities with no irrigation	All	0.0
12	PF w/ Irrigation	Public facilities with irrigation	All	1.0 per acre
13	OS w/o Irrigation	Open space with no irrigation	All	0.0
14	OS with Irrigation	Open space with existing or potential irrigation	All	1.0 per acre
15	WWTP	Wastewater Treatment Plant		1.0

Source: May 2009 Sensitivity Analysis for the Basis of Assessment - Final

The Wallace Group identified a total of 2,953 additional benefit units for the parcels in the District's service area. Using the current average use of 425 gpd per benefit unit, this development would represent an additional demand of approximately 1,400 AFY.

HDR imported the benefit unit information into the new geodatabase and joined the benefit unit table to the parcel data table using the APN. With the initial join, 4,459 parcels in the benefit unit assessment spreadsheet were linked to a parcel in the GIS parcel data table. HDR investigated the remaining 39 parcels to see if the APN could be adjusted. For eighteen parcels, HDR adjusted the APN values so that the benefit unit assessment spreadsheet would join with the GIS parcel data table. The adjusted APN was selected based on the street address for each record in the benefit unit assessment spreadsheet. These changes are summarized in Table 12.

Table 12. Modifications to APN Values in Benefit Unit Assessment Spreadsheet

Parcel APN in Benefit Unit Assessment Spreadsheet	Adjusted APN for Join with Geodatabase
90079032	90079091
91240006	91247015
91240007	91244027
91244027	91247016
91240020	91247027
91240021	91247028
91240023	91247029
91240031	91247039
91240032	91247040
91240034	91247042
91240035	91247043
91240075	91247010
91240077	91247014
91240081	91247044
91240082	91247045
91240084	91247037
92241022	92241035
92241027	92241034

While there were 22 parcels in the benefit unit assessment spreadsheet that remained without a link to a parcel in the GIS parcel data table, these represented less than 1 percent of the parcels and of the calculated benefit units. These discrepancies may be resolved when the Wallace Group updates the benefit unit assessment spreadsheet with updated APN information.

The benefit unit assessment spreadsheet did not include parcels outside the District's current service area. At some point the District may elect to expand the benefit unit assessment spreadsheet to calculate benefit units for the approximately 450 parcels in SOI-1, SOI-2, SOI-3, SOI-4, SOI-7, and SOI-8. For this project, detailed information about each SOI parcel was not available. Therefore, HDR used an alternate approach to estimate future demands for SOI

parcels. The approach matches the one used in the 2007 Water and Sewer Master Plan. For areas in the sphere of influence, future demands at buildout were estimated using the zoning or specific plan designation for the parcel and a set of demand factors summarized in Table 13.

Table 13. Water Demand Factors

Code	Description	Demand Factor from 2007 Master Plan (Revised Using FY05-06 Water Use Rates) (AFY/acre)	Demand Factor for 2010 Urban Water Management Plan (AFY/acre)
AG	Agriculture	0	0
CR	Commercial Retail	1.42	1.42
CS	Commercial Services	0.35	0.35
MUC	Multi-Land Use Category		1.42
OP	Office and Professional	0.26	0.26
OS	Open Space	1.18	1.18
PF	Public Facility	0.59	0.59
REC	Recreation	0.98	0.98
RL	Rural Lands	0.10	0.10
RMF	Residential Multi-Family	3.75	3.75
RR	Residential Rural	0.20	0.20
RS	Residential Suburban	0.98	0.98
RSF	Residential Single Family	2.10	2.10
Canada Ranch SP	Canada Ranch Specific Plan	1.96	1.96
Southland SP	Southland Specific Plan	0.98	0.98

Notes: Demand factor for MUC (Multi-Land Use Category) was assumed to be equal to CS (Commercial Services).
For parcels with a combination of two zoning categories, the demand factor was estimated as the average of the two values

For the new geodatabase, HDR used one of three methods to calculate the buildout water use for each parcel.

- For parcels in the current service area with no additional benefit units in the benefit unit assessment spreadsheet, the future demand was assumed equal to the average consumption from FY05 through FY09. An allowance of 5 percent for NRW was added to the consumption values.
- For parcels in the current service area with additional benefit units in the benefit unit assessment spreadsheet, the future demand was assumed equal to the current consumption (average of FY05 through FY09) plus 425 gpd for each additional benefit unit. An NRW allowance of 5 percent was added to the consumption values for current development. Because the future demand factor of 425 gpd per benefit unit was calculated using total production, it already includes NRW.

- For parcels in the sphere of influence, the future demand was calculated using the zoning or specific plan designation and the demand factors in Table 13. An allowance of 5 percent for NRW was added to demands calculated using the factors in Table 13.

The calculated buildout demands are summarized in Table 14.

Table 14. Estimated Buildout Demands (Based on Zoning as of 2009)

Area	Current Demand (AFY)	Additional Future Demand (AFY)	Total Buildout Demand (AFY)
Existing Service Area	2,752	1,387	4,139
SOI-1	3	646	649
SOI-2	-	24	24
SOI-3	6	290	297
SOI-4	-	269	269
SOI-7	9	309	319
SOI-8	-	25	25
Total	2,771	2,950	5,721
Notes: Includes estimate of 5% for non-revenue water.			

Interim Years

The parcel geodatabase allows the calculation of current and estimated future water demand for each parcel. The District will be able to make assumptions about when certain parcels are developed and see the impact on future water demands. Land use planning for the study area is controlled by the County; the District's role is to plan for potential future growth and identify necessary water supplies. At this time, the County has not identified a specific order or sequence for the development of parcels. Therefore, HDR prepared projections of water demands during future years by assuming growth rates that can be applied across the study area.

San Luis Obispo County maintains several GIS datasets on their web site that can be used for planning projects. A shapefile of the 2000 census blocks was obtained from the County's data repository. This file has 2000 population in each of approximately 7,200 census blocks covering the County; the total population is 246,681. Approximately 220 census blocks overlay some part of the District's service area or sphere of influence. The census blocks in the study area are shown in Figure 10.

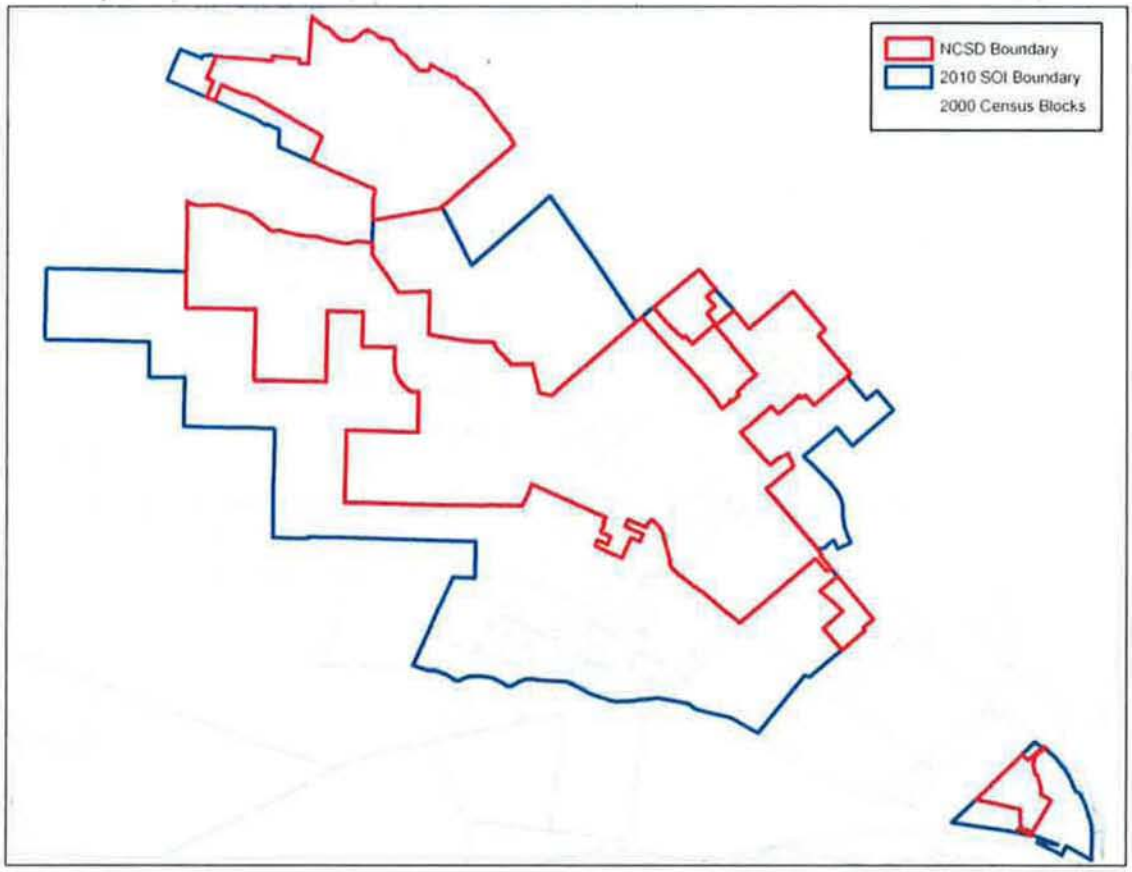


Figure 10. Census Blocks in Study Area

The distribution of population within each census block depends on the mix of residential, commercial, and other developed land uses. For this project, HDR assumed the population was uniformly distributed within each census block. For each census block, an area was calculated in acres and a 2000 population per acre was calculated.

In order to estimate the population within the service area, the layer of census blocks was intersected with the District service area boundary polygon. Similar intersections were done with the SOI boundary and the URL boundary, which corresponds to the Nipomo area as defined by the County in planning projections. These results are shown in Table 15.

Table 15. 2000 Population from Census Block Data

Area	2000 Population
NCSD Service Area	8,706
NCSD Sphere of Influence	5,484
Total NCSD	14,190
Nipomo URL	11,472
Source: GIS intersection of 2000 census blocks and adminstrative boundaries	

The most recent population projections for the study area have been estimated by the San Luis Obispo Council of Governments (SLOCOG) and updated by San Luis Obispo County. These estimates were provided by the County in a Microsoft Excel spreadsheet and reflected projections adopted by SLOCOG June 10, 2009. These projections include population estimates for the urban and rural areas throughout the County for years from 2000 through 2035. HDR extracted the estimates for the Nipomo URL area and for the South County (rural) area, which includes portions of the District's SOI. These estimates are summarized in Table 16.

Table 16. SLOCOG Population Projections

Timeframe	Nipomo URL	Annual Growth	South County (rural)	Annual Growth
2000	12,612		9,002	
2005	13,789	1.8%	9,746	1.6%
2008	14,726	2.2%	10,347	2.0%
2010	15,256	1.8%	10,677	1.6%
2015	16,419	1.5%	11,200	1.0%
2020	17,429	1.2%	11,589	0.7%
2025	18,460	1.2%	11,888	0.5%
2030	19,669	1.3%	12,267	0.6%
2035	20,672	1.0%	12,893	1.0%
Buildout	24,032		15,798	
Source: June 2009 SLOCOG projections prepared by ERA and County staff (Medium Growth Estimate). *Note: South County (rural) includes Black Lake and Woodlands*				

The SLOCOG-estimated population for 2000 for the Nipomo URL (12,612) is approximately 10 percent higher than the population calculated by HDR using census data (11,472). In order to maintain consistency with regional planning efforts, the SLOCOG value was retained.

The annual water production was assumed to increase in proportion to the population increases projected by SLOCOG for the Nipomo URL. The projected demands are summarized in Table 17. Table 17 also shows projected demands that account for the reduction in per-capita water use called for in Senate Bill 7. It was assumed that the expected reduction in per-capita water use from 222.7 gpd to 195.8 gpd would result in a corresponding percentage reduction in water production. The reduction in per-capita water use is further discussed in the Technical Memorandum "Baseline Daily Per Capita Water Use' (Water Systems Consulting, August 11, 2010).

Table 17. Estimated Water Demand for Interim Years and Buildout (Based on Zoning as of 2009) for the District Service Area

Timeframe	Annual Growth	Annual Production without Per-Capita Reduction (AFY)	Expected Per-Capita Water Use (gpd)	Annual Production with Per-Capita Reduction (AFY)
2010		2,771	222.7	2,771
2015	1.5%	2,982	220.3	2,950
2020	1.2%	3,166	195.8	2,783
2025	1.2%	3,353	195.8	2,948
2030	1.3%	3,573	195.8	3,141
2035	1.0%	3,755	195.8	3,301
Buildout		4,139	195.8	3,639

References

Baseline Daily Per Capita Water Use, Water Systems Consulting, August 10, 2010.

Draft NCSD Assessment District Research Memorandum, Wallace Group, April 15, 2009.

Nipomo Community Services District Sphere of Influence Update and Municipal Service Review, San Luis Obispo County Local Agency Formation Commission, July 2010.

Nipomo Community Services District Sphere of Influence Update and Municipal Service Review Final Environmental Impact Report, San Luis Obispo County Local Agency Formation Commission, May 20, 2004.

Nipomo Community Services District Urban Water Management Plan 2005 Update, SAIC Engineering, January 25, 2006.

Nipomo Community Services District Water and Sewer Master Plan Update, Cannon Associates, December 2007.

Sensitivity Analysis for the Basis of Assessment – Final, Wallace Group, May 28, 2009.

APPENDIX D. WHOLESALE WATER SUPPLY AGREEMENT

WHOLESALE WATER SUPPLY AGREEMENT

This Wholesale Water Supply Agreement ("Agreement") is made and entered into as of 1-5-2010, by and between the CITY OF SANTA MARIA ("City"), a California municipal corporation, and NIPOMO COMMUNITY SERVICES DISTRICT ("NCSD"), an independent special district formed under and pursuant to Section 61000, *et seq.* of the California Government Code. City and NCSD are sometimes individually referred to herein as a "Party" and collectively as the "Parties".

RECITALS

A. The City provides retail potable water service to customers within its service area in the Santa Maria Valley, in northern Santa Barbara County. The City holds a contract with the Central Coast Water Authority to receive water from the State Water Project ("SWP"). City also holds rights to recharge from Twitchell reservoir and rights to pump groundwater from the Santa Maria Groundwater Basin ("Santa Maria Basin").

B. NCSD provides retail potable water service and sewer service within its established boundaries located in and around the Nipomo Mesa Management Area ("NMMA") of the Santa Maria Basin.

C. Both the City and the NCSD are Parties to a certain groundwater adjudication lawsuit commonly referred to as the Santa Maria Groundwater Litigation (Santa Maria Valley Water Conservation District vs. City of Santa Maria, et al.; Superior Court of California, County of Santa Clara Case no. 1-97-CV-770214) (herein the "Basin Litigation"). On August 3, 2005, the Court approved a Settlement Stipulation (herein the "Stipulation") that was signed by the Parties, related to the Basin Litigation which, among other things, provides that "the NCSD and City shall employ their best efforts to timely implement the Nipomo Supplemental Water Project, subject to their quasi-judicial obligations specified for administrative action and in the California Environmental Quality Act." The Stipulation was later incorporated into the final Judgment.

D. On a long term basis, City has water available for use in the NMMA that is surplus to that needed to serve City's current and long-term future anticipated demands.

E. Pursuant to the Stipulation, NCSD seeks to acquire a Supplemental Water supply (referred to herein as "Supplemental Water") to alleviate pressure on the NMMA from groundwater pumping and to meet current needs and projected demands of NCSD customers.

F. Consistent with the Stipulation and Judgment, and subject to the terms and conditions of this Agreement, City is willing to sell and deliver to NCSD an established quantity of Supplemental Water on a wholesale basis.

NOW THEREFORE, in consideration of the foregoing recitals and the promises and covenants contained herein, the Parties agree as follows:

1. **Purpose.** Consistent with the Stipulation and Judgment, the purpose of this Agreement is to formalize the terms and conditions by which City will provide Supplemental Water to NCSD, including an equivalent amount of capacity in City's water distribution system, for delivery to the NCSD water distribution system through the interconnection described in Paragraph 9, beginning on the Effective Date and continuing each year thereafter for as long as this Agreement remains in effect.

2. **Termination of MOU.** City and NCSD executed a Memorandum of Understanding ("MOU") on September 7, 2004, to provide for the reservation of a Supplemental Water supply of up to three thousand (3,000) acre-feet per year in anticipation of the negotiation of this Agreement. This Agreement shall supercede the terms of the MOU, which shall terminate and be of no further force or effect. The initial reservation payment of $37,500 that was made upon execution of the MOU shall be credited by City to the first quarterly invoice for water delivery pursuant to Paragraph 8.

3. **Term of Agreement.**

(a) Contract Term. The term of the Agreement shall commence on the Effective Date and end on June 30, 2085 ("Term"). Notwithstanding the Term, the delivery of Supplemental Water pursuant to this Agreement during any period on or after June 30, 2035, shall be subject to the renewal of the contract between the City and Central Coast Water Authority for SWP water. Furthermore, the terms of this Agreement shall be subject to renegotiation as described below in the event that the SWP contract or any subsequent SWP contract is not renewed or the terms of such renewal either (i) substantially impair the ability of City to continue to provide Supplemental Water in the quantities set forth in this Agreement; or (ii) the cost of continuing to provide Supplemental Water pursuant to the terms of this Agreement would create a significant financial burden on the City. In no event shall the City be required to deliver Supplemental Water following June 30, 2035 at a financial loss. Upon the occurrence of one of the foregoing events and within thirty (30) days of a written request from City to NCSD requesting renegotiation, the Parties shall negotiate in good faith and use their best efforts to equitably amend the terms of this Agreement to allow for the continued delivery of Supplemental Water on terms that are mutually beneficial to the Parties for the duration of the Term. The parties will meet in good faith in 2085 to determine whether to extend the term of the Agreement.

(b) Dispute Resolution. In the event of a dispute as to whether clause (i) and/or (ii) of Paragraph 3(a) have been triggered as a result of the renegotiation or non-renewal of the SWP contract, then such dispute shall be referred to the dispute resolution procedures referenced in Paragraph 19 of this Agreement. If a final finding is made as a result of such dispute resolution procedure that clause (i) and/or clause (ii) have been triggered, then the Parties shall negotiate in good faith pursuant to Paragraph 3(a). If the Parties cannot agree on the terms and conditions for equitably amending the terms of this Agreement to address a substantial impairment pursuant to clause (i) of Paragraph 3(a), then whether or not there is a feasible solution to address such substantial impairment may also be referred to the dispute resolution procedures referenced in Paragraph 19 of this Agreement. Notwithstanding the foregoing, the allocation of cost and/or any revision in the price of Supplemental Water to implement a solution

or address the existence of an impairment or significant financial burden as set forth in Paragraph 3(a) shall be solely determined by the Parties on mutually acceptable terms and the dispute resolution procedure shall have no authority to order or impose any change with respect to such terms.

(c) Effective Date. The "Effective Date" shall mean the date that the NCSD interconnection described in Paragraph 9 has been completed and approved by City's technical staff as operationally ready for commencement of delivery of Supplemental Water.

(d) Delivery Year. Each "Delivery Year" shall commence on the Effective Date and any anniversary thereof during the Term and continue for a period of one (1) year.

4. Quantity of Supplemental Water.

(a) Minimum Delivery. In each Delivery Year during the Term of this Agreement, City shall deliver and NCSD shall purchase the following minimum quantity of Supplemental Water ("Minimum Quantity"):

Delivery Years 1 through 10	-	2,000 acre feet per year
Delivery Years 11 through 19	-	2,500 acre feet per year
Delivery Years 20 through end of Term	-	3,000 acre feet per year

Any portion of the Minimum Quantity of Supplemental Water that is not taken by NCSD during a given Delivery Year shall be forfeit and shall not roll over to the next year. In the event that City, in its sole and absolute discretion, agrees to deliver unused Supplemental Water in a subsequent Delivery Year, such late delivery shall be an accommodation to NCSD and shall not constitute a waiver or amendment to the terms of this Agreement.

(b) Additional Delivery. NCSD may request delivery of Supplemental Water in excess of the Minimum Quantity up to an additional 3,200 acre feet per year. NCSD shall give City no less than thirty (30) days written notice of its desire to purchase additional

Supplemental Water and the proposed schedule for such delivery. City shall make a good faith effort to comply with such request subject to (i) the availability of excess Supplemental Water from sources used for delivery of water to City's retail customers; and (ii) sufficient delivery capacity to fulfill such request at the NCSD interconnection using the City's existing water distribution system. Any such additional Supplemental Water shall be purchased and delivered on the same terms as the Minimum Quantity, provided, however, that if the cost of procuring and delivering additional Supplemental Water exceeds the cost of delivering the Minimum Quantity, City shall have the right to impose a surcharge to compensate City for such additional cost as a condition to delivery. City shall notify NCSD of the amount of any such surcharge prior to delivery of any additional Supplemental Water and NCSD shall have the right to withdraw its request. In no event shall City be required to undertake any capital cost or expansion of its existing infrastructure to provide additional Supplemental Water.

5. **Reservation of Minimum Quantity**. Subject to the terms and conditions of this Agreement, City shall hold on reserve sufficient Supplemental Water each year, including an equivalent amount of capacity in City's water distribution system, for City to fulfill its obligation to deliver the Minimum Quantity to NCSD under this Agreement. City shall deliver such Supplemental Water to NCSD from sources used to provide water to City's retail customers. Notwithstanding the foregoing, during the term of the Agreement, City may substitute or combine new or additional replacement sources of water for the source of Supplemental Water, provided, however, that any substitute, combined or additional sources must be equivalent in deliverability, reliability, quality, pressure, and environmental impacts to the source being replaced. Disputes regarding this Paragraph shall be resolved pursuant to Paragraph 19.

6. **Purchase Price for Supplemental Water**. The purchase price for Supplemental Water delivered by City to NCSD shall be based on the "Base Rate" of the City's Water Consumption Rates. For fiscal year 2008-09, the Base Rate is $2.441 per one hundred cubic feet of water (or $1,063.37 per acre-foot of water). The Base Rate may be adjusted each fiscal year subject to approval by the City Council, consistent with applicable legal requirements. Any such adjustment in the purchase price shall go into effect in the next quarterly billing period.

7. **Costs of Delivery.** Except as expressly set forth in this Agreement, City shall be responsible for all costs and expenses related to providing Supplemental Water to NCSD at the NCSD interconnection pursuant to this Agreement. Notwithstanding the foregoing, the purchase price for Supplemental Water includes a cost component for energy costs incurred by City to supply Supplemental Water to the NCSD interconnection equal to two hundred and six dollars and eighty five cents ($206.85) per acre foot ("Base Energy Cost"). In the event that the actual cost of energy incurred by City to supply Supplemental Water in any Delivery Year exceeds the Base Energy Cost, then City shall have the right to charge NCSD a premium equal to the difference between the actual cost and the Base Energy Cost. The Base Energy Cost shall be adjusted each Delivery Year by a percentage which is equivalent to fifty percent (50%) of the increase or decrease, if any, in the Consumer Price Index - Energy Services (Electricity and Natural Gas) - Los Angeles-Riverside-Orange County or any successor index.

8. **Payments for Supplemental Water**. City shall bill NCSD on a quarterly basis in arrears for Supplemental Water delivered to NCSD's interconnection during the previous three (3) months. The amount payable by NCSD to City shall be based on the total quantity in acre-feet of Supplemental Water delivered during the quarter just ended multiplied by the then-current purchase price (as determined in Paragraph 6), plus any costs payable by NCSD pursuant to this Agreement. Notwithstanding the foregoing, to the extent that NCSD has taken less than the Minimum Quantity as of the final quarterly billing for a Delivery Year, City shall bill NCSD for the remainder of the Minimum Quantity whether or not such Supplemental Water has been delivered, provided that such water was made available for delivery to NCSD as provided in Paragraph 9. All invoices billed to NCSD shall be payable within thirty (30) days of the invoice date, provided that no charges are disputed. City shall have the right to charge late fees of up to five percent (5%) of the overdue amount for any invoice that is not paid within such period. In the event NCSD disputes any charges on an invoice, the undisputed amount shall be paid consistent with this Paragraph and the original invoice shall be returned to City for correction and resubmission. If the parties are unable to reach an agreement regarding disputed charges, disputes shall be resolved pursuant to Paragraph 19.

9. Delivery of Water.

(a) **Point of Delivery**. The physical point of delivery of Supplemental Water pursuant to this Agreement shall be the proposed interconnection between the City water distribution system and the NCSD water distribution system located at Taylor Street and Blosser Road or such other alternative location as may be approved by City and NCSD. All facilities constructed by NCSD will be used solely for the purpose of delivering Supplemental Water to NCSD. NCSD shall cooperate with the reasonable requests of City with respect to taking any action necessary to preserve the integrity of the City's water distribution system and the City shall do likewise for NCSD. The operation and maintenance of the NSCD Interconnection will be detailed in an Operation Memorandum of Understanding that will be approved by the City and NCSD prior to connection. City shall waive any fees for City permits related to construction of facilities for delivery of the water. If the parties cannot agree on the terms of the Operations Memorandum of Understanding then the disputed terms will be subject to the dispute resolution procedures referenced in Paragraph 19 of this Agreement.

(b) **Facilities**. NCSD shall be responsible for designing, constructing and operating the NCSD interconnect. The plans and specifications of the NCSD interconnect shall be subject to prior approval by City, which approval shall not unreasonably be withheld provided that such plans and specifications conform to applicable code provisions and any technical requirements imposed for connections to the City's water distribution system. NCSD shall also be responsible for obtaining any and all regulatory and environmental permits, licenses or other approvals necessary to construct and operate the NCSD interconnection. NCSD and/or any contractor working on the NCSD interconnect shall provide insurance coverage naming the City as an additional insured and the scope of such insurance coverage shall be subject to the reasonable approval of City's risk manager prior to commencement of any work.

(c) **Construction, Regulatory/ Permit and Other Costs.** NCSD shall be solely responsible for all costs related to the construction and operation of the NCSD interconnection with City's retail water distribution system. NCSD shall also be solely

responsible for all regulatory and/or permit compliance and costs with respect to the NCSD interconnection.

(d) City Streets: License to Use Easements and Rights of Way. The City shall provide NCSD a license, at no additional cost, to use such portions of City streets, easements, and right of ways as are reasonably necessary to build the NCSD interconnect and deliver the Supplemental Water to NCSD. Such license shall be non-revocable during the Term of this Agreement and shall automatically terminate upon the termination of this Agreement. The foregoing licenses shall not include the right of NCSD to make any alteration or improvement within such City streets, easements and rights of way except in compliance with Paragraph 9.

(e) Delivery Schedule. City will deliver the Supplemental Water to NCSD at the NCSD interconnection upon a mutually agreeable delivery schedule. The volume of delivery to the NCSD interconnection shall not exceed a maximum of two hundred and seventy-five (275) acre-feet per month or a peak hour flow averaging 2500 gallons per minute. Delivery pressure at the point of connection shall exceed 60 psi during City's normal system operation, not including emergencies or incidents described in 9(f). Before delivery begins, the District and City shall agree to an Operation Memorandum of Understanding (OMOU) to describe the specific procedures and limitation on the operations provided for in this Agreement.

(f) Force Majeure. If by reason of acts of God, earthquakes, droughts, floods, storms, explosion, fires, labor troubles, strikes, insurrection, riots, acts of the public enemy, or federal, or state, order, rule, or regulation, the City is prevented, in whole or in part, from the delivery of the Supplemental Water to NCSD, as provided herein, then City may reduce delivery of Supplemental Water up to the same percentage the City reduces water delivery to its retail customers.

(g) Suspension. The delivery of water may be suspended or curtailed during any period of public emergency or disaster that is declared by City. For the purposes of this Agreement, a public emergency or disaster shall not include ordinary measures taken during

periods of drought or water shortage.

(h) **Obligations of City**. For the purposes of this Agreement and subject the limitations contained in this Paragraph 9, City shall have fulfilled its obligation to make Supplemental Water available for delivery so long as the amount of Supplemental Water purchased by NCSD is available at the NCSD interconnection for NCSD to take delivery of pursuant to a predetermined and mutually agreed upon delivery schedule.

10. **Water Quality.** City shall be responsible for ensuring that the quality of the Supplemental Water made available for delivery is of the same pressure and quality of water that City delivers to its residential customers. The quality of water which is delivered by the City to its residents complies with federal, state and local laws, regulations and permit requirements which are applicable to City, including standards applicable to wastewater discharge, as amended from time to time and subject to any compliance waiver granted to the City ("Quality Standards"). City shall provide NCSD with a copy of the Quality Standards (and any change thereto) which are applicable to City and NCSD shall be solely responsible for ensuring that the Quality Standards meet the federal, state and local laws, regulations and permit requirements for potable water delivery by NCSD to its customers, including the discharge of such water. To the extent that the quality standards which are applicable to NCSD exeed the Quality Standards, then NCSD shall be responsible for any necessary additional treatment of the Supplemental Water. City agrees to indemnify and hold NCSD harmless from any actual liability which arises as a result of the failure of Supplemental Water which is delivered to the NCSD interconnection to meet the Quality Standards. NCSD shall be solely responsible for any actual liability resulting from a change in water quality following the point of delivery (including any additional treatment undertaken by NCSD) and shall indemnify and hold City harmless from any actual liability which arises from any such change. City and NCSD shall promptly notify the other in the event that either becomes aware of a material adverse change in the quality of the Supplemental Water and shall cooperate to identify the cause of such change.

11. **Remarketing of Supplemental Water.** NCSD shall be free to remarket the Supplemental Water to other Parties within the NMMA without restriction to price and terms.

NCSD assumes all responsibility for delivery of Supplemental Water from the NCSD interconnection to its customers and contracting Parties. City's obligations under this Agreement are solely with NCSD and no customer of NCSD nor other third party shall have the right to enforce the terms of this Agreement as a third party beneficiary. City shall not sell water to other parties or persons within NCSD's service area or sphere of influence, as amended from time to time, without first receiving the written approval of NCSD.

12. **Regulatory Requirements**.

(a) Obligations of the City. The implementation of this Agreement shall be subject to satisfaction by City of the regulatory requirements set forth herein. City shall, if necessary, undertake the following: (i) Obtain all permits, consents, entitlements and approvals necessary to enable the City to reserve and sell, and NCSD to purchase, the Supplemental Water that is the subject of this Agreement; and (ii) fully and completely comply with the requirements of the California Environmental Quality Act ("CEQA"), including, if it is determined that this transaction is subject to CEQA and not exempt from CEQA, the completion of an initial study, and (1) either (a) there shall have been adopted a negative declaration or a mitigated negative declaration, or (b) a final environmental impact report shall have been completed and certified, and (2) the time shall have expired within which a judicial proceeding may be instituted challenging the validity or completeness of any such determination of exemption, or adoption of a negative declaration or of a mitigated negative declaration, or approval of a final environmental impact report.

(b) Obligations of NCSD. NCSD shall be solely responsible for obtaining all regulatory approvals necessary in connection with purchasing and taking delivery of the Supplemental Water.

13. **Service Area Integrity**. Nothing in this Agreement is intended nor shall it be interpreted to waive the right of City to provide water service to current or future areas within or adjacent to its existing service area.

14. **Representations or Warranties of City.** City makes the following representations, warranties and covenants to NCSD:

(a) **Power and Authority to Execute and Perform this Agreement.** The City has the power and authority to enter into this Agreement and to perform its obligations and all necessary approvals and authorizations have been obtained.

(b) **Availability of Resource.** Based on information which is currently known to City and City's current forecast of future use, on a long-term basis, City has water and the necessary infrastructure available to fulfill City's obligations under this Agreement that is surplus to that needed to serve City's current and long-term future anticipated demand.

(c) **Enforceability.** This Agreement constitutes a legal, valid and binding obligation of the City, and is enforceable against the City in accordance with its terms.

15. **Representations or Warranties of NCSD.** NCSD makes the following representations, warranties and covenants to City:

(a) **Power and Authority to Execute and Perform this Agreement.** NCSD has the power and authority to enter into this Agreement and to perform its obligations and all necessary approvals and authorizations have been obtained.

(b) **Enforceability.** This Agreement constitutes a legal, valid and binding obligation of NCSD, enforceable against NCSD in accordance with its terms.

16. **Default and Termination by City.** In the event NCSD fails to make any payment to City under this Agreement when due, or fails to perform any obligation otherwise required by this Agreement, City shall demand in writing that NCSD cure such non-performance. NCSD shall have thirty (30) days after receipt of such demand to cure. In the event NCSD fails to cure a default within the thirty (30) day period, City may suspend delivery of Supplemental Water and redirect such water to other uses for the duration of the suspension. City shall restore

water delivery when NCSD has cured all outstanding defaults and paid all amounts due to the City in full. In the event that NCSD does not cure a default within one (1) year of suspension, then City may terminate this Agreement at any time thereafter.

17. **Default and Termination by NCSD.** NCSD shall have the right to terminate this Agreement, without recourse, if (i) the City is found to be in material breach of its obligations to deliver the Supplemental Water as set forth in this agreement; or (ii) upon written notice to City that NCSD is unable to pay for the Supplemental Water due to the majority protest procedures or other procedures referenced in Proposition 218; or (iii) upon three (3) years prior written notice to City, provided, however, that no such termination without cause shall become effective until the thirtieth (30^{th}) anniversary of the Effective Date.

18. **Expiration of Term.** This Agreement shall terminate and be of no further force and effect as of the expiration of the Term.

19. **Dispute Resolution.** Except as otherwise limited by this Agreement, any dispute arising under this Agreement, including, without limitation, all disputes relating in any manner to the performance or enforcement of this Agreement, shall be resolved by binding arbitration in the County of Santa Barbara, California, pursuant to the comprehensive arbitration rules and procedures of Judicial Arbitration and Mediation Services ("JAMS") or any successor thereto, as amended or as augmented in this Agreement (the "Rules"). Arbitration shall be initiated as provided by the Rules, although the written notice to the other party initiating arbitration shall also include a description of the claim(s) asserted and the facts upon which the claim(s) are based. Arbitration shall be final and binding upon the parties and shall be the exclusive remedy for all claims subject hereto, including any award of attorney's fees and costs. Either party may bring an action in court to compel arbitration under this Agreement and to enforce an arbitration award. All disputes shall be decided by a single arbitrator. The arbitrator shall be selected by mutual agreement of the parties within thirty (30) days of the effective date of the notice initiating the arbitration. If the parties cannot agree on an arbitrator, then the complaining party shall notify JAMS and request selection of an arbitrator in accordance with the Rules. The arbitrator shall have only such authority to award equitable relief, damages, costs, and fees as a

court would have for the particular claim(s) asserted. In no event shall the arbitrator award punitive damages of any kind. The parties acknowledge that one of the purposes of utilizing arbitration is to avoid lengthy and expensive discovery and allow for prompt resolution of the dispute. The arbitrator shall have the power to limit or deny a request for documents or a deposition if the arbitrator determines that the request exceeds those matters which are directly relevant to the claims in controversy. The parties may make a motion for protective order or motion to compel before the arbitrator with regard to the discovery, as provided in the Code of Civil Procedure. Notwithstanding the election by the parties to arbitrate their disputes, nothing contained herein shall prevent a party from filing an action in a court of competent jurisdiction to seek any form of equitable remedy or relief.

20. Indemnity. NCSD, its successors and assigns, shall hold harmless, defend and indemnify City, its officials, employees, agents, successors and assigns (all of which are herein referred to as the "City Indemnified Parties") from and against all liabilities, obligations, claims, damages, losses, actions, judgments, suits, costs and expenses, including but not limited to reasonable attorneys' fees (collectively, "Damages"), which may be imposed on, incurred by, or asserted against City Indemnified Parties as a result of (i) a breach of NCSD's obligations; or (ii) the conduct of NCSD's operations associated with the NCSD interconnection to City's retail distribution system and the subsequent delivery of Supplemental Water to NCSD's customers. Notwithstanding the foregoing, in no event shall NCSD be liable to indemnify a City Indemnified Party for (i) any Damages resulting from the negligence or willful misconduct of City; (ii) any third party claim brought in connection with regulatory approvals; or (iii) any claim brought in connection with the quality of the Supplemental Water as provided in Paragraph 10 above. This indemnification shall survive termination of the Agreement.

21. Third Party Claims. Promptly following notice of any "Third Party Claim" for which City is indemnified hereunder, City shall notify NCSD of such claim in writing. NCSD shall have a period of thirty (30) days following the receipt of such notice to notify City of whether NCSD elects to assume the defense thereof. If NCSD so notifies City that it elects to assume the defense, NCSD thereafter shall undertake and diligently pursue the defense of the Third Party Claim. NCSD shall not consent to entry of judgment or enter into any settlement

agreement, without the consent of City, which does not include a complete and unconditional release of City or which imposes injunctive or other equitable relief against City. City shall be entitled to participate in, but not control, the defense thereof, with counsel of its choice and at its own expense. If NCSD does not give the requisite notice, or fails to assume and diligently pursue the defense of such Third Party Claim, City may defend against such Third Party Claim in such manner as it may deem appropriate, at NCSD's expense, including without limitation settlement thereof on such terms as City may deem appropriate, and to pursue such remedies as may be available to City against NCSD. Notwithstanding the foregoing, City shall not consent to entry of a judgment or enter into any settlement agreement, without the consent of NCSD, which does not include a complete and unconditional release of NCSD.

22. **Notice of Claims.** The Parties shall promptly notify each other within ten (10) days of City or NCSD becoming aware of: (1) any claims or suits brought against City or NCSD which involve this Agreement or water supplied to NCSD pursuant to this Agreement, (2) any Third Party Claims, and (3) any force majeure event. Any such notice shall conform to the requirements specified in Paragraph 28 of this Agreement.

23. **Remedies Not Exclusive.** Remedies provided in this Agreement for enforcement of its terms are intended and shall be construed as cumulative rather than exclusive and shall not be deemed to deprive either Party from also using any other remedies provided by this Agreement or by law.

24. **No Transfer of Rights.** The rights granted to NCSD hereunder constitute the right to take delivery of Supplemental Water only and shall not be interpreted as a sale, transfer, or assignment of any of City's water rights.

25. **Subject to Applicable Law.** The Parties acknowledge and agree that this Agreement and the rights and obligations of the Parties shall be subject to the laws governing municipal corporations and special districts as they now exist and as they may be amended or codified by the Legislature of the State of California.

26. **Entire Agreement.** This Agreement contains the entire understanding between NCSD and City with respect to its subject matter, and supersedes all prior agreements, oral or written, and all prior or contemporaneous discussions or negotiations between NCSD and City. This Agreement cannot be amended except in writing signed by both Parties.

27. **No Waiver.** Any failure or delay on the part of either Party to exercise any right under this Agreement shall not constitute a waiver of the right, and shall not preclude such Party from exercising or enforcing the right, or any other provision of this Agreement, on any subsequent occasion.

28. **Notices.** All notices or other communications required or desired to be given pursuant to this Agreement shall be in writing and shall be hand-delivered or sent by a reputable overnight courier service providing delivery confirmation. Each such notice or communication shall be deemed to be duly given when hand-delivered or one (1) day after being deposited for next day delivery with an overnight courier. Each such notice or communication shall be addressed to the Parties at their respective addresses set forth next to their signatures below, or such other address as a Party notifies the other in writing.

29. **Headings; Paragraph References**. Captions and headings appearing in this Agreement are inserted solely as reference aids for the ease and convenience; they shall not be deemed to define or limit the scope or substance of the provisions they introduce, nor shall they be used in construing the intent or effect of such provisions.

30. **Separability**. If any provision of this Agreement is finally determined by a court to be invalid or unenforceable as written, the provision shall, if possible, be enforced to the extent reasonable under the circumstances and otherwise shall be deemed deleted from this Agreement. The other provisions of this Agreement shall remain in full force and effect so long as the material purposes of the Agreement and understandings of the Parties are not impaired.

31. **Binding Effect Assignment**. This Agreement shall be binding on and inure to the benefit of the Parties, and their respective successors and permitted assigns. NCSD shall

have the right to assign its rights under this Agreement with the written consent of City, provided, however, that the City shall not unreasonably withhold such consent and further provided that the assignee agrees to be bound by all of the obligations of NCSD set forth herein. Notwithstanding the foregoing, no assignment permitted hereunder shall permit the delivery of Supplemental Water to any property or development other than the Property without the written consent of the City, in its sole and absolute discretion.

32. **Opinions and Determinations: Good Faith.** Where the terms of this Agreement provide for action to be based upon opinion, judgment, approval, review or determination of either party hereto, such terms are not intended to and shall never be construed to permit such opinion, judgment, approval, review or determination to be arbitrary, capricious or unreasonable. The District and the NCSD shall each act in good faith in performing their respective obligations as set forth in this Agreement.

33. **Incorporation of Recitals.** Recitals A through F are incorporated herein by reference as though set forth at length.

34. **Attorneys Fees**. In the event that any legal proceeding other than the dispute resolution procedures referenced in Paragraph 19, above, is brought to enforce one or more of the terms of this Agreement, to restrain an alleged violation of this Agreement, or to determine the validity of this Agreement or any part, the prevailing Party in any such action or proceeding shall be entitled to recover from the other its reasonable costs and attorneys' fees, in addition to any other remedies available to it in law or equity. If both Parties are successful in one or more causes of action during any such proceeding, the costs and fees shall be apportioned as determined by the court.

35. **Governing Law and Venue**. This Agreement is a contract governed in accordance with the laws of the State of California. THE PARTIES HEREBY AGREE THAT VENUE FOR ANY ACTION BROUGHT TO ENFORCE THE TERMS OF THIS AGREEMENT SHALL BE IN A COURT OF COMPETENT JURISDICTION IN THE COUNTY OF SANTA BARBARA OTHER THAN A COURT LOCATED WITHIN THE

CITY OF SANTA MARIA OR THE NORTHERN PORTION OF SANTA BARBARA COUNTY, CALIFORNIA, AND CONSENT TO THE JURISDICTION THEREOF.

IN WITNESS WHEREOF, the Parties have executed this agreement as of the date first written above.

CITY:

City of Santa Maria
a California municipal corporation

By: _____
Name: Richard G. Sweet, P.E.
Title: Director of Utilities

Address: 2065 E. Main Street
Santa Maria, CA 93454
Fax: (805) 928-7240
Phone: (805) 925-0951

NCSD:

Nipomo Community Services District
a California public agency

By: _____
Name: James Harrison
Title: President

Address: P.O. Box 326
Nipomo, CA 93444
Fax: (805) 929-1932
Phone: (805) 929-1133

APPROVED AS TO FORM:

Best Best & Krieger LLP

By: _____
Eric Garner, Partner

APPROVED AS TO FORM:

District Counsel

By: _____
Jon Seitz, District Counsel

APPENDIX C. SANTA MARIA GROUNDWATER JUDGMENT

SUPERIOR COURT OF CALIFORNIA

COUNTY OF SANTA CLARA

SANTA MARIA VALLEY WATER CONSERVATION DISTRICT.

Plaintiff,

vs.

CITY OF SANTA MARIA, ET AL.,

Defendants.

AND RELATED CROSS-ACTIONS AND ACTIONS CONSOLIDATED FOR ALL PURPOSES

SANTA MARIA GROUNDWATER LITIGATION
Lead Case No. 1-97-CV-770214

(CONSOLIDATED FOR ALL PURPOSES)

[Consolidated With Case Numbers: CV 784900; CV 785509; CV 785522; CV 787150; CV 784921; CV 785511; CV 785936; CV 787151; CV 784926; CV 785515; CV 786791; CV 787152; 1-05-CV-036410]

San Luis Obispo County Superior Court Case Nos. 990738 and 990739

JUDGMENT AFTER TRIAL

This matter came on for trial in five separate phases. Following the third phase of trial, a large number of parties entered into a written stipulation dated June 30, 2005 to resolve their differences and requested that the court approve the settlement and make its terms binding on them as a part of any final judgment entered in this case. Subsequent to the execution of the stipulation by the original settling parties, a number of additional parties have agreed to be bound by the stipulation – their signatures are included in the attachments to this judgment.

The June 30, 2005 Stipulation is attached as Exhibit "1:" and all exhibits to the Stipulation are separately attached as Exhibits "1A" through "1H". The Stipulating Parties are identified on Exhibit "1A." The court approves the Stipulation, orders the Stipulating Parties only to comply with each and every term thereof, and incorporates the same herein as though set forth in full. No non-stipulating party is bound in any way by the stipulation except as the court may otherwise independently adopt as its independent judgment a term or terms that are the same or similar to such term or provision of the stipulation.

As to all remaining parties, including those who failed to answer or otherwise appear, the court heard the testimony of witnesses, considered the evidence found to be admissible by the court, and heard the arguments of counsel. Good cause appearing, the court finds and orders judgment as follows.

As used in this Judgment, the following terms shall have the meanings herein set forth:

Basin – The groundwater basin described in the Phase I and II orders of the court, as modified, with attachments and presented in Exhibit "1B".

Defaulting Parties – All persons or entities listed on Exhibit "3".

Imported Water – Water within the Basin received from the State Water Project, originating outside the Basin, that absent human intervention would not recharge or be used in the Basin.

LOG Parties – All persons or entities listed on Exhibit "2," listed under the subheading "LOG Parties".

Non-Stipulating Parties – All Parties who did not sign the Stipulation, including the Defaulting Parties and the LOG and Wineman Parties.

Parties – All parties to the above-referenced action, including Stipulating Parties, Non-Stipulating Parties, and Defaulting Parties.

Public Water Producers – City of Santa Maria, Golden State Water Company, Rural Water Company, the "Northern Cities" (collectively the Cities of Arroyo Grande, Pismo Beach, and Grover Beach, and Oceano Community Services District), and the Nipomo Community Services District.

Return Flows – All water which recharges the Basin after initial use, through the use of percolation ponds and others means, derived from the use and recharge of imported water delivered through State Water Project facilities.

Stipulating Parties – All Parties who are signatories to the Stipulation.

Stipulation – The Stipulation dated June 30, 2005 and incorporated herein as Exhibit "1," with each of its Exhibits separately identified and incorporated herein as Exhibits "1A" through "1H".

Storage Space – The portion of the Basin capable of holding water for subsequent reasonable and beneficial uses.

Wineman Parties – All persons or entities listed on Exhibit "2," under the subheading "Wineman Parties".

The following Exhibits are attached to this Judgment:

1. *Exhibit "1,"* June 30, 2005 Stipulation and the following exhibits thereto:

a. *Exhibit "1A,"* list identifying the Stipulating Parties and the parcels of land bound by the Stipulation.

b. *Exhibit "1B,"* Phase I and II Orders, as modified, with attachments.

c. *Exhibit "1C,"* map of the Basin and boundaries of the three Management Areas.

d. *Exhibit "1D,"* map identifying those lands as of January 1, 2005: 1) within the boundaries of a municipality or its sphere of influence, or within the process of inclusion in its sphere of influence; or 2) within the certificated service area of a publicly regulated utility; and a list of selected parcels that are nearby these boundaries which are excluded from within these areas.

e. *Exhibit "1E,"* 2002 Settlement Agreement between the Northern Cities and Northern Landowners.

f. *Exhibit "1F,"* the agreement among Santa Maria, Golden State and Guadalupe regarding Twitchell Project and the Twitchell Management Authority.

g. *Exhibit "1G,"* the court's Order Concerning Electronic Service of

Pleadings and Electronic Posting of Discovery Documents dated June 27, 2000.

h. *Exhibit "1H,"* the form of memorandum of agreement to be recorded.

2. *Exhibit "2."* List of Non-Stipulating LOG and Wineman Parties and recorded deed numbers of property they owned at the time of trial.

3. *Exhibit "3."* List of Defaulting parties.

A declaratory judgment and physical solution are hereby adjudged and decreed as follows:

1. As of the time of trial, LOG and Wineman Parties owned the real property, listed by assessor's parcel numbers, as presented in Exhibit 2.

2. The City of Santa Maria and Golden State Water Company are awarded prescriptive rights to ground water against the non-stipulating parties, which rights shall be measured and enforced as described below.

3. The City of Santa Maria and Golden State Water Company have a right to use the Basin for temporary storage and subsequent recapture of the Return Flows generated from their importation of State Water Project water, to the extent that such water adds to the supply of water in the aquifer and if there is storage space in the aquifer for such return flows, including all other native sources of water in the aquifer. The City of Santa Maria's Return Flows represent 65 percent of the amount of imported water used by the City. Golden State Water Company's Return Flows represent 45 percent of the amount of imported water used by Golden State in the basin.

4. (a) The Northern Cities have a prior and paramount right to produce 7,300 acre-feet of water per year from the Northern Cities Area of the Basin; and (b) the Non-Stipulating Parties have no overlying, appropriative, or other right to produce any water supplies in the Northern Cities Area of the Basin.

5. The Groundwater Monitoring Provisions and Management Area Monitoring Programs contained in the Stipulation, including Sections IV(D) (All Management Areas); V(B) (Santa Maria Management Area), VI(C) (Nipomo Mesa Management Area), and VII (1) (Northern Cities Management Area), inclusive, are independently adopted by the court as

necessary to manage water production in the basin and are incorporated herein and made terms of this Judgment. The Non-Stipulating Parties shall participate in, and be bound by, the applicable Management Area Monitoring Program. Each Non-Stipulating Party also shall monitor their water production, maintain records thereof, and make the data available to the court or its designee as may be required by subsequent order of the court.

6. No Party established a pre-Stipulation priority right to any portion of that increment of augmented groundwater supply within the Basin that derives from the Twitchell Project's operation.

7. The court determines that there is a reasonable likelihood that drought and overdraft conditions will occur in the Basin in the foreseeable future that will require the exercise of the court's equity powers. The court therefore retains jurisdiction to make orders enforcing the rights of the parties hereto in accordance with the terms of this judgment.

a. Groundwater

i. The overlying rights of the LOG and Wineman Parties shall be adjusted by amounts lost to the City of Santa Maria and Golden State Water Company by prescription. The prescriptive rights of the City of Santa Maria and Golden State Water Company must be measured against the rights of all overlying water producers pumping in the acquifer as a whole and not just against the LOG and Wineman Parties because adverse pumping by the said water producers was from the aquifer as a whole and not just against the non-stipulating parties. The City of Santa Maria established total adverse appropriation of 5100 acre feet per year and Golden State Water Company established adverse appropriation of 1900 acre feet a year, measured against all usufructuary rights within the Santa Maria Basin. The City of Santa Maria and Golden State Water Company having waived the right to seek prescription against the other stipulating parties, may only assert such rights against the non stipulating parties in a proportionate quantity. To demonstrate the limited right acquired by the City of Santa Maria and Golden State Water Company, by way of example, if the cumulative usufructuary rights of the LOG and Wineman Parties were 1,000 acre-feet and the cumulative usufructuary rights of all other overlying groundwater right holders within the

Basin were 100,000 acre-feet, the City of Santa Maria and Golden State Water Company would each be entitled to enforce 1% of their total prescriptive right against the LOG and Wineman Parties. That is, Golden State Water Company could assert a prescriptive right of 19 annual acre-feet, and the City of Santa Maria 51 annual acre-feet, cumulatively against the LOG and Wineman Parties, each on a proportionate basis as to each LOG and Wineman Party's individual use.

ii. The Defaulting Parties failed to appear at trial and prove any usufructuary water rights. The rights of the Defaulting Parties, if any, are subject to the prescriptive rights of the City of Santa Maria and Golden State Water Company, as well as the other rights of said parties as established herein.

b. Imported Water

The City of Santa Maria and Golden State Water Company shall have rights to Return Flows in the amount provided above.

c. Northern Cities

The rights of all Parties in the Northern Cities Management Area shall be governed as described above on page 4, lines 21 to 24.

8. The LOG and Wineman Parties have failed to sustain the burden of proof in their action to quiet title to the quantity of their ground water rights as overlying owners. All other LOG and Wineman party causes of action having been dismissed, judgment is hereby entered in favor of the Public Water Producers as to the quiet title causes of action brought by the LOG and the Wineman Parties. Legal title to said real property is vested in the Log and Wineman Parties and was not in dispute in this action.

9. Each and every Party, their officers, agents, employees, successors and assigns, are enjoined and restrained from exercising the rights and obligations provided through this Judgment in a manner inconsistent with the express provisions of this Judgment.

10. Except upon further order of the court, each and every Party and its officers, agents, employees, successors and assigns, is enjoined and restrained from transporting groundwater to areas outside the Basin, except for those uses in existence as of the date of this

Judgment; provided, however, that groundwater may be delivered for use outside the Basin as long as the wastewater generated by that use of water is discharged within the Basin, or agricultural return flows resulting from that use return to the Basin.

11. Jurisdiction, power and authority over the Stipulating Parties as between one another are governed exclusively by the Stipulation. The court retains and reserves jurisdiction as set forth in this Paragraph over all parties hereto. The court shall make such further or supplemental orders as may be necessary or appropriate regarding interpretation and enforcement of all aspects of this Judgment, as well as clarifications or amendments to the Judgment consistent with the law.

12. Any party that seeks the court's exercise of reserved jurisdiction shall file a noticed motion with the court. Any noticed motion shall be made pursuant to the court's Order Concerning Electronic Service of Pleadings and Electronic Posting of Discovery Documents dated June 27, 2000.

13. The court shall exercise *de novo* review in all proceedings. The actions or decisions of any Party, the Monitoring Parties, the TMA, or the Management Area Engineer shall have no heightened evidentiary weight in any proceedings before the court.

14. As long as the court's electronic filing system remains available, all court filings shall be made pursuant to court's Order Concerning Electronic Service of Pleadings and Electronic Posting of Discovery Documents dated June 27, 2000, or any subsequent superseding order. If the court's electronic filing system is eliminated and not replaced, the Parties shall promptly establish a substitute electronic filing system and abide by the same rules as contained in the court's Order.

15. Nothing in this Judgment shall be interpreted as relieving any Party of its responsibilities to comply with state or federal laws for the protection of water quality or the provisions of any permits, standards, requirements, or order promulgated thereunder.

16. Each Party shall designate the name, address and e-mail address, if any, to be used for purposes of all subsequent notices and service by a designation to be filed within thirty days after entry of this Judgment. This designation may be changed from time to time

by filing a written notice with the court. Any Party desiring to be relieved of receiving notices may file a waiver of notice on a form approved by the court. The court shall maintain at all times a current list of Parties to whom notices are to be sent and their addresses for purposes of service. The court shall also maintain a full current list of names, addresses, and e-mail addresses of all Parties or their successors, as filed herein. Copies of such lists shall be available to any Person. If no designation is made, a Party's designee shall be deemed to be, in order of priority: i) the Party's attorney of record; ii) if the Party does not have an attorney of record, the Party itself at the address specified.

17. All real property owned by the Parties within the Basin is subject to this Judgment. The Judgment will be binding upon and inure to the benefit of each Party and their respective heirs, executors, administrators, trustees, successors, assigns, and agents. Any party, or executor of a deceased party, who transfers property that is subject to this judgment shall notify any transferee thereof of this judgment and shall ensure that the judgment is recorded in the line of title of said property. This Judgment shall not bind the Parties that cease to own property within the Basin, and cease to use groundwater. Within sixty days following entry of this Judgment, the City of Santa Maria, in cooperation with the San Luis Obispo entities and Golden State, shall record in the Office of the County Reporter in Santa Barbara and San Luis Obispo Counties, a notice of entry of Judgment.

The Clerk shall enter this Judgment.

SO ORDERED, ADJUDGED, AND DECREED.

Dated: January 25, 2008

Judge of the Superior Court
JACK KOMAR

APPENDIX E. CUWCC BMP AND 2009 ANNUAL REPORT

APPENDIX F. DWR REVIEW SHEETS CHECKLIST

Nipomo Community Services District

2010 Urban Water Management Plan
Public Review Draft

Prepared Under the Responsible Charge of:

Jeffery M. Szytel, P.E.

California R.C.E. 63004, Expires 6/30/2012

10/21/2010

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WSC
Water Systems Consulting, Inc.

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GLOSSARY OF TERMS AND ACRONYMS

AB 2882- Assembly Bill No. 2882

ACT- Active

Adjudication- the hearing and settlement of the Santa Maria Groundwater Basin Litigation

afy- acre feet per year

ATS- Automatic Transfer Switch

Basin- Santa Maria Groundwater Basin

BMP- Best Management Practice

Boyle Engineering Corporation- is now known as AECOM

County- San Luis Obispo County

CUWCC- California Urban Water Conservation Council

District- Nipomo Community Services District

DMM- Demand Management Measure

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DWR- Department of Water Resources

ETo- Evapotranspiration

GIS- Geographic Information System

gpm- gallons per minute

GSWC- Golden State Water Company; formerly Southern California Water Company

Guidebook- Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan , Department of Water Resources 2005

HCF- Hundred Cubic Feet

HDR- HDR, Inc. is a consultant

IRWMP- Integrated Regional Water Management Plan

Judgment- the Stipulation for the Santa Maria Groundwater Basin Litigation

LAFCO- San Luis Obispo County Local Agency Formation Commission

MFR- Multi-Family Residential

MG- Million Gallons

mg/L- milligrams per Litre

msl- mean sea level

NCMA- Northern Cities Management Area

NCSD- Nipomo Community Services District

NMMA- Nipomo Mesa Management Area

NMMA TG- Nipomo Mesa Management Area Technical Group

NMWCA- Nipomo Mesa Water Conservation Area

OS- Out of Service

Per Capita TM- Baseline Daily Per Capita Water Use Technical Memorandum

Response Plan- Response Plan for Potentially Severe and Severe Water Shortage Conditions

RWC- Rural Water Company

SAIC- Science Applications International Corporation

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Santa Maria Groundwater Basin Litigation- *Santa Maria Valley Water Conservation District vs. City of Santa Maria, et al.* Case No. 770214

SB 7- Senate Bill x 7-7Settlement- the effects and implications of the Stipulation

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SCWC- Southern California Water Company ¶

SFR- Single-Family Residential

SLOCOG- San Luis Obispo Council of Governments

SLO-PD- San Luis Obispo County Planning and Development

SMVMA- Santa Maria Valley Management Area

SOI- Sphere of Influence

Stipulation- the settlement of the Santa Maria Groundwater Basin Litigation

SWP- California State Water Project

UWMP- Urban Water Management Plan

UWMP Act- Urban Water Management Planning Act

WIP- Santa Maria Waterline Intertie Project

WIP FEIR- Santa Maria Waterline Intertie Project Final Environmental Impact Report

WMWC- Woodlands Mutual Water Company

Work Product 1- Work Product 1 Demand Database Technical Memorandum

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WSA- Water Supply Assessment

WSC- Water Systems Consulting, Inc.

1 INTRODUCTION

This report comprises the 2010 Urban Water Management Plan (UWMP) update for the Nipomo Community Services District (NCSD or the District). NCSD is located in Nipomo, CA, an unincorporated community in Southern San Luis Obispo County. The District serves portions of the Nipomo community and the greater Nipomo Mesa. NCSD is an independent Special District formed and operated pursuant to Government Code §61000 et seq. NCSD provides water, wastewater, and solid waste services, as well as landscape maintenance, street lighting, and drainage services to its customers pursuant to Government Code §61600(a), (b), and (c). NCSD does not have land planning authority, which is retained by the County of San Luis Obispo; however, County land use planning authority is subordinated to resource limitations such as water and sewer capacity as established by the NCSD.

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As a part of the California Water Code, the California Urban Water Management Planning Act (UWMP Act) requires all urban water suppliers with more than 3,000 connections or distributing more than 3,000 acre feet per year (afy) to complete an UWMP every five years ending in '5' and '0'. The UWMP Act is administered by the California Department of Water Resources (DWR), who is responsible for developing guidance for preparation of the UWMPs, reviewing the submitted plans for completeness, compiling the data for statewide and regional analysis, and publishing the documents online for public access. In 2009 NCSD produced about 2,700 afy of water and had 3,947 connections. NCSD adopted its first UWMP in January 2004. Since the first UWMP in 2004, there has been one update adopted by NCSD's Board of Directors on January 25, 2006.

This UWMP update was prepared based on guidance from DWR's *Guidebook to Assist Water Suppliers in the Preparation of a 2005 Urban Water Management Plan* (Guidebook) (1), DWR SB x 7-7 (SB 7) public listening sessions, the Public Draft of *Urban Water Use Target Technical Methodologies* (2) prepared by DWR, and the 2005 UWMP DWR Review Sheets (Appendix F).

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The 2010 UWMPs are due July 1, 2011. Usually, UWMPs are due on December 31 of years ending in 0 and 5, but a 6-month extension has been granted for submittal of the 2010 UWMPs to provide additional time for water suppliers to address the SB 7 requirements. The 2010 UWMP Draft Guidebook to support water suppliers in UWMP preparation will be available in November 2010 and the final Guidebook will be available in January 2011. DWR's tentative 2010 UWMP schedule is summarized in Table 1.

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Table 1. Preliminary Schedule for DWR's 2010 UWMP Guidebook Update

Date	Event/Task
October 2010	Preliminary Guidebook released
November 2010	Initial workshops
January 2011	Amended Guidebook released
January/February 2011	Additional workshops
July 1, 2011	Submittal to DWR of UWMPs

At the direction of NCSD's Board of Directors, this report was produced before DWR's 2010 Guidebook was available, due to urgent supply conditions and significant changes in the District's water management plans since 2005. According to DWR, the 2010 Guidebook "...is being reformatted and updated to reflect changes in the law since 2005." Since this report addresses all updates to the UWMP Act since 2005 (see Table 2), the updated Guidebook is not expected to cause any material revisions.

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According to the 2005 Guidebook, "As a general rule, DWR reviewers will consider a plan complete if it meets the criteria listed in the Review Sheets" (1). A Review Sheet checklist is provided in Appendix F. Table 2 summarizes changes to the UWMP Act since 2005 that have been addressed in this UWMP.

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1.1 PURPOSE

The UWMP is a valuable planning document used for multiple purposes:

- Meets a statutory requirement of the California Water Code
- Provides a key source of information for Water Supply Assessments (WSAs) and Written Verifications of Water Supply
- Supports regional long-range planning documents including City and County General Plans
- Provides a standardized methodology for water utilities to assess their water resource needs and availability
- Serves as a critical component of developing Integrated Regional Water Management Plans (IRWMPs).

Table 2. Summary of Changes in the UWMP Act since 2005

New / Revised Water Code Section Number	Summary of Changes	UWMP Approach
10631.1	Demand projections must include projected water use for single-family and multi-family residential housing needed for lower income households.	Values are estimated based on NCSD customer data and the County of San Luis Obispo's Housing Element (Section 3.1.1).
10631.5	This section includes additional policies and procedures for determining an urban water supplier's eligibility for State grants and loans considering its implementation of the Demand Management Measures (DMMs) described in Section 10631.	No impact to this UWMP.
10631.7	This section requires DWR to convene an independent technical panel to provide information and recommendations to DWR and the Legislature on new DMMs, technologies and approaches.	No current impact to this UWMP, however DMMs for subsequent years could change depending upon input from the technical panel.
10644 (c)	This section requires DWR to report to the legislature and DMM technical panel those DMMs that achieve water savings significantly above the levels established by DWR.	No impact to this UWMP.
Part 2.55, commencing with Section 10608 (Senate Bill x 7-7)	Requires all water suppliers to achieve a reduction in per capita water use of 20% by December 31, 2020, with an interim target of 10% reduction by December 31, 2015.	This UWMP includes estimates of: 1) baseline daily per capita water use; 2) urban water use target; 3) interim urban water use target; 4) compliance daily per capita water use; and 5) bases for determining the estimates, with references to supporting data (see Appendix A).

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1.2 PUBLIC INVOLVEMENT

To fulfill the requirements of Water Code Section 10642 of the UWMP Act, NCSD made the draft 2010 UWMP available for public review and held a public hearing on January 26, 2010. In addition, NCSD maintained the draft UWMP on its website from September 22, 2010, to XXX, and maintained a hardcopy at its offices from September 22, 2010, to XXX.

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1.3 AGENCY COORDINATION

NCSD coordinated with multiple neighboring and stakeholder agencies in the preparation of this UWMP. The coordination efforts were conducted to: 1) inform the agencies of the activities of the District; 2) gather high quality data for use in developing this UWMP; and 3) coordinate planning activities with other related regional plans and initiatives. The coordination activities conducted by the District in preparation of this plan are summarized in Table 3.

Table 3. Agency Coordination

Agency	Participated in developing the plan	Commented on the draft	Attended public meetings	Contacted for assistance	Sent a copy of the draft plan	Sent a notice of intention to adopt	Notice of Plan Availability	Not involved / No information
AL Research Flowers								
Ball Tagawa Growers								
Blacklake Village Master Association								
California Department of Water Resources		X		X	X	X		-
Callender Road Association								
Central Coast Water Authority								
City of Santa Maria				X	X	X		
Clearwater Nursery								
County of San Luis Obispo Department of Agriculture								
County of San Luis Obispo Planning				X	X	X		
County of San Luis Obispo Public Works				X	X	X		
Cypress Lane Water Co.								
Golden State Water Company					X	X		-
Greenheart Farms								
[illegible]								
[illegible] Mutual Water Company								
Hardin Water Co.								
Home Builders Association of the Central Coast								
Kirk Consulting for Rob Rossi								
La Colonia Water Association								
La Mesa Water Co.								
LAFCO				X	X	X		-
Lucia Mar Unified School District								

Agency	Participated in developing the plan	Commented on the draft	Attended public meetings	Contacted for assistance	Sent a copy of the draft plan	Sent a notice of intention to adopt	Notice of Plan Availability	Not Involved / No Information
Mesa Mutual Water Co.								
Nipomo Mesa Management Area Technical Group				X	X	X		
Northern Cities Management Area Technical Group					X	X		
Rural Water Company					X	X		-
San Luis Obispo Coast Keeper								
San Luis Obispo County				X	X	X		
San Luis Obispo County Flood Control and Water Conservation District Water Resources Advisory Committee (WRAC)								
Santa Maria Valley Management Area								
SLOCOG				X	X	X		
South County Advisory Council								
[illegible]								
Woodlands Mutual Water Company					X	X		-
Woodlands Park Mutual Water Company								

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1.4 SERVICE AREA DESCRIPTION

The Nipomo Community Services District (NCSD) was formed on January 28, 1965 to provide water and sewer services as allowed under the Community Service District Law of Government Code Section 61000 et. seq. The current NCSD service area boundary encompasses approximately 3,917 acres in the Nipomo area of southern San Luis Obispo County, and serves water to an estimated population of 10,815. NCSD's service area is primarily residential land uses, with some light commercial and suburban residential comprising the Nipomo village area. Figure 1 illustrates the District service area boundary relative to the County of San Luis Obispo and in relation to the Santa Maria Groundwater Basin.

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The District is comprised of one water system with two pressure zones; one zone serves the Blacklake Specific Plan area, and the other zone serves the rest of the District's service area.

The District has a Sphere of Influence (SOI) consisting of 7 different SOI areas which cover approximately 4,339 acres. A SOI is defined by Government Code Section 56425 as "a plan for the probable physical boundary and service area of a local agency or municipality." SOIs generally represent an area adjacent to a jurisdiction where services might reasonably be expected to be needed in the next 20 years. Figure 2 illustrates the District's current service area and SOI boundaries as defined in the *July 2010 Sphere of Influence Update and Municipal Service Review for the Nipomo Community Services District* prepared by the San Luis Obispo Local Area Formation Commission (3). The SOI area designated SOI-5 is currently served water by the Golden State Water Company (GSWC). Because the District does not expect to provide retail water service to those parcels, SOI-5 was not included in any further analysis. The last Sphere of Influence Study for the Nipomo area was done in May 2004. Seven of the eight study areas presented in the 2004 study are included in the current SOI. The Woodlands Area (Study Area 6) was left out of the District's SOI since it is served by Woodlands Mutual Water Company.

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Figure 1. Nipomo Community Services District

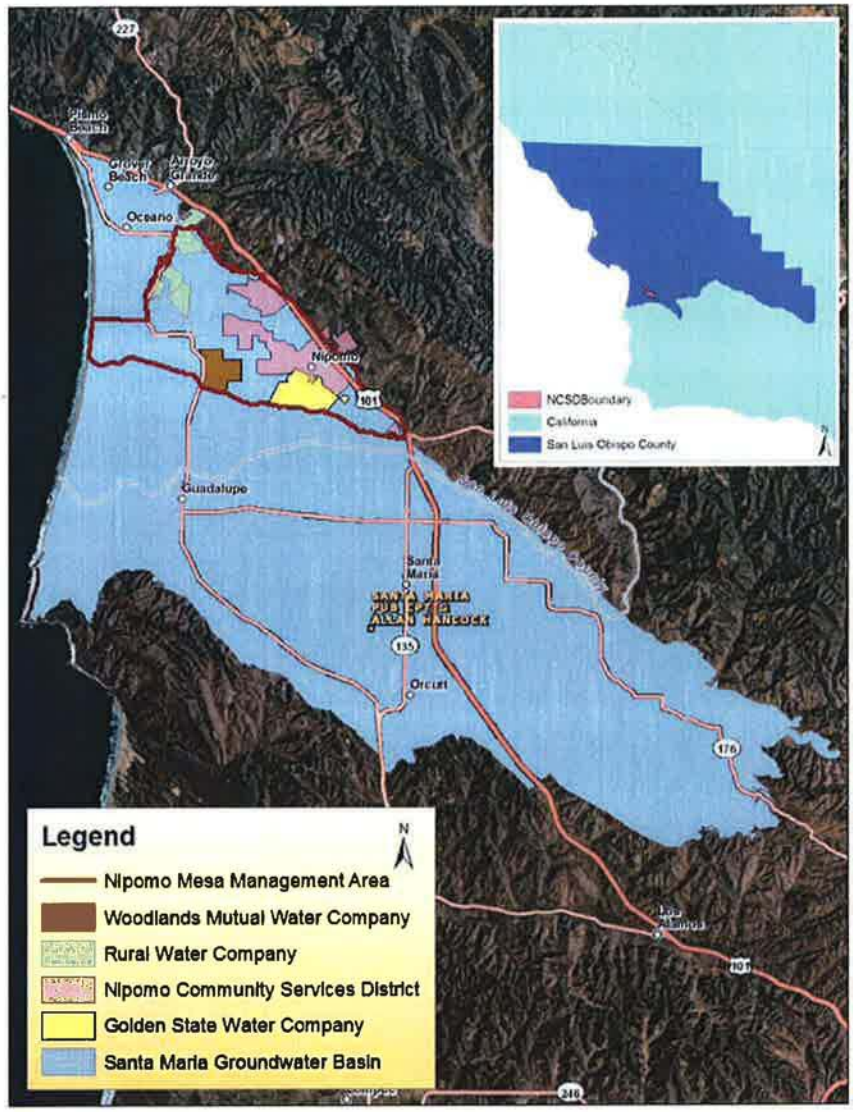

Figure 2. NCSD Service Area, Urban Reserve Line and SOI Boundaries (3)

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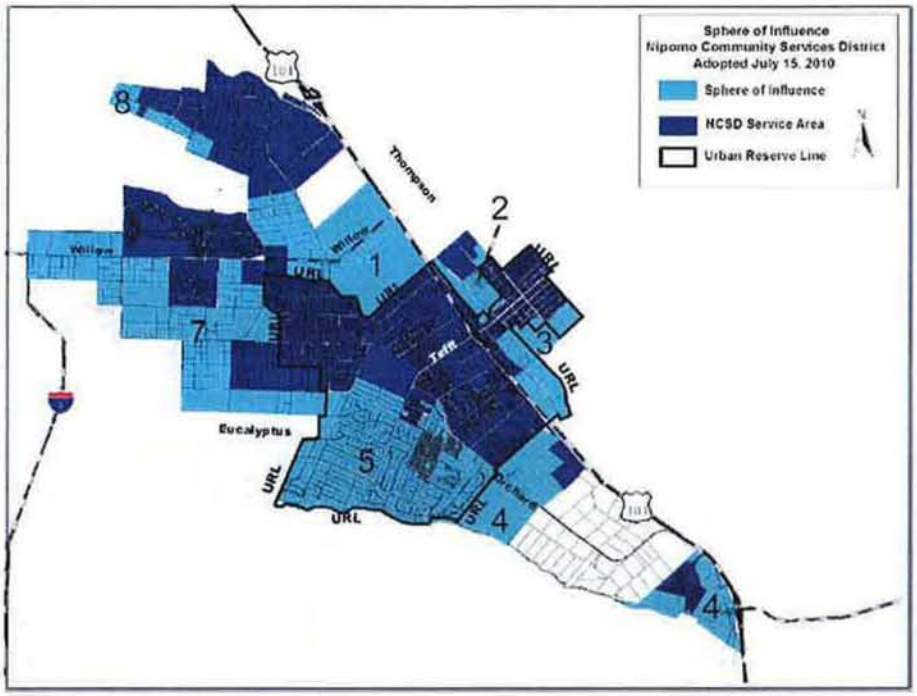

1.5 CLIMATE

The Mediterranean climate of Nipomo and the surrounding southern San Luis Obispo County area is moderate as a result of the marine influence of the nearby Pacific Ocean. The winter season is usually cool and moist and the summer months are warm and dry, with relatively consistent temperatures averaging 57.3 degrees. Mountain ranges border Nipomo on the north, northeast, and east. The orientation of Nipomo's topography and surrounding mountain ranges facing the Pacific Ocean produces consistent winds from the Pacific in an on-shore, northwest direction. During the warmer summer months, heat rises above the surrounding mountain ranges, pulling in cooler moist air from the coast. As a result, temperatures stay relatively consistent. Rainfall usually occurs between the months of November and April. Table 4 illustrates monthly and annual average Potential Evapotranspiration (ETo), precipitation and temperature data for Nipomo. The average annual Potential Evapotranspiration (Average ETo) of 52.13-in is more than three times the average annual rainfall of 16.1-in. The stations used to gather data in Table 4 are shown in Figure 3.

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Table 4. Climate

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Standard Monthly Average ETo(inches)[1]	2.21	2.5	3.8	5.08	5.7	6.19	6.43	6.09	4.87	4.09	2.89	2.28	52.13
Average Rainfall (inches)[2]	3.25	3.37	2.71	1.07	0.24	0.03	0.02	0.04	0.21	0.65	1.57	2.26	16.1
Average Temperature (Fahrenheit)[3]	51.1	52.6	53.4	55.2	57.6	60.4	63	63.5	63.3	60.7	56	51.5	57.3

[1] Data from CIMIS Station #202 Nipomo, June 27, 2006-June 23, 2010

[2] Data from SLO County Public Works Volunteer Precipitation Station-CDF Nipomo #151.1, 1959-2009

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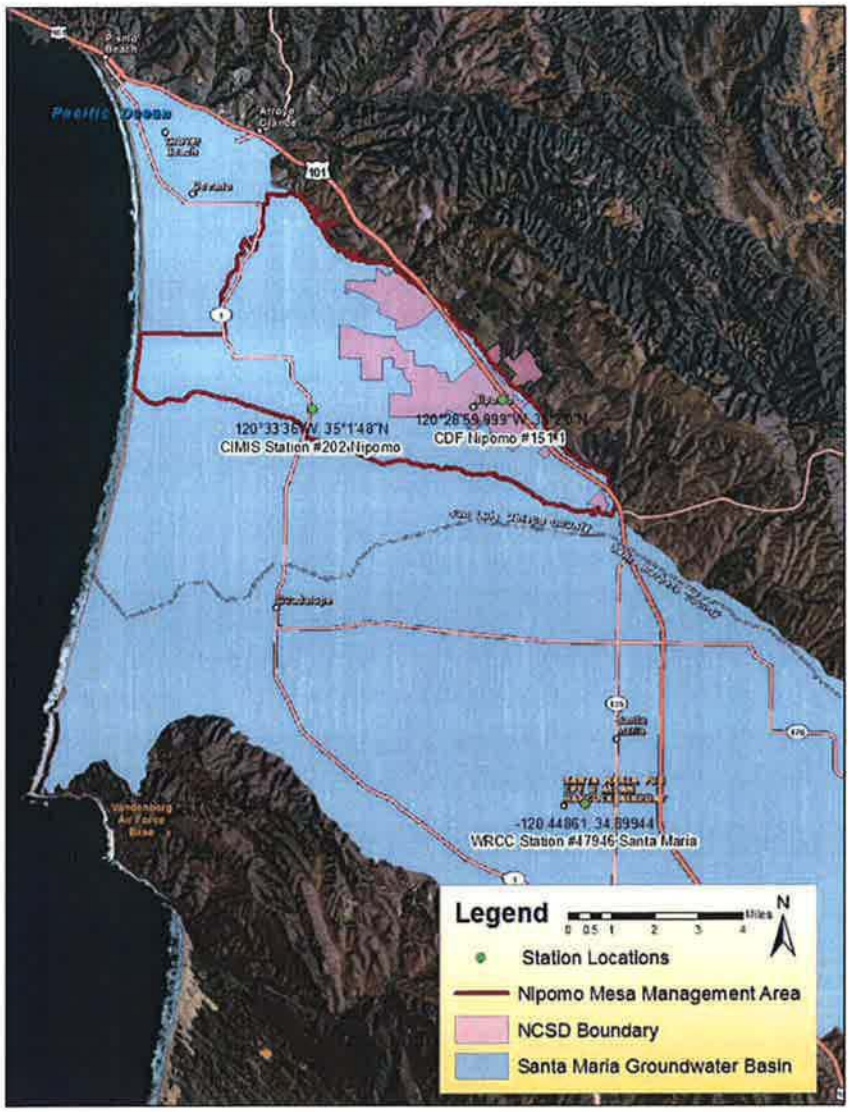
Note: Santa Maria is similar to Nipomo in elevation and distance from the Pacific Ocean and is the nearest climate station.

Figure 3. Climate Station Locations



1.6 POPULATION PROJECTIONS

San Luis Obispo County's population has grown by 40% between the years of 1980-2000, 14% between 1990-2000, and 5% between 2000-2005 (8). This growth trend is shown in comparison to the overall growth in California in Figure 4. The recent economic decline starting in 2007 has contributed to a reduced growth rate.

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From 1990 to 2009, the overall population in San Luis Obispo County grew from 217,162 to 266,971, equating to an average annual growth rate of approximately 1%. During the same period, the water customer population within NCSD's service area grew from 5,064 to 10,815, or an average annual growth rate of approximately 4%. By comparison, the unincorporated areas in the County grew at an annual rate of roughly 1.6% per year during the same period.

The water customer population of Nipomo has increased rapidly in the past twenty years (Figure 5). The current population is more than double the 1990 water customer population of 5,064. The majority of this growth stems from the need for housing in the County. As a result of this rapid increase in population, there have been lasting and potentially severe effects on the groundwater basin. This increase in usage has contributed to the County Board of Supervisors declaring a Level of Severity III for the Nipomo Mesa Water Conservation Area, which is the highest severity level in the County General Plan's Resource Management System. In 2006, the County passed Ordinance 3090, which established the Nipomo Mesa Water Conservation area and stipulated that there will be no general plan amendments without supplemental water.

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> *1. General Plan Amendments and Land Divisions. Applications for general plan amendments and land divisions in the Nipomo Mesa Water Conservation Area shall include documentation regarding estimated existing and proposed nonagricultural water demand for the land division or development that could occur with the general plan amendment. If this documentation indicates that the proposed nonagricultural water demand exceeds the demand without the requested amendment or land division, the application shall include provisions for supplemental water as follows:*
>
> *a. General Plan Amendments. Where the estimated nonagricultural water demand resulting from the amendment would exceed the existing nonagricultural demand, the application shall not be approved unless supplemental water to off-set the proposed development's estimated increase in nonagricultural demand has been specifically allocated for the exclusive use of the development resulting from the general plan amendment, and is available for delivery to the Nipomo Mesa Water Conservation Area.*
>
> *b. Land Divisions. Where the estimated nonagricultural water demand resulting from the land division would exceed the existing nonagricultural demand, a supplemental water development fee shall be paid for each dwelling unit or dwelling unit equivalent, at the time of building permit issuance, in the amount then currently imposed by county ordinance, not to exceed thirteen thousand two hundred dollars. If the development resulting from the land division is subject to payment of supplemental water development fees to an entity other than San Luis Obispo County, the amount of these other fees shall be deducted from the county fee.*

Population projections for the NCSD service area through 2030 are shown in Table 5. Appendix B provides a detailed discussion of the source data and methodologies used to develop population estimates and projections for this UWMP.

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Figure 4. County and State Population [8]

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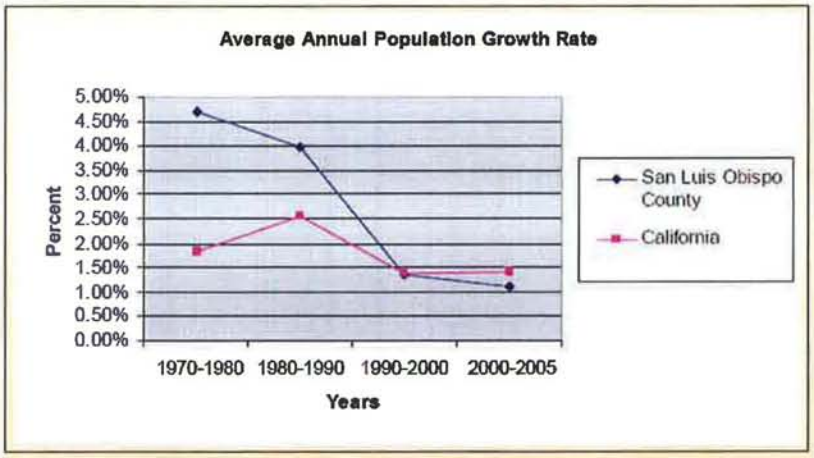
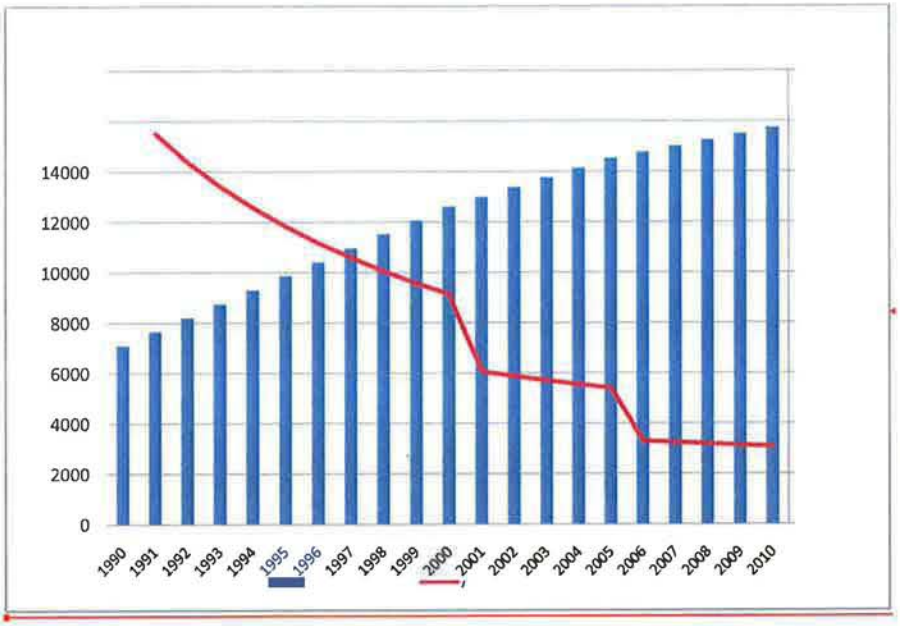
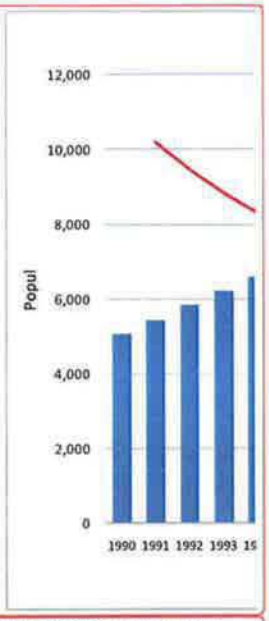


Source: US Census, 1980, 1990, 2000

Figure 5. Population and Annual Growth[1]





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[1] Data interpolated from SLOCOG data for the years 1990, 2000, 2005, and 2010. Sources: (8) (9) (10)

Table 5. Service Area Projected Population

Year	Estimated Population Served within NCSD [1]	Annual Growth Rate [2]
2010	10,815	1.8%
2015	11,651	1.5%
2020	12,367	1.2%
2025	13,127	1.2%
2030	14,003	1.3%

[1] Population based on persons per connection calculated using 2000 census data and applied to number of current and projected connections. See Appendix A for additional information regarding population estimates and projections.

[2] Growth rate based on June 2009 SLOCOG projections for the Planning Area prepared by ERA and County staff (Medium Growth Estimate).

1.7 OTHER DEMOGRAPHIC FACTORS

Aside from population, there are several demographic factors that are important to consider in the context of this UWMP:

1. The current development in Nipomo is mainly residential (Figure 6).
2. The County Housing Element identifies Nipomo as a place with realistic development capacity for low-income to above moderate income residential uses (8).
3. The County has a need for additional housing units and Nipomo is one of the unincorporated communities expected to absorb population increases.
4. Development in the Nipomo area has slowed recently as a result of economic conditions and water supply constraints. The County has declared a Level of Severity III for Nipomo's water supply, which means existing community demands exceed the capacity of that resource. According to the County Housing Element, NCSD is expected to take the lead in addressing this issue (8).

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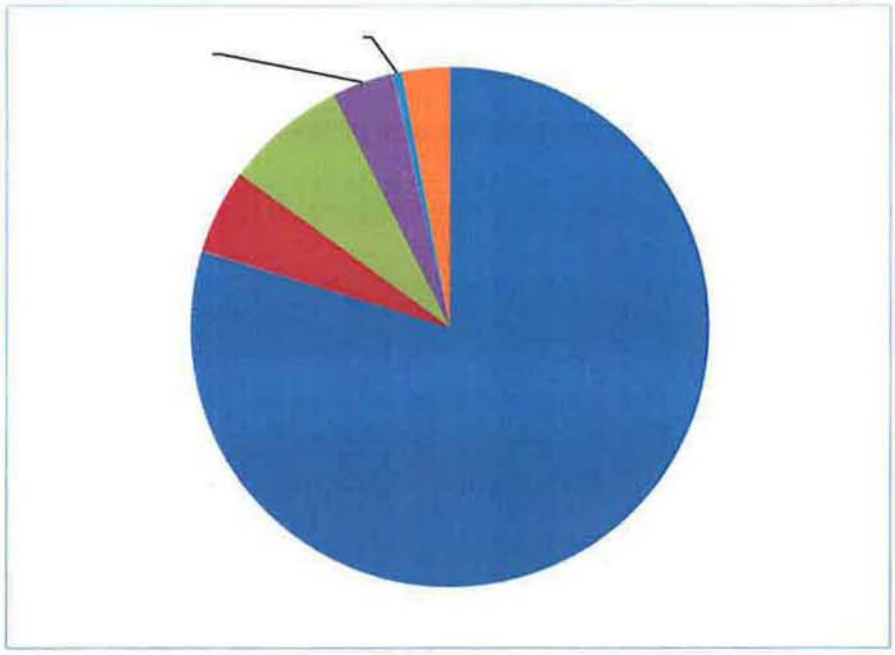
Figure 6. Water Demand by Use Sector in NCSD



2 WATER SUPPLY

The District's current supply is entirely groundwater from the Santa Maria Groundwater Basin and the Nipomo Valley. The Nipomo Valley is not considered a reliable source for future use and is not discussed in detail. The Santa Maria Groundwater Basin supply is described in more detail in the following sections.

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2.1 SANTA MARIA GROUNDWATER BASIN

Underlying NCSD is a portion of the Santa Maria Groundwater Basin (Figure 1). The Santa Maria Groundwater Basin covers about 288 square miles. It is bordered by the Santa Lucia mountain ranges to the north, the Casmalia-Solomon Hills to the south, the San Rafael Mountains to the east, and the Pacific Ocean to the west. The geologic makeup of the Santa Maria Groundwater Basin is composed of alluvial deposits including gravel, sand, silt, and clay. The estimated thickness ranges from 200 to 3,000 feet (9). This layer of alluvial deposits covers underlying consolidated rock which usually yields small quantities of water. Most of the water is contained in the alluvial sediments. Recharge of the Santa Maria Groundwater Basin occurs in four main ways: rainfall percolation, river bed recharge, subsurface inflows, and return flows.

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The Santa Maria Groundwater Basin has been the subject of ongoing litigation since 1997. NCSD signed a June 30, 2005 Stipulation in the case that was ultimately approved by the Court and incorporated into the final judgment ("Judgment") that was filed on January 25, 2008 (Appendix C). The Court has the jurisdiction to make orders to enforce the rights of the parties outlined in the judgment. The Stipulation has five primary effects:

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1. For purposes of management only, it divides the Santa Maria Valley Groundwater Basin into three separate administrative management sub-areas (the Northern Cities Management Area (NCMA), the Nipomo Mesa Management Area (NMMA), and the Santa Maria Valley Management Area (SMVMA).
2. It establishes a Technical Group (NMMA TG) that includes representatives appointed by NCSD, Southern California Water Company (SCWC)[2], ConocoPhillips, Woodlands Mutual Water Company (WMWC) and an agricultural overlying owner that signed the Stipulation.
3. It provides that a minimum of 2,500 afy of supplemental water from the City of Santa Maria be transmitted to the NMMA by NCSD with funding participation from Woodlands Mutual Water Company, Golden State Water Company, and Rural Water Company.
4. It contains specific provisions with regard to groundwater conditions, development of groundwater monitoring programs, and development of plans and programs to respond to Potentially Severe and Severe Water Shortage Conditions.

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[2] Now known as Golden State Water Company (GSWC)

5. It contains provisions that each management area prepare an annual report to summarize monitoring results, water balance data and threats to groundwater supplies. The NMMA TG recently filed its 2009 annual report with the Superior Court (10).

2.1.1 Nipomo Mesa Management Area

The Nipomo Mesa Management Area (NMMA) is an administrative management sub-area of the Santa Maria Groundwater Basin. The NMMA is bordered on the north by the Northern Cities Management Area (NCMA) and on the south by the Santa Maria Valley Management Area (SMVMA). A depiction of the NMMA and stipulating water purveyors is shown in Figure 1.

The NMMA covers approximately 33 square miles or 21,100 acres, which accounts for approximately 13 percent of the Santa Maria Groundwater Basin (10). The geology underlying the NMMA is comprised of 150 to 250 feet thick sand dune deposits overlying the Paso Robles Formation, the primary groundwater aquifer. There are no significant streams within the NMMA and the sand dune deposits are highly porous and permeable. Recharge to the aquifer only occurs through precipitation, agricultural and urban return flows, and subsurface inflows.

In 2002, DWR prepared a report entitled *Water Resources of the Arroyo Grande-Nipomo Mesa Area* (4), which evaluated the hydrologic and hydrogeologic conditions within the Santa Maria Groundwater Basin and the Nipomo Mesa Hydrogeologic Subarea (NMHSA). As shown in Figure 7, the NMHSA closely matches the boundary of the NMMA. In this report, DWR documented conditions of groundwater extraction exceeding recharge within the NMHSA dating back to the mid-1970s. DWR estimated Dependable Yield for NMHSA to be between 4,800 and 6,000 afy, and projected pumping from within the NMHSA to equal 7,800 afy in 2010 (4). DWR defined Dependable Yield as follows:

> *"... 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."*

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"...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 water supply conditions approximate average conditions." (10)¶
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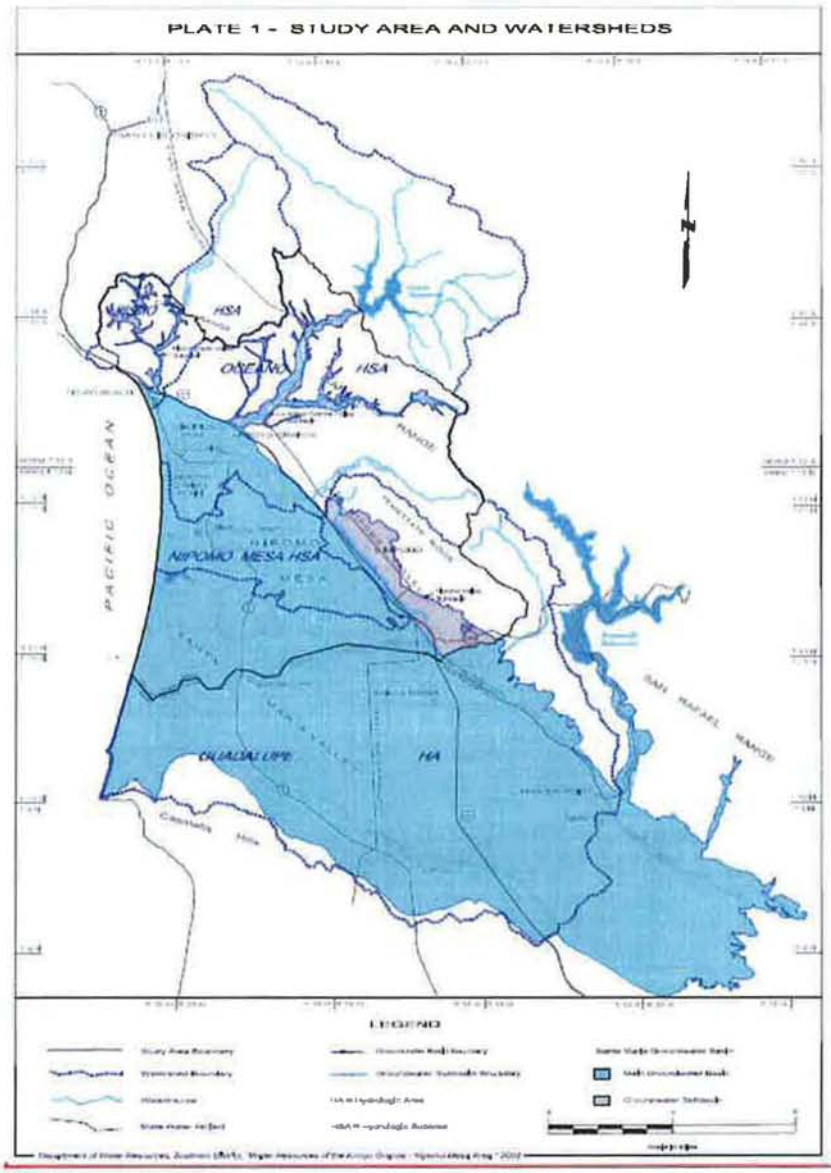
Figure 7. Nipomo Mesa Hydrogeologic Subarea (4)



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In June, 2003, San Luis Obispo County retained S.S. Papadopulos & Associates, Inc. to conduct a resources capacity study of the Nipomo Mesa area to further clarify the analysis and conclusions from the 2002 DWR report (9). The Papadopulos report confirmed that "...existing and projected future water demand at Nipomo Mesa exceeds sustainable groundwater supply..." and projected that continued mining of groundwater in storage will likely be "accompanied by reduced production capacity from many wells, increased energy costs for pumping, and increased risk of seawater intrusion of the aquifers near the coastal margin" (9).

Based in part on the findings of the 2004 Papadopulos report, the County's Water Resources Advisory Committee (WRAC) concluded that overdraft in the Nipomo Mesa area either exists currently or is imminent. Based on recommendations from the Papadopulos report, the Board of Supervisors determined a Level of Severity II for the Nipomo Mesa in November of 2004, and in April of 2007 certified the Level of Severity to a Level of Severity III. The County's Resource Management System as described in the County's *Framework for Planning* section of the General Plan defines a Level of Severity III:

> *"Level of Severity III exists when water demand equals the available resource; the amount of consumption has reached the dependable supply of the resource. A Level III may also exist if the time required to correct the problem is longer than the time available before the dependable supply is reached."*

The NMMA TG 2009 Annual Report estimated total production from the NMMA to be 12,200 afy, roughly three times the estimated Dependable Yield from the 2002 DWR report, and echoed the findings from the 2004 Papadopulos report:

> *"Although the hydrologic inventory cannot be used directly to calculate the potential imbalance in supply and demand for calendar year 2009, there are a number of direct measurements that indicate that demand exceeds the ability of the supply to replace this water pumped from the aquifers. These indicators include: 1) continuing deepening of the pumping depression in the NMMA, a portion of which is below sea level; 2) declining groundwater elevations as indicated by the Key Well Index and groundwater contours; 3) a limited component of seaward flow at the coast; 4) a flattening of the groundwater ridge between coastal and inland wells that protects inland areas from potential seawater intrusion; and 5) a threat on the north by the occurrence of seawater intrusion in the Deep Aquifer there."* (10)

In addition to those described above, the 2009 Annual Report for the NMMA includes several key findings, further reinforcing the severity of the water supply conditions in the NMMA:

- The NMMA TG recommends that the Nipomo Supplemental Water Project be implemented as soon as possible.

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- The Key Wells Index for spring 2009 is below the groundwater elevation criterion established to indicate a Potentially Severe Water Shortage Condition, triggering a voluntary response plan. [3]
- The period of analysis (1975-2009) used by the NMMA TG is roughly 11 percent "wetter" on average than the long-term record (1920-2009) indicating there is a slight bias toward overstating the amount of local water supply resulting from percolation of rainfall. The 1920-2008 record of cumulative departure from mean rainfall is shown in Figure 12.

Through the proceedings of the adjudication, the Court did not take action to restrict pumping within the NMMA, however it retains ongoing jurisdiction to impose pumping restrictions on the basis of changing conditions. The Judgment included the following statement related to the condition of the Santa Maria Groundwater Basin:

> *"The Court determines that there is a reasonable likelihood that drought and overdraft conditions will occur in the [Santa Maria Groundwater] Basin in the foreseeable future that will require the exercise of the Court's equity powers. The Court therefore retains jurisdiction to make orders enforcing the rights of the parties hereto in accordance with the terms of this judgment."*

The following figures from the 2009 NMMA annual report are included here: Figure 8. Historic Pumping (10)(9); Figure 9. Spring 2009 Groundwater Elevation Contour Map (10) (9); Figure 10. Fall 2009 Groundwater Elevation Contour Map (10) (9); Figure 11. Key Wells Index (10)(9); and Figure 12. Cumulative Departure from Mean Rainfall (10)(9).

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[3] SAIC produced a report on the 2010 spring Groundwater Index (GWI) that has not yet been reviewed by the NMMA TG. This report states that the GWI for spring 2010 is 80,000 acre feet, which is 4,000 acre feet greater than the spring 2009 GWI. The Key Well Index from the NMMA 2nd Annual Report- Calendar Year 2009 generally follows the same historical trends as the GWI (12).

Figure 8. Historic Pumping (10)

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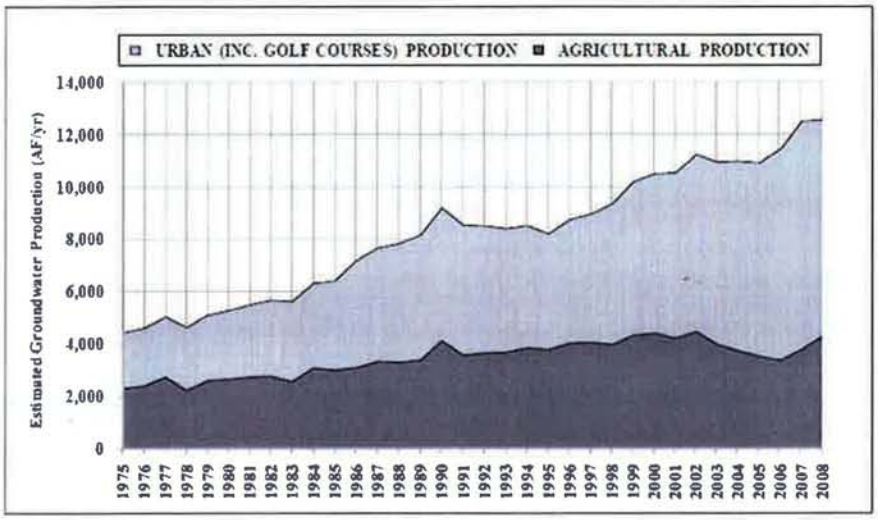

Figure 9. Spring 2009 Groundwater Elevation Contour Map (10)

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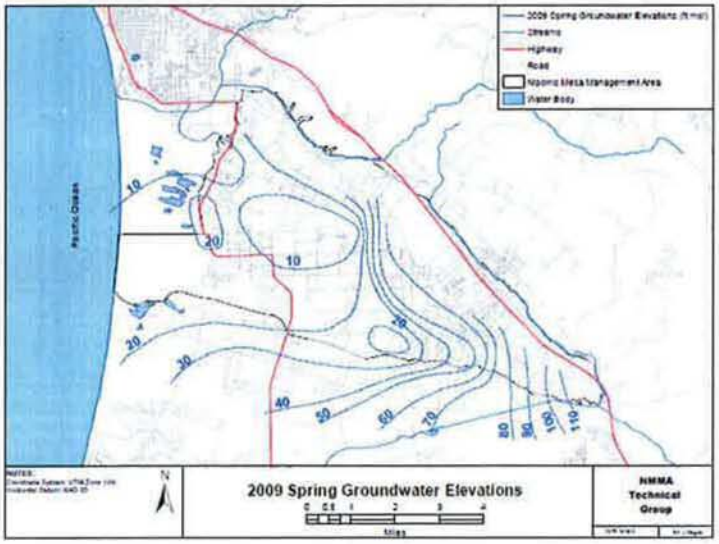

Figure 10. Fall 2009 Groundwater Elevation Contour Map (10)

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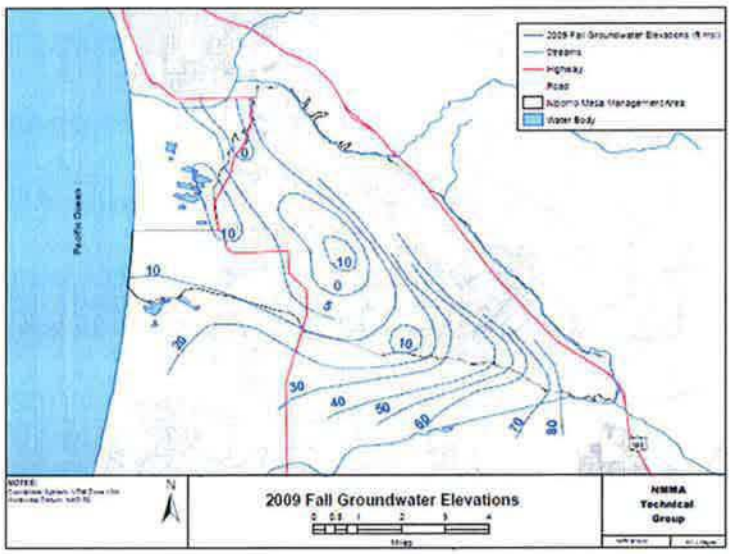

Figure 11. Key Wells Index (10)

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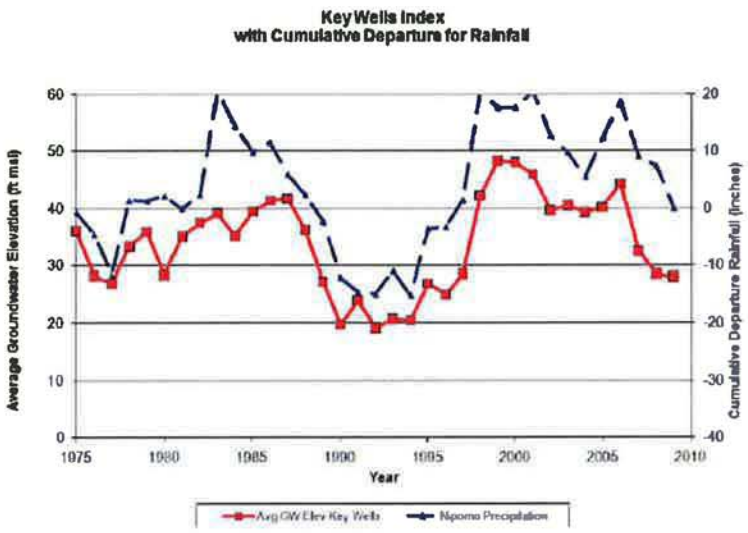

Figure 12. Cumulative Departure from Mean Rainfall (10)

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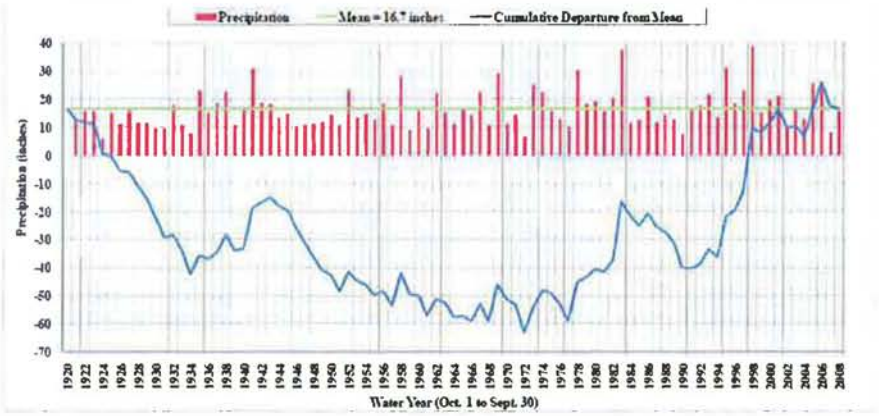

2.2 NCSD GROUNDWATER SUPPLY

NCSD receives all of its water supply from groundwater in the Santa Maria Groundwater Basin and Nipomo Valley. The District has eleven wells in the NMMA and two wells in the Nipomo Valley (Church and Savage). The Church well is on standby and the Omiya and Savage wells are out of service due to operational and water quality issues. The Cheyenne and Mandi wells would need to be completed and activated per the conditions of their California Department of Public Health operating permits to achieve their estimated pumping capacity of 100 gpm. The combined pumping capacity of the active wells is estimated to be about 3,920 gpm (13). Table 6 summarizes the District's wells, Table 7 summarizes NCSD's storage tanks, and Figure 13 illustrates the locations of the District's wells and tanks.

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Table 6. NCSD Wells

NAME	Source	Date Installed, Last Refurbished, or Last Replaced	Status	Capacity (gpm)	Well Depth (ft)
Active Wells					
BEVINGTON	NMMA	1985	Active	370	590
BLACKLAKE #3	NMMA	1984	Active	165	560
BLACKLAKE #4	NMMA	1989	Active	375	530
EUREKA	NMMA	1979	Active	890	727
KNOLLWOOD	NMMA	2001	Active	240	620
OLYMPIC	NMMA	1985	Active	130	465
SUNDALE	NMMA	1998	Active	1,000	680
VIA CONCHA	NMMA	1992	Active	750	710
Standby and Out of Service Wells					
CHURCH	Nipomo Valley	1984	Standby	145	240
CHEYENNE[1]	NMMA	1990	Not Yet Operational	100	475
MANDI[1]	NMMA	1990	Not Yet Operational	100	465
OMIYA	NMMA	1988	Out of service	0	485
SAVAGE	Nipomo Valley	1965	Out of service	124	330

[1] Cheyenne and Mandi would need to be completed and activated per the conditions of their California Department of Public Health operating permits to achieve their estimated pumping capacity of 100 gpm.

Table 7. NCSD Tanks

Name	Type	In-service Date	Capacity (gal)	Diameter (ft)
QUAD TANK #1	Steel	1966	500,000	60
QUAD TANK #2	Steel	1978	500,000	60
BLACKLAKE	Steel	1984	400,000	66
STANDPIPE	Steel	1993	1,000,000	44
QUAD TANK #3	Steel	2000	1,000,000	86
QUAD TANK #4	Steel	2003	1,000,000	86

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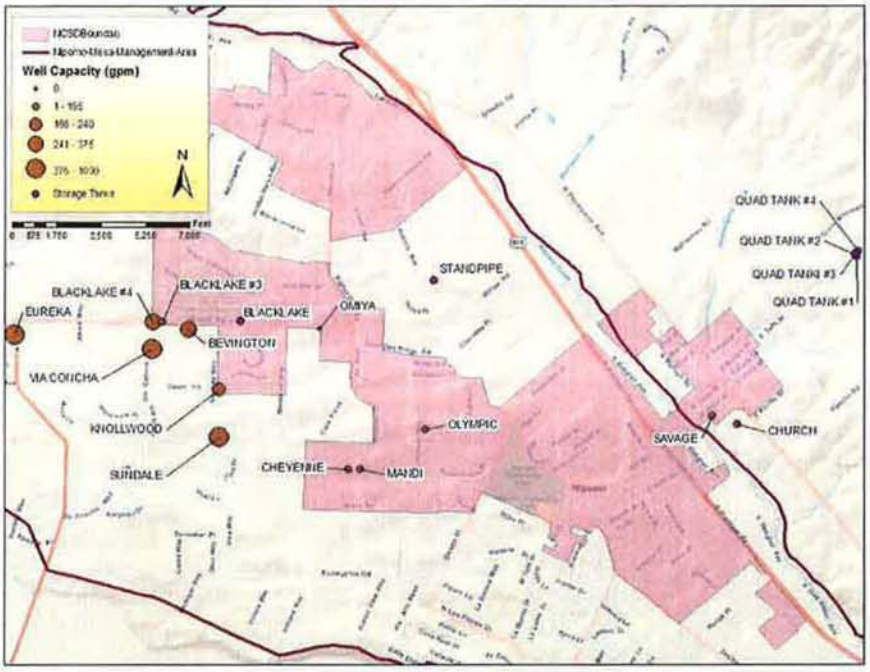
Figure 13. Wells and Storage Tanks



NCSD's right to pump groundwater from the Santa Maria Groundwater Basin, which includes three administrative management areas, including the NMMA, is considered to be an appropriative right. Other appropriators include Golden State Water Company, Rural Water Company, the cities of Santa Maria and Guadalupe, and the cities and other public water suppliers located north of the NMMA, but still in the Basin. NCSD's appropriative right allows it to produce available groundwater surplus to the needs of overlying water producers located in the Basin, all subject to the provisions of the Judgment entered in the Basin adjudication, now on appeal. Should the NMMA ever be separately adjudicated, NCSD would have the opportunity to establish prescriptive rights to pump water from the NMMA which would be of equal priority to the overlying producers' right to do so.

Pursuant to the Stipulation and subsequent Judgment, the NMMA TG can declare a Severe Water Shortage Condition, and the Court may then order subsequent mandatory pumping restrictions on overlying landowners and/or holders of appropriative rights, including NCSD.

For the purposes of this UWMP, NCSD's appropriative access to water in the NMMA is approximated by the District's maximum annual historical pumping of 2,900 afy, since this value:

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1. Represents maximum historical reasonable and beneficial use; and
2. There are currently no restrictions imposed by the Court limiting groundwater pumping.

Table 8 shows NCSD's pumping based on maximum historical pumping of water underlying the NMMA of 2,900 afy and the potential pumping capacity in the Nipomo Valley of 300 afy. It is important to note that NCSD's pumping in the NMMA is subject to change based on basin conditions and/or Court action (as described previously), and does not accurately reflect the sustainable supply. The Nipomo Valley supply is not within the NMMA and is currently not subject to the terms of the adjudication.

shows NCSD's historical production from 2005-2009. Since 2005, NCSD's pumping from the NMMA has been less than 2,900 afy.

Table 8. NCSD's Groundwater Pumping

Groundwater Source	Pumping (afy)
Santa Maria Groundwater Basin[1]	2,900
Nipomo Valley	300
Total	3,200

[1] Pumping is subject to the Santa Maria Groundwater Basin Adjudication and is allocated [illegible] in the adjudication proceedings.

Table 9. Historical Pumping

Groundwater Source	2005	2006	2007	2008	2009
Santa Maria Groundwater Basin[1] (afy)	2,794	2,727	2,839	2,755	2,698
Nipomo Valley (afy)	0	0	17	0	0
% of total water supply	100%	100%	100%	100%	100%

[1] Data from DWR reports rounded to the nearest afy

The amount of future pumping will decrease upon the implementation of a supplemental water supply source. The projected pumping in Table 10 is based upon the assumption that the Santa Maria Waterline Intertie Project (WIP) will be implemented by 2015 as envisioned in the Final Environmental Impact Report (discussed further in Section 2.3), and that groundwater pumping will not exceed the difference between total demand within the NCSD service boundary and the delivered supply from the WIP. In other words, the supplemental water will be used as a "base load" to meet demand, reducing the amount of water extracted by NCSD from the Basin.

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Table 10. Projected Groundwater Pumping

Basin Name	2010	2015	2020	2025	2030
Nipomo Mesa Management Area (NMMA)[1]	2,771	1,617	1,450	1,281	1,474
Nipomo Valley Groundwater	0	0	0	0	0
% of total water supply	100%	54.79%	52.09%	43.45%	46.93%

[1] It is assumed that the WIP will be implemented by 201... The Wholesale Water Supply Agreement provides a minimum delivery of 2,500 afy for years one through six (years 2013-2018), 2,500 afy for years 11 through 15 (years 2023-2027) and 2,500 afy for years twenty through the end of the contract (2033 and 34 yrs) (Appendix D, Wholesale Water Supply Agreement). The District will receive its 50% of the supplemental water delivered per the requirements of the Judgment. The available groundwater supply will only equal the demand not met by supplemental water.

2.3 WHOLESALE SUPPLIES

For nearly ten years, NCSD has been formally evaluating multiple alternative sources for a supplemental water supply (14) (15). Following extensive study and analysis, the District has decided to pursue a supplemental water supply project with the City of Santa Maria. The District currently has a sales agreement with the City of Santa Maria (Appendix D) and a completed Final Environmental Impact Report (FEIR) for the WIP (16). Design is progressing, and the project is expected to be brought on-line by 2013.

The District currently plans to form an assessment district to finance the capital portion of the WIP, which will be put to a land owner ballot in compliance with Proposition 218. Table 11 shows how much water is expected to be delivered by the WIP to NCSD if implemented by 2013.

Table 11. Projected Wholesale Supplies

Wholesale Supplier	2010	2015	2020	2025	2030
City of Santa Maria[1] (afy)		1,334	1,334	1,667	1,667

[1] It is assumed that the WIP will be implemented by 2013. The Wholesale Water Supply Agreement provides a minimum delivery of 2,500 afy for years one through six (years 2013-2018), 2,500 afy for years 11 through 15 (years 2023-2027) and 2,500 afy for years twenty through the end of the contract (2033 and 34 yrs) (Appendix D, Wholesale Water Supply Agreement). The District will receive its 50% of the supplemental water delivered per the requirements of the Judgment. The available groundwater supply will only equal the demand not met by supplemental water.

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The proposed delivered amounts of water from the WIP shown in Table 11 reflect the minimum deliveries as scheduled in the Wholesale Water Supply Agreement (Appendix D. Wholesale Water Supply Agreement for NCSD if the project is implemented by 2013. Phase I of the WIP could deliver up to 3,000 afy. However, the sales agreement with the City of Santa Maria provides 3 stages of minimum purchasing commitment: 1) Delivery Years 1 through 10- 2,000 afy; 2) Delivery Years 11 through 19- 2,500 afy; 3) Delivery Years 20 through end of term- 3,000 afy. The Judgment requires NCSD to purchase 66.68%, Woodlands Mutual Water Company to purchase 16.66%, Golden State Water Company to purchase 8.33%, and Rural Water Company to purchase 8.33% of the delivered water. According to the FEIR, Phase I

> *"will supply water only to customers in the current NCSD boundaries and other water purveyors in the NMMA, specifically the Woodlands Mutual Water Company, Golden State Water Company and Rural Water Company. Only in [Phase II] will water be made available to new customers in the 2004 Sphere of Influence Areas that are annexed into the NCSD boundaries". (16).*

Phase II of the WIP, if implemented, would deliver an additional 3,200 afy, bringing the total amount of supplemental water delivered to the NMMA from the WIP to 6,200 afy (16).

2.4 DESALINATED WATER

Although some previous studies concluded that desalination is not a viable water supply within the timeline of this UWMP (prior to 2030), the District has identified desalination as an option for long-term water supply, for the following reasons:

1. The costs for implementing desalination are expected to continue to decrease as technology advances and more plants are permitted and built in California.
2. Desalination represents a local source of water that has the potential to be much more reliable than alternative supplies.
3. Viability of desalination is increasing as evidenced in the California Water Plan Update 2009 by the 26 desalting plants currently operating with a total capacity of approximately 84,000 afy in California as of 2009, 33 plants in design and construction with a combined capacity of 164,700 afy, and 49 plants planned or projected with a combined capacity of 479,000 afy (17).

2.5 FUTURE WATER SUPPLY PROJECTS

The District plans to obtain supplemental water from the Santa Maria WIP as described in Section 2.3. Table 12 illustrates the future supply contract term of the WIP.

Table 12. Transfer and Exchange Opportunities

Source Transfer Agency	Transfer or Exchange	Term	Proposed Quantities
City of Santa Maria	Transfer	Effective Date through June 30, 2085	6,200 afy[1]

[1] Assumes NCSD exercises its option to obtain an additional 3,200 afy of supply via its agreement with the City of Santa Maria

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2.6 CURRENT AND PLANNED WATER SUPPLIES

Table 13 summarizes NCSD's current and planned water supplies.

Table 13. Current and Planned Water Supplies

Water Supply Sources	2010	2015	2020	2025	2030
Nipomo Mesa Management Area (NMMA)[1]	2,771	1,617	1,450	1,281	1,474
Nipomo Valley Groundwater	0	0	0	0	0
Supplemental Water from the City of Santa Maria[2]	-	1,334	1,334	1,667	1,667
Total	2,771	2,950	2,783	2,948	3,141

[1] [illegible] Wholesale Water Supply Agreement [illegible]

[2] Based on the assumption that the Waterline Intertie Project will be implemented and the delivery schedule will start by 201[illegible]

2.7 WATER SUPPLY RELIABILITY

The District has never had a single year or multiple dry years in which it did not pump 100% of its demand, regardless of regional hydrology. Additionally, the NMMA has never experienced groundwater conditions that would indicate a Severe Water Shortage Condition as defined by the NMMA TG. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions. On this basis, NCSD's supply is presented as 100% reliable for single and multiple dry year periods as summarized in Table 14.

Table 14. Water Supply Reliability

		Multiple Dry Water Years			
	Single Dry Water Year	Year 1	Year 2	Year 3	Year 4
% of Normal	100%	100%	100%	100%	100%

Although NCSD's supply is presented as 100% reliable for the purposes of this UWMP, the current pumping practices are unsustainable based on the following considerations:

1. Current pumping exceeds recharge as described in Section 2.1.1.
2. The presence of expanding groundwater depressions.

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3. Existing pumping has the potential for seawater intrusion.
4. The period of analysis (1975-2009) is roughly 11 percent "wetter" on average than the long-term record (1920-2009) indicating there is a slight bias toward overstating the amount of local water supply resulting from percolation of rainfall.
5. In addition to NCSD's imposed pumping restrictions, the NCSD pumping is subject to mandatory restriction by the Court if the NMMA TG Severe Water Shortage Condition criterion is met.

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Table 15 illustrates the base years for normal, single dry, and multiple dry years, as well as the historical sequences they are based on.

Table 15. Basis of Water Year Data

Water Year Type	Base Year(s)	Historical Sequence
Normal Water Year	2007	1975-2009
Single-Dry Water Year	2006	1975-2009
Multiple-Dry Water Years	1987-1990	1975-2009

2.7.1 Other Factors Affecting Supply Reliability

Supply from the adjudicated Basin and the proposed WIP are heavily influenced by legal, water quality, and climatic factors shown in Table 16. The NMMA TG could declare a Severe Water Shortage and the Court could set pumping limits. The WIP is subject to legal factors outlined by the Wholesale Water Supply sales agreement.

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Table 16. Factors Affecting Supply Reliability

Name of Supply	Legal	Environmental	Water Quality	Climatic
NMMA Groundwater	The Court could set annual pumping limits on the Nipomo Mesa	Reduced percolation and recharge of stormwater due to increased development	Risk of seawater intrusion	Series of low rainfall years
Nipomo Valley Groundwater	Potential legal challenge of NCSD's pumping rights	None identified	Sulfides and high TDS at some wells locations	Series of low rainfall years Unknown safe yield
Supplemental water from City of Santa Maria	Wholesale Supply Agreement has conditions for renegotiation	NCSD Waterline Intertie Project FEIR (Douglas Woods & Associates, Inc., March 2004)	Reduced water quality associated with receiving pumped groundwater during dry years	None identified

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2.7.2 Wholesale Supply Reliability

The WIP is the only wholesale supply currently planned for implementation. The 2005 Santa Maria UWMP describes its supply sources, rights, and reliability in detail. Santa Maria's sources and allotted amounts of water are shown in Table 17.

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Table 17. Wholesale Supply Reliability from the City of Santa Maria

Source	2010	2015	2020	2025	2030
Purchased Water from SWP	13,706	13,706	13,706	13,706	13,706
Groundwater	12,795	12,795	12,795	12,795	12,795
Twitchell Yield/ Commingled Groundwater	14,300	14,300	14,300	14,300	14,300
Return Flows from SWP Water	8,909	8,909	8,909	8,909	8,909
Recycled Water	0	0	0	0	0
Total	49,710	49,710	49,710	49,710	49,710

Source: [17]

The WIP sources are assumed to be 100% reliable as stated in the 2005 Santa Maria UWMP. As a result, the District plans on 100% of its supply from the WIP to be available in single dry and multiple dry years. The 2005 Santa Maria UWMP shows a 100% reliable supply in single dry and multiple dry years as shown in Table 18.

Table 18. Wholesale Normal, Single, and Multiple Dry Years Supply

Project Name	Normal Year	Single Dry Year	Multiple Dry Years		
			Year 1	Year 2	Year 3
Santa Maria Waterline Intertie Project[1]	3,000 afy	3,000 afy	3,000 afy	3,000 afy	3,000 afy
Supply Reliability	100%	100%	100%	100%	100%

[1] [illegible] Wholesale Water Supply Agreement. [illegible]

The reliability of State Water for Santa Maria is subject to the SWP annual supply:

> *"...any period on or after June 30, 2035, shall be subject to the renewal of the contract between the City and Central Coast Water Authority for SWP water. Furthermore, the terms of this Agreement shall be subject to renegotiation as described below in the event that the SWP contract or any subsequent SWP contract is not renewed or the terms of such renewal either (i) substantially impair the ability of City to continue to provide Supplemental Water in the quantities set forth in this Agreement; or (ii) the cost of continuing to provide Supplemental Water pursuant to the terms of this Agreement would create a significant financial burden on the City. In no event shall the City be required to deliver Supplemental Water following June 30, 2035 at a financial loss"* (18)

Even if Santa Maria does not receive its full allotment of SWP water, it can blend more groundwater to deliver to NCSD. However, as stated above, the terms of the Agreement are subject to renegotiation dependent on changes to Santa Maria's SWP contract. Santa Maria is investigating possible additional SWP water from San Luis Obispo County's excess SWP entitlements, which could further improve supply reliability from the SWP. Table 19 shows the other factors affecting supply reliability outlined in Santa Maria's 2005 UWMP.

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Table 19. Factors Affecting Wholesale Supply Reliability

Name of Supply	Legal	Environmental	Water Quality	Climatic
Groundwater, Santa Maria Groundwater Basin	The Court retains jurisdiction over management of the Basin and may limit pumping under Severe Water Shortage Conditions as presented in the Stipulation. The Management Area Engineer will monitor groundwater conditions and report to the Court.	N/A	None	See Legal Column in this Table.
Purchased Water from SWP and Associated Return Flows	N/A	Environmental conditions in the Delta may require reduced deliveries from the SWP	None	Reliability of imported water supply may vary based on SWP annual water supply.

Source: 2005 Santa Maria UWMP

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2.8 REGIONAL WATER SUPPLY SOLUTIONS

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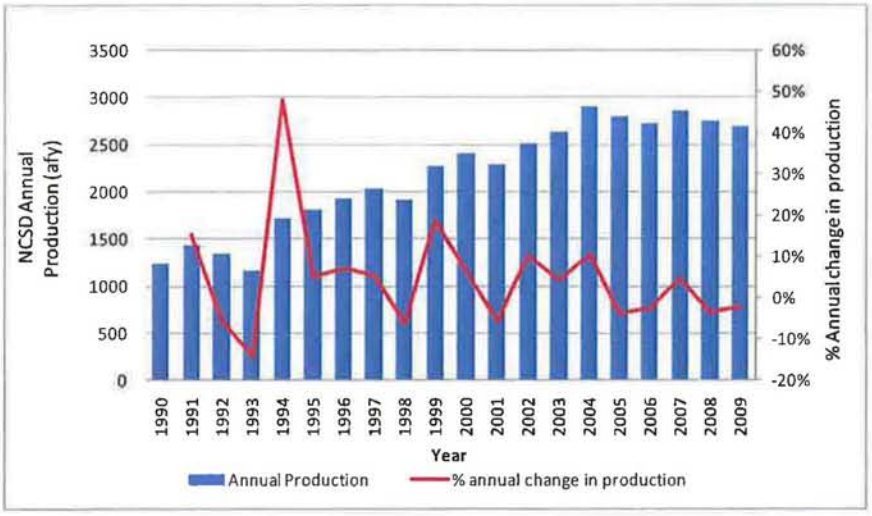
The water supply challenges facing NCSD are not unique to San Luis Obispo County, nor to the State of California. Water shortages are widespread nationwide, and represent a significant threat to economic stability (19). New sources of water supply are costly to plan, design and construct, and oftentimes present significant political, social and environmental challenges. For these reasons, DWR encourages water suppliers to develop regional solutions to improve the sustainability of local water supplies. By pursuing a coordinated regional effort, local purveyors can align their interests and pool their resources with neighboring jurisdictions to raise awareness, gain political support, raise funds and implement projects that would have otherwise been infeasible.

San Luis Obispo County and the water purveyors within the County have multiple near-term opportunities to collaborate and enhance supply and delivery systems for the benefit of all involved. First, the County and CCWA are initiating a cooperative effort to evaluate options of delivering additional State Water Project supplies to the Central Coast and optimizing utilization of the Coastal Branch of the State Water Project. Second, the County is currently preparing its Master Water Plan, which could serve as a framework for developing water supply alternatives for the NMMA and a vehicle for regional cooperation. Finally, the County may be updating its Integrated Regional Water Management Plan (IRWMP) in the next two years. These and other regional efforts can serve the District's interests, and may be the best way to advance projects that would have otherwise been infeasible, such as desalination, regional recycled water solutions and/or seawater intrusion barrier(s).

3 WATER DEMANDS

Historically, NCSD has experienced periods of rapidly increasing water demand corresponding with rapid growth and development in the Nipomo area (see Section 1.6). For example, between 1990 and 2005, the District's total production increased from 1,240 afy to 2,794 afy. This equates to an annual average growth rate of 5.6%. As a reflection of ongoing conservation efforts and a persistent economic recession, the District's production has stabilized, and actually decreased by 3% from 2,794 afy in 2005 to 2,698 afy in 2009.

Figure 14. NCSD Historical Production



3.1 DEMAND SUMMARY BY CUSTOMER TYPE

The projected demands reflect a reduction of demand between 2015 and 2020 as a result of assumed compliance with the per capita water use interim target (2015) and target water use (2020) identified in the Daily Per Capita Water Use Technical Memorandum (Appendix A. Daily Per Capita Water Use Technical Memorandum . After a period of reduced per capita water use, the population increases, creating a larger gross demand. Historical and projected demands were developed in Work Product 1 (Appendix B) and are summarized in Table 20, Table 21, and Table 22. All demands are metered within NCSD's service area.

Table 20. Past and Current Demand by Customer Type

Water Use Sectors	2005		2010	
	# of connections	Deliveries (afy)	# of connections	Deliveries (afy)
Single-Family	3,312	2,044	3,530	2,100
Multi-family	391	134	417	138
Commercial	86	99	92	101
Industrial	-	-	-	-
Institutional	6	77	6	79
Landscape	76	193	81	199
Agricultural	2	15	2	15
Total	3,873	2,562	4,128	2,632

Table 21. Projected Demand by Customer Type

Water Use Sectors	2015		2020	
	# of connections	Deliveries (afy)	# of connections	Deliveries (afy)
Single-Family	3,799	2,236	4,033	2,109
Multi-family	449	147	476	138
Commercial	99	108	105	102
Industrial	-	-	-	-
Institutional	7	85	7	80
Landscape	87	212	93	200
Agricultural	3	16	3	15
Total	4,443	2,803	4,717	2,644

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Table 22. Projected Demand by Customer Type

Water Use Sectors	2025		2030	
	# of connections	Deliveries (afy)	# of connections	Deliveries (afy)
Single-Family	4,271	2,234	4,551	2,380
Multi-family	505	147	538	156
Commercial	111	108	118	115
Industrial	-	-	-	-
Institutional	8	85	8	90
Landscape	98	211	104	225
Agricultural	3	16	3	17
Total	4,996	2,801	5,323	2,984

NCSD is taking the lead to bring supplemental water in with financial participation from GSWC, RWC, and WMWC. Table 23 shows the amount of water NCSD will sell to other agencies.

Table 23. Sales to Other Agencies (afy)[1]

Purchasing Agency	2005	2010	2015	2020	2025	2030
Golden State Water Company	7	0	167	167	208	208
Rural Water Company	0	0	167	167	208	208
Woodlands	0	0	333	333	417	417
Construction Meter Use	14	0	0	0	0	0
Total	21	0	666	666	833	833

[1] Source: NCSD Staff

Unaccounted for system losses are calculated in Work Product 1 (Appendix B), and summarized in Table 24.

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Table 24. Additional Water Uses and Losses (afy)

Water Use	2005	2010	2015	2020	2025	2030
Blacklake Recycled Water[1]	60	71	71	71	71	71
Unaccounted-for system losses[2]	211 (8%)	139 (5%)	148 (5%)	139 (5%)	147 (5%)	157 (5%)
Total	271	199	219	210	218	228

[1] Based on data from NCSD Staff
[2] Source: Appendix G

3.1.1 Low-income Housing Water Demand

Section 10631.1 of the California Water Code requires 2010 UWMPs to include projected water use for lower income single-family and multi-family residential households. Lower Income is defined by Health and Safety Code Section 50079.5 as 80% of county median income or less. The projections are meant to assist water purveyors in complying with the requirements of Government Code Section 65589.7, which requires water purveyors to "grant a priority for the provision of [water and sewer] services to proposed developments that include housing units affordable to lower income households."

Low-income households in the Nipomo area are estimated from the San Luis Obispo County Housing Element (8) on a percentage basis of single family and multi-family residential connections. Estimated low-income residential demands are summarized in Table 25. The low-income single-family and multi-family residential estimates are included in the single-family and multi-family demand projections in Table 20.

Table 25. Low-income Residential Demand Projections

Calendar Year	Low-Income SFR Connections	Low-Income SFR Consumption (AFY)	Low-Income MFR Connections	Low-Income MFR Consumption (AFY)
2005 [1]	1,225	756	145	50
2010 [2]	1,306	777	154	51
2015 [2]	1,406	827	166	54
2020 [2]	1,492	780	176	51
2025 [2]	1,580	827	187	54
2030 [2]	1,684	881	199	58

[1] Low-income = 37% of single-family/multi-family connections and demand based on the number of low-income households in Nipomo in 2000 (1,471) and the total households in 2000 (4,029) from the Housing Element (8).

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3.2 WATER CONSERVATION

The District is required by SB 7 to reduce its per capita water use by 20% from baseline by the year 2020. The legislation requires all water suppliers to achieve a reduction in per capita water use of 20% by December 31, 2020, with an interim target of 10% reduction by December 31, 2015. The legislation requires each urban water supplier to develop, and include in its UWMP, estimates of: 1) baseline daily per capita water use; 2) urban water use target; 3) interim urban water use target; and 4) compliance daily per capita water use. The UWMP must also include bases for determining the estimates, with references to supporting data.

3.2.1 Determination of Actual Reductions in Water Use

The District preceded this UWMP with a Technical Memorandum to calculate Baseline Daily Per Capita Water Use (Appendix A) and Demand Database (Appendix B) to develop 20-year demand projections. Based on the prescribed reduction targets, the demand database will be used to compare future water use with the projections to determine if the District is effectively reducing its overall water use. Table 26 shows the water use reduction baseline, targets, and current compliance water use. Figure 15 shows the data from both technical memorandums in a visual format. Based on the current compliance use in 2009, the District has reduced its water use by 8.6% from the baseline since 2005.

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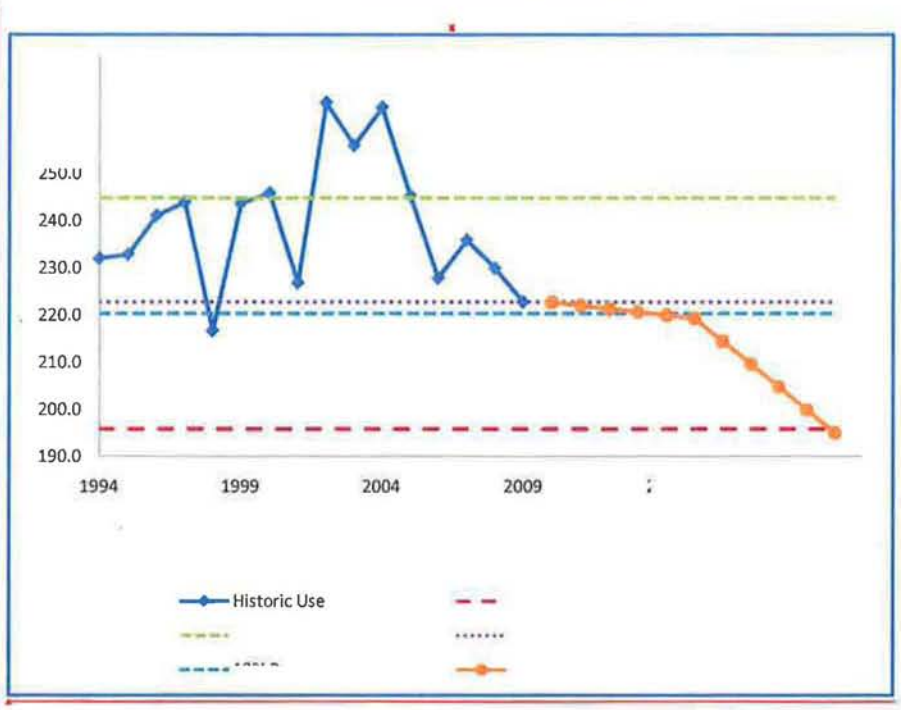
Table 26. Per Capita Water Use

Description	Water Use, gal/capita/day	Compliance Year
Baseline Gross Water Use	244.8	10 year average (1997-2006)
Compliance (2009) Water Use	222.7	2009
Interim Water Use (90%)	220.3	2015
Target Water Use (80%)	195.8	2020

Figure 15. Per Capita Water Use and Projections



To achieve the remaining 11.4% reduction needed by 2020, the District will continue to implement the measures outlined in Section 6.6. The District plans to introduce a new tiered rate structure, continue to implement new development standards, target reducing the consumption for high-use customers, and implement Best Management Practices (BMP) from the CUWCC.

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3.2.2 Tiered Rate Structure

The District currently has a two-tier rate structure. The rationale for a tiered rate structure is to target wasteful use by using allocation-based water conservation pricing. The two tiers currently used are from 0-40 HCF and 41+ HCF. The District plans to introduce a four-tiered rate structure to create a financial incentive for customers to conserve water. The benefits of conservation-based rate structures are discussed in detail in the Water Conservation Program (20). The tiered rate structure establishes volumetric rates; that is the more water a customer consumes, the more expensive the water becomes. This structure allows customers who use an amount of water within the limits of the first tier to have the lowest rates. Customers who exceed the specified limit of the first tier pay an increased cost per unit of water within the limits of the second tier. Customers using an amount of water in excess of the limits of the second tier have to pay an even higher rate per unit of water. The increased costs have to be reasonable with a rational nexus to the cost of service as required by Prop 218. With the recent implementation of Assembly Bill No. 2882 (AB 2882) to amend the California Water Code in January 2009, the District will have defensible guidance on how to establish and use allocation-based water conservation pricing. AB 2882 provides an opportunity for the District to conserve water while meeting reasonable costs through its rate structure. A good model for a tiered rate structure is the City of San Luis Obispo because of its successful history of water use reduction. The City states, "A key factor in our water conservation program is a rate structure that is based solely on use (no minimum charges) and tiered rates" (21). The District's next rate change is planned to take place in January 2011 and is subject to approval by the Board of Directors and a successful Proposition 218 process.

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3.2.3 New Development Standards

The District Ordinance No. 2009-114 Water Service Limitations is intended to provide assurance that there will be adequate groundwater to meet present and future needs of District residents consistent with County resource protection goals. The goal of the Ordinance is to achieve a 15% reduction in observed water demand. Water limitations are outlined in the Ordinance and applicants for Will-Serve Letters and Intent-to-Serve Letters must receive a registered architect or engineer's signature certifying that the application meets the requirements of the ordinance. Intent-to-Serve applications for nonresidential/commercial/industrial projects require an irrigation plan, a landscape plan, a plant material list and a hardscape plan for water features. Will-Serve Letters are only issued to nonresidential/commercial/industrial projects verified by the General Manager to be in compliance with the total water demand requirements. Other ordinances relating to development and water use reduction are discussed in Section 6.6.

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The County's Ordinance 3090 amends Title 19 of the County Code to require any applicant for a construction permit or remodel permit constituting a permit fee greater than $20,000 to install plumbing fixtures with certain criteria designed for water conservation. New construction permits will only be given when an applicant has retrofitted the plumbing fixtures of five existing structures in the Nipomo Mesa Water Conservation Area.

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3.2.4 High-use Consumer Reduction

There are a few parcels in the District, shown in , that consume much more water per year than most other parcels. The two largest users are the Nipomo Community Park and the Nipomo High School. The Park uses about 56 afy and the High School uses about 80 afy. These parcels are in need of landscape irrigation retrofits and improvements.

3.2.5 CUWCC

The District is a member of the California Urban Water Conservation Council (CUWCC) and as a result is exempt from completing a Demand Management Measures (DMM) section as well as the DMM plan evaluation (Water Code §10631 (f) & (g)) for the 2010 UWMP. The District's Best Management Practices Report and 2009 Annual Report are included in Appendix E.

The major tools that the District is using to conserve water and achieve the 20% reduction from the baseline are: using a rate structure that encourages less water use, reducing high-use customer consumption, being a member of the California Urban Water Conservation Council (CUWCC); implementing water use reduction programs (Section 6.6); and implementing water use reduction ordinances (Section 6.6).

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One of the most cost effective conservation strategies available to the NCSD lies in identifying excess irrigators and convincing them to adopt smart control technology (22). Analysis of several areas conducted by the Municipal Water District of Orange County and a study by the California Urban Water Conservation Council (CUWCC) shows using smart controllers reduces water use by 20%-28% (23) (24). The average of these percentages is 23.4%. Using this average, it is possible to make a rough calculation of the amount of possible water use reduction for the previously mentioned high use sites. The total use of the two sites is currently 136 afy. With the estimate of a possible 23.4% reduction, the total water use could be reduced to 104 afy. With a widely implemented smart controller program the District could reduce its water use significantly, helping the District to reach its 20% reduction by 2020. Further research on smart controllers and their cost effectiveness is detailed in the Water Conservation Program (20). ¶

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Figure 16. Historical Consumption by Parcel (Northern Section)

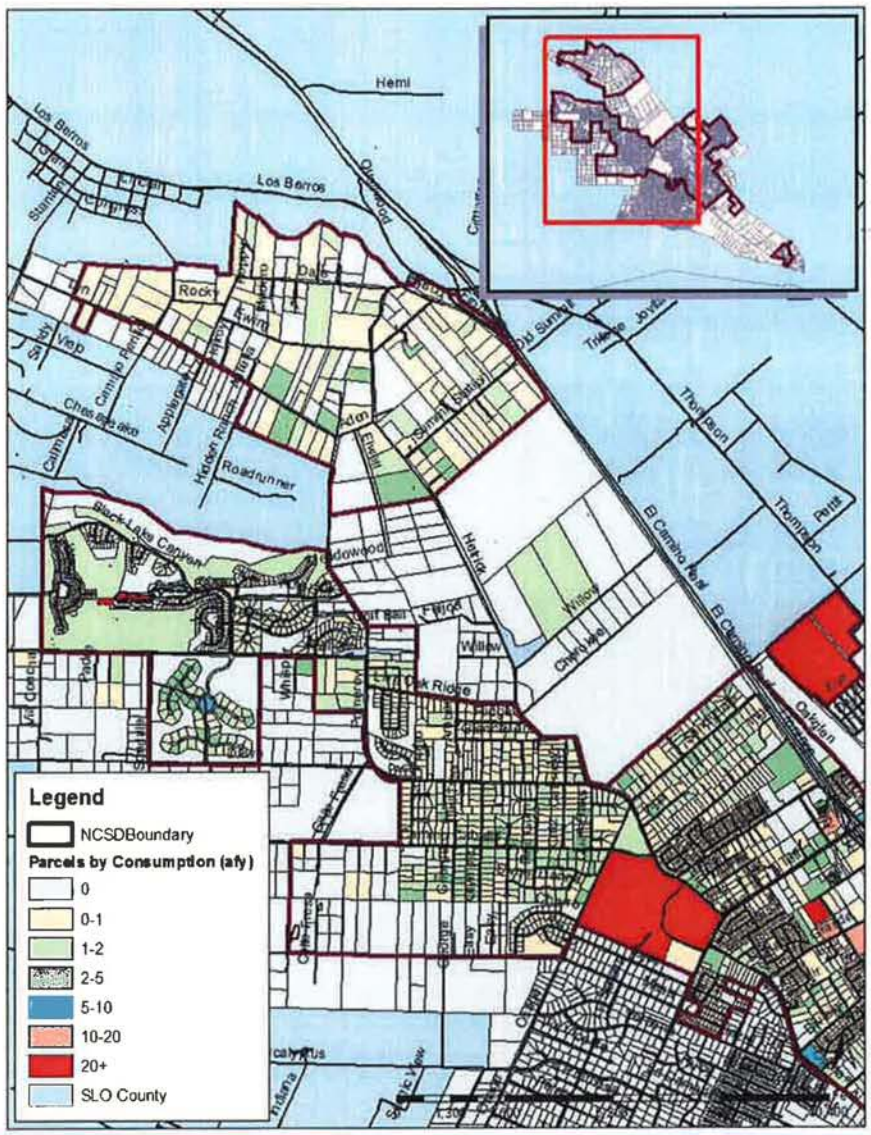

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Figure 17. Historical Consumption by Parcel (Southern Section)

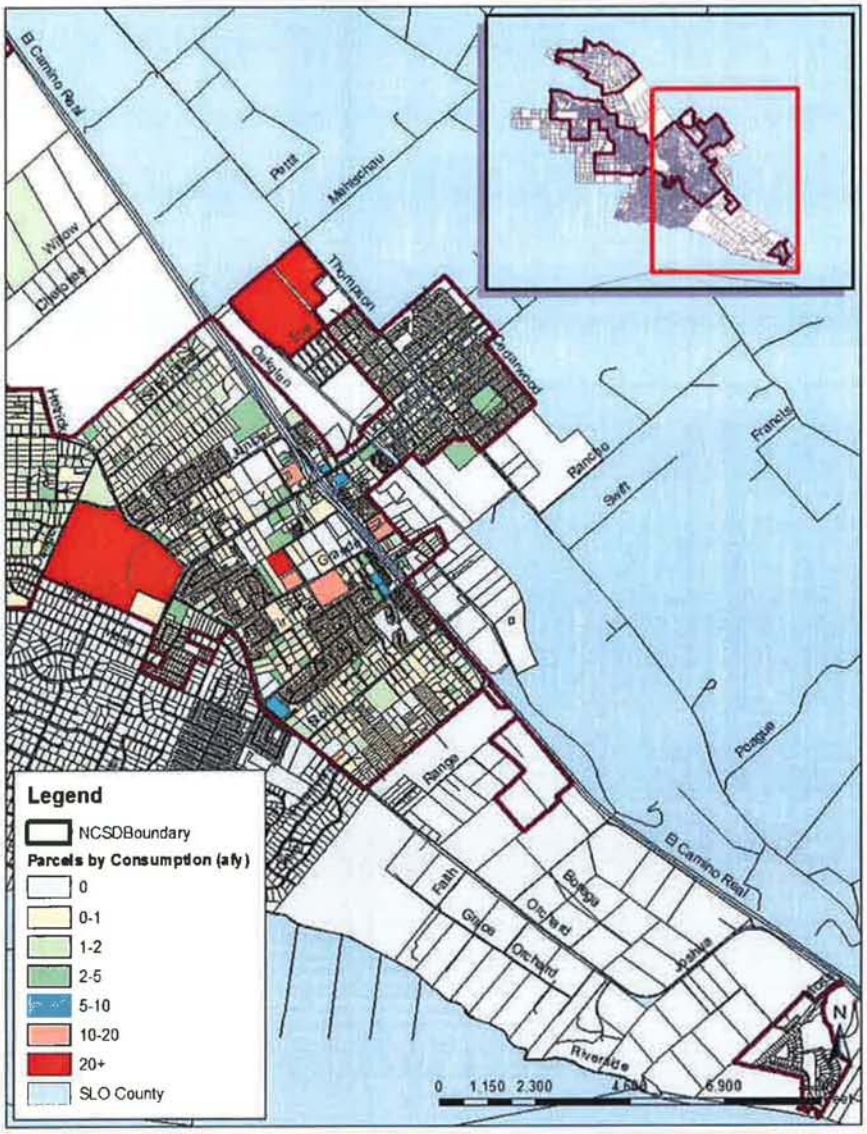

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Figure 15. Parcels by Historical Consumption¶

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4 WATER SUPPLY AND DEMAND COMPARISON

The comparison of supply and demand in the following tables portrays an equal supply-to-demand ratio every year. Water supply is described in more detail in Section 2 and water demand is described in more detail in Section 3. Figure 18 summarizes current and projected water use through 2030 considering the projected reduction in per capita demand as described in Section 3.2. The projected demands reflect a reduction of demand between 2015 and 2020 as a result of compliance with the per capita water use interim target (2015) and target water use (2020) identified in the Daily Per Capita Water Use Technical Memorandum (Appendix A. Daily Per Capita Water Use Technical Memorandum. After a period of reduced per capita water use, the population increases, creating a larger gross demand.

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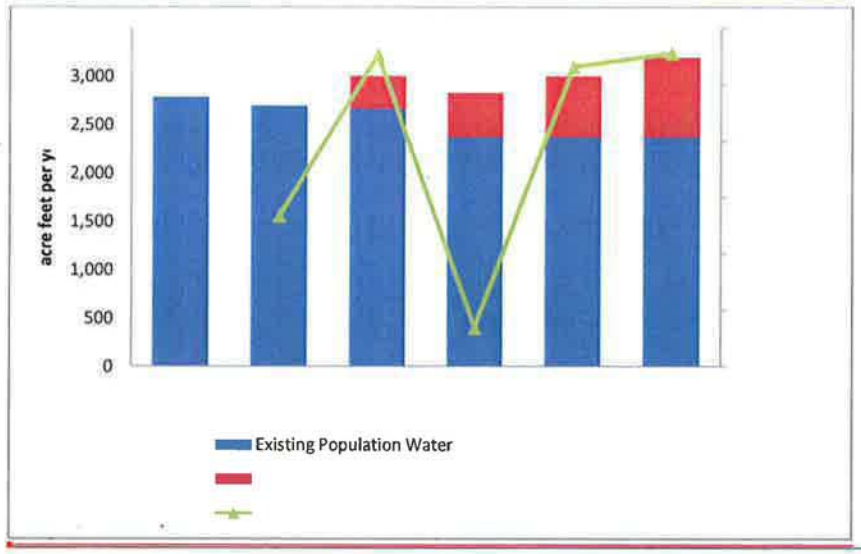
Figure 18. Current and Projected Water Use



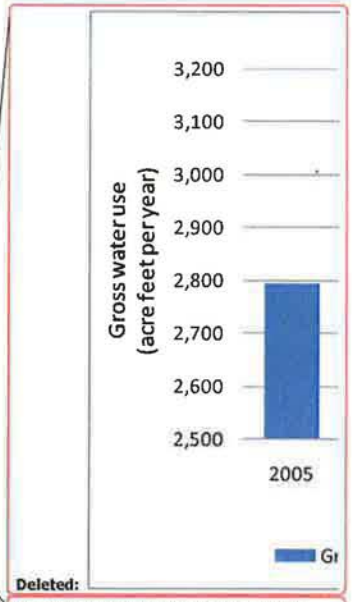


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Table 27. Projected Normal Year Water Supply (afy)

	2010	2015	2020	2025	2030
Supply (afy)	2,771	2,950	2,783	2,948	3,141
% of year 2010	100%	106%	100%	106%	113%

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Table 28. Projected Normal Year Demand (afy)

	2010	2015	2020	2025	2030
Demand	2,771	2,950	2,783	2,948	3,141
% of year 2010	100%	106%	100%	106%	113%

Table 29. Projected Normal Year Supply and Demand Comparison (afy)

	2010	2015	2020	2025	2030
Supply totals	2,771	2,950	2,783	2,948	3,141
Demand totals	2,771	2,950	2,783	2,948	3,141
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

4.1 SINGLE DRY WATER YEAR SCENARIO

Table 30 through Table 32 summarize NCSD's projected supply and demand during a single dry year.

Table 30. Projected Single Dry Year Supply (afy)

	2010	2015	2020	2025	2030
Supply	2,771	2,950	2,783	2,948	3,141
% of projected normal	100%	100%	100%	100%	100%

Table 31. Projected Single Dry Year Demand (afy)

	2010	2015	2020	2025	2030
Demand	2,771	2,950	2,783	2,948	3,141
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

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Table 32. Projected Single Dry Year Supply and Demand Comparison (afy)

	2010	2015	2020	2025	2030
Supply totals	2,771	2,950	2,783	2,948	3,141
Demand totals	2,771	2,950	2,783	2,948	3,141
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

4.2 MULTIPLE DRY WATER YEARS SCENARIO

Table 33 through Table 44 summarize NCSD's projected supply and demand during a multiple dry year periods.

Table 33. Multiple Dry Year Supply ending in 2015 (afy)

	2011	2012	2013	2014	2015
Supply[1]	2,806	2,841	2,877	2,913	2,950
% of projected normal	100%	100%	100%	100%	100%

[1] It is assumed that the WIP will be implemented by 2015

Table 34. Multiple Dry Year Demand ending in 2015 (afy)

	2011	2012	2013	2014	2015
Demand[1]	2,806	2,841	2,877	2,913	2,950
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

[1] Demand data from HDR UWMP Demand Tables

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Table 35. Multiple Dry Year Supply and Demand Comparison ending in 2015 (afy)

	2011	2012	2013	2014	2015
Supply totals	2,806	2,841	2,877	2,913	2,950
Demand totals	2,806	2,841	2,877	2,913	2,950
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Table 36. Multiple Dry Year Supply ending in 2020 (afy)

	2016	2017	2018	2019	2020
Supply[1]	2,919	2,887	2,854	2,819	2,783
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

[1] it is assumed that the WIP will be implemented by 2015 and that deliveries will be increased to 2,500 afy by 2016 and, 3,000 afy by 2020.

Table 37. Multiple Dry Year Demand ending in 2020 (afy)

	2016	2017	2018	2019	2020
Demand	2,919	2,887	2,854	2,819	2,783
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

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Table 38. Multiple Dry Year Supply and Demand Comparison ending in 2020 (afy)

	2016	2017	2018	2019	2020
Supply totals	2,919	2,887	2,854	2,819	2,783
Demand totals	2,919	2,887	2,854	2,819	2,783
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Table 39. Multiple Dry Year Supply ending in 2025 (afy)

	2021	2022	2023	2024	2025
Supply	2,815	2,848	2,881	2,914	2,948
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 40. Multiple Dry Year Demand ending in 2025 (afy)

	2021	2022	2023	2024	2025
Demand	2,815	2,848	2,881	2,914	2,948
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

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Table 41. Multiple Dry Year Supply and Demand Comparison ending in 2025 (afy)

	2021	2022	2023	2024	2025
Supply totals	2,815,	2,848,	2,881,	2,914,	2,948,
Demand totals	2,815,	2,848,	2,881,	2,914,	2,948,
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Table 42. Multiple Dry Year Supply ending in 2030 (afy)

	2026	2027	2028	2029	2030
Supply	2,986,	3,024,	3,062,	3,101,	3,141,
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

Table 43. Multiple Dry Year Demand ending in 2030 (afy)

	2026	2027	2028	2029	2030
Demand	2,986,	3,024,	3,062,	3,101,	3,141,
% of projected normal	100.0%	100.0%	100.0%	100.0%	100.0%

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Table 44. Multiple Dry Year Supply and Demand ending in 2030 (afy)

	2026	2027	2028	2029	2030
Supply totals	2,986	3,024	3,062	3,101	3,141
Demand totals	2,986	3,024	3,062	3,101	3,141
Difference	0	0	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

4.3 RESOURCE MAXIMIZATION AND IMPORT MINIMIZATION

NCSD is part of the Nipomo Mesa Management Area (NMMA) within the Santa Maria Groundwater Basin, and as such it coordinates with Northern Cities Management Area (NCMA) and Santa Maria Valley Management Area (SMVMA) to manage water resources. Each Management Area submits an annual report to the Court, which disseminates data and updates used to analyze the most prudent use of the Basin's groundwater.

The District has reduced its water use in the past five years and has plans to further reduce its water use as discussed in Section 3.2.1. The District also amended its annexation policy to require potential customers within the District's Sphere of Influence (SOI) to bring their own water.

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5 RECYCLED WATER PLAN

5.1 INTRODUCTION

The Recycled Water Plan details the District's ongoing and planned efforts for recycled water use. Recycled water as set forth in Title 22, Division 4 of the California Code of Regulations is water which, as a result of treatment of wastewater, is suitable for a direct beneficial use or a controlled use that otherwise would not occur. The UWMP Act requires NCSD to include the following information in the Recycled Water Plan:

- Summary of coordination with local water, wastewater, groundwater and planning agencies to develop a recycled water plan for the area
- Description of the wastewater collection and treatment systems in the service area, a quantification of the amount of wastewater collected and treated and methods of disposal
- Description of the quantity of treated wastewater that meets recycled water standards
- Description of current recycled water usage
- Description of potential uses of recycled water
- Projection of recycled water use
- Description of actions and incentives in place to encourage recycled water use
- A plan for optimizing recycled water use

5.2 LOCAL AGENCY COORDINATION

The District does not plan on increasing its recycled water use as discussed in section 5.5. As a result, there is very little coordination with local and regional agencies. The Regional Water Quality Control Board (RWQCB) is the entity responsible for enforcing water quality standards for the District's two treatment facilities. The District works with this regional agency closely, and the RWQCB was provided a copy of this plan.

5.3 WASTEWATER SYSTEM DESCRIPTION

NCSD operates two wastewater treatment facilities. Blacklake Wastewater Treatment Plant (Blacklake WWTP) collects and treats wastewater from the Blacklake sewer system. The Southland WWTF collects and treats wastewater from much of the District and some properties outside of the NCSD boundary. Table 45 shows the amount of wastewater collected from both facilities and the amount that is recycled. A portion of the community is not sewered and utilizes septic systems.

The Blacklake system treats wastewater through secondary treatment and recycles the wastewater in the Blacklake golf course water hazards. From the water hazards, water is extracted as necessary to irrigate the course.

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The Southland WWTF carries out secondary treatment. The treated water is disposed of in percolation ponds on-site. Since the treated wastewater percolates into the ground, it is believed that the water ultimately serves to recharge the groundwater basin. The District is planning to treat this water to recycled water standards. However, the time of implementation and amount of recycled water production is beyond the planning horizon of this UWMP. Wastewater recycling and recharge alternatives are evaluated in AECOM's Preliminary *Screening Evaluation of Southland Wastewater Treatment Facility Disposal Alternatives,* 2009 (23). The District has no formal plan to implement any further recycled wastewater programs other than the Blacklake golf course recycled water irrigation for the timeline of this UWMP, but will in the future.

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Table 45. Wastewater Collected and Recycled

Wastewater Collection and Treatment System	2005	2010	2015	2020	2025	2030
Southland Wastewater Treatment Facility Average Annual Flow (afy)[1]	640	886	1,132	1,378	1,624	1,870
Blacklake (afy)	60	71	71	71	71	71
Quantity that meets recycled water standard (afy)[2]	60	71	71	71	71	71

[1] Data [illegible] from the Southland WWTF Master Plan [illegible]

[2] [illegible] water processed through the Blacklake WWTF meets reclaimed water permit conditions.

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5.4 RECYCLED WATER SUPPLY AND USES

Blacklake WWTP is the only place where wastewater is recycled in the District. The method of disposal for the Southland WWTF is through percolation ponds. Table 46 shows the existing and projected amounts of wastewater disposed per year at Southland WWTF.

Table 46. Disposal of Wastewater (non-recycled)

Method of Disposal	Treatment Level	2010	2015	2020	2025	2030
Percolation Ponds (afy)[1]	Secondary	886	1,132	1,378	1,624	1,870

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In 2009, the District recycled about 60 afy at the Blacklake WWTP. Table 47 shows the amount of water recycled currently and the projected future amounts. There are no current plans to expand the Blacklake WWTP and as a result, the amount of water recycled in 2009 is assumed to be the amount recycled in the future, through 2030.

Table 47. Projected Future Recycled Water Use in Service Area

	Treatment Level	2010	2015	2020	2025	2030
Golf Course Irrigation (afy)[1]	Disinfected Secondary	71	71	71	71	71
[1] [illegible]						

As shown in Table 48, the projected amount of recycled water use from 2005 was higher than the actual 2010 amount.

Table 48. Recycled Water Use 2005 Projection Compared to Actual

User type	2005 Projection for 2010	2010 actual use[1]
Golf Course Irrigation (afy)	75	71
[1] [illegible]		

The actual and potential recycled water uses shown in Table 48 stay the same because the District has no specific plan yet to increase the use of recycled water.

5.5 RECYCLED WATER USE OPTIMIZATION

The alternatives for recycling or recharging the treated water from the Southland WWTF were analyzed in AECOM's *Preliminary Screening Evaluation of Southland Wastewater Treatment Facility Disposal Alternatives 2009* (23) and irrigation was evaluated as part of the *Evaluation of Supplemental Water Alternatives* study conducted by Boyle Engineering Corporation in 2007 (15). The study determined the use of recycled water as a substitute for irrigating with well water resulted in a small decrease in the net water extracted from the groundwater basin. Use of recycled water to recharge the aquifer was also studied. This alternative resulted in no increase in supply to the District. The District does plan to eventually carry out tertiary treatment.

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6 WATER SHORTAGE CONTINGENCY PLAN

6.1 INTRODUCTION

The District's involvement with the Santa Maria Groundwater Basin Litigation and the legal requirements of the Adjudication complicate the District's ability to fulfill the UWMP Act's requirements. The Adjudication mandates two stages of action (Table 50). The District does have an Ordinance No. 2009-113 which outlines different stages of action to address a water shortage. The District Water Code currently only shows one stage of action which involves voluntary conservation. Mandatory conservation stages and conditions, prohibitions, reduction methods, and penalties were suspended by the NCSD Board of Directors through Resolution No. 2008-1098 in July of 2008. The rationale for the suspension is that it is not fair for the customers of NCSD to bear mandatory measures of conservation and associated costs when the rest of the members of the NMMA are not. The suspension is subject to change and can be overturned at any time by the Board of Directors. Therefore, the measures from the suspended ordinance are shown in this UWMP to fulfill the requirements of the UWMP Act as well as to plan for future water shortages. It is assumed during a severe water shortage the resolution would most likely be amended to reinstitute the mandatory conservation measures in coordination with the NMMA TG.

6.2 STAGES OF ACTION

Currently the District only has one water conservation stage shown as Stage No. I in Table 49. The other stages are suspended as discussed previously in section 6.1.

Table 49. Water Conservation Stages

Stage No.	Water Supply Conditions	% Shortage
I.	Voluntary Conservation shall be requested annually on May 15th. Stage I will be rescinded on October 15th or at any time that prevailing conditions indicate a more restrictive stage is necessary.	up to 15%
II.[1]	Conservation shall be required when pumpage is in excess of 1.5mgd for four consecutive days or pumpage in excess of 1.9 mgd for one day. Upon termination of Stage II, Stage I becomes operative.	15%-30%
III.[1]	Conservation shall be required when pumpage is in excess of 1.9mgd for four consecutive days; or 2.1mgd for one day; or continually failing reservoir levels which do not refill above fifty percent overnight. Stage III shall be terminated when all of the conditions listed as triggering events have ceased to exist for a period of five consecutive days. Upon termination of Stage III, Stage II becomes operative.	up to 50%

[1]Stages No. II and III from Ordinance 92-65 were suspended by Resolution No. 2008-1098, Res. No 2008-1098, 1 (a-d), adopted July 23,2008, suspended ss 3.24.030(B)(C) related to stage II and Stage III mandatory conservation, 3.24.04 related to stage implementation, 3.24.060 related to violation and enforcement, and Exhibit "A" to Chapter 3.24 that establishes the policy for implementing the emergency conservation plan which derived from Ord. No. 92-65, 4§ 3, 4, 6 1992. Chapter 3.24 changes were revised in Ordinance 2009-113 by the NCSD Board of Directors and can be reinstituted upon approval by the Board.

The NMMA's conservation stages are outlined in Table 50 to show the stages of conservation required by the Stipulation in the Response Plan for Potentially Severe and Severe Water Shortage Conditions (Response Plan). Currently the NMMA is in the Potentially Severe condition and as a result voluntary conservation is required. The Response Plan for a Severe Water Shortage is discussed in Section 6.5.

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Deleted: [1]Stages No. II and III from Ordinance No. 2009-113 are currently suspended by Resolution No. 2008-1098 by the NCSD Board of Directors and can be reinstituted upon approval by the Board.

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Table 50. NMMA Water Supply Conservation Stages

Stage #		Water Supply Conditions	
		Starts	Ends
I. Potentially Severe Water Shortage	Inland Area	If the Key Well Index is lower than 31.5 ft msl for two consecutive Spring measurements	Key Well Index is above 31.5 ft msl for two consecutive Spring measurements, or Key Well Index is 36.5 ft msl or higher in any Spring measurement
	Coastal Area	If the Spring groundwater elevation drops below threshold, or chloride concentration exceeds 250mg/L	Spring groundwater elevations are above threshold, and chloride concentration at or below 250 mg/L for two consecutive Spring measurements
II. Severe Water Shortage	Inland Area	Key Well Index is less than 16.5 ft msl using Spring measurements	Key well Index is greater than 26.5 ft msl using Spring measurements
	Coastal Area	Chloride concentration exceeds 500 mg/L	Chloride concentration is less than 500 mg/L for two consecutive Spring measurements

Source: NMMA Shortage Conditions and Response Plan 3/26/2009

6.3 THREE-YEAR MINIMUM WATER SUPPLY

The UWMP Act requires the District to quantify the minimum water supply available during the next three-years (e.g., 2011-2013) based on the driest three-year historic sequence for the water supply. Based on historic pumping, the District three-year minimum supply shown in Table 51 will equal 100% of the demand for the next three-years, unless the NMMA TG declares a Severe Water Shortage followed by pumping limitations. The demand and supply for 2011-2013 includes conservation.

Table 51. Three-year Minimum Water Supply

Source	2011	2012	2013
NMMA Groundwater Supply[1]	2,806	2,841	2,877
NCSD Nipomo Valley Groundwater Supply[2]	0	0	0
Santa Maria WIP	0	0	0
Total	2,806	2,841	2,877

[1] Overdraft is intended to equal 100% of demand.

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6.4 CATASTROPHIC SUPPLY INTERRUPTION PLAN

6.4.1 Introduction

The UWMP Act requires a catastrophic supply interruption plan. This plan looks at the vulnerability of each source and distribution system to events such as wildfires, flooding, earthquakes, landslides, rockslides, other natural disasters, and unforeseen emergencies. The actions taken to address each catastrophe are presented in Table 52.

Table 52. Catastrophic Supply Interruption Actions [1]

Possible Catastrophe	Summary of Actions
Wildfire	Notification of affected customers and implementation of voluntary and mandatory rationing, only if necessary, in the affected portions of the service area.
Flooding	Isolation, as needed, to minimize the area affected by flooding damage. Large scale system impact is not expected from flooding events.
Earthquake/ Fault Rupture/ Liquefaction	Emergency response plan procedures would go into effect. These procedures would insure any damaged sections of the distribution system were isolated; customers would be notified of the need to limit use; groundwater pumping would be established using backup generators if necessary; and water supply would be supplemented using water in storage.
Landslides/ Rockslides	Given the location and nature of NCSD facilities, these events are not considered significant threats to the NCSD water production or distribution system.

[1] Adapted from the 2005 NCSD UWMP.

The District is subject to the San Luis Obispo County Emergency Operations (27), which is a County-wide emergency response plan. NCSD has an Emergency Response Plan which provides guidance for emergency situations (28). The contents of the plan include information on the chain of command to be followed at the field response, local government, operational area, regional, and state levels. Contact information for public health and safety officials, inventories of equipment suitable for emergency repairs, procedures for notifying the public, training, drills, and restoration and recovery actions are also included in the plan.

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6.4.2 Minimum Storage Requirements

According to the Water and Sewer Master Plan 2007 (13), the District is required by State Law (Title 22 Requirements) to maintain sufficient water storage capacity within its system to meet three basic needs: fire storage, emergency storage, and equalization storage.

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The fire storage is estimated to be a minimum of 540,000 gallons to fight a fire for a duration of three hours at 3,000 gpm. In the Water and Sewer Master Plan it is assumed that the minimum value required is equal for both existing and future conditions.

The emergency water storage is calculated by multiplying population by 50 gallons per day for three days. Table 53 shows the amounts of emergency water storage required from 2010-2030. The District is allowed to meet its emergency water storage requirements by having a sufficiently sized well on emergency backup power. The Sundale Well has an electric motor and standby generator. The generator is a 300kw generator on a trailer for an emergency power situation. The District also has outfitted its Via Concha and Eureka Wells with manual transfer switches and generator receptacles. The District has a pre-negotiated contract with Quinn Generators for an emergency generator source. The Sundale Well is capable of producing 3.71 MG over a three-day period, which more than satisfies the minimum emergency storage supply requirement.

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Table 53. Emergency Water Storage Requirement

Year	Population	Emergency storage requirement (gal)
2010	10,815	1,622,250
2015	11,651	1,747,650
2020	12,367	1,855,050
2025	13,127	1,969,050
2030	14,003	2,100,450

Equalization storage is required to maintain availability of demand during peak conditions when system demands are greater than that being fed directly from supply sources. The District's Water and Sewer Master Plan (13) estimates equalization storage using the formula: (1.5 – 1) times maximum day demand (gpm) times 14 hours times 60 minutes per hour. Estimates of equalization storage required through the planning horizon are shown in Table 54.

Table 54. Equalization Storage Requirement

year	demand (afy)	Average Daily Demand (MGD)	Maximum Daily Demand (MGD)	Maximum Day Demand (gpm)	Equalization Storage (MGal)
2010	2,771	2.47	4.20	2918	1.23
2015	2,937	2.62	4.45	3093	1.30
2020	2,772	2.47	4.20	2919	1.23
2025	2,936	2.62	4.45	3092	1.30
2030	3,128	2.79	4.74	3294	1.38

The amount of storage available is 3.68 MG of useful storage [13]. The amount of proposed water available from the Sundale Well on an emergency basis over the course of three days is limited to the amount of required emergency storage, which acts to offset the emergency storage requirement. Table 55 shows that there is a surplus of storage for fire, emergency, and equalization requirements.

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Table 55. Minimum Storage Requirement and Available Storage

	2010	2015	2020	2025	2030
Fire (gal)	540,000	540,000	540,000	540,000	540,000
Equalization (gal)	1,225,572	1,298,863	1,225,985	1,298,507	1,383,550
Emergency (gal)	1,622,250	1,747,650	1,855,050	1,969,050	2,100,450
Total minimum storage requirement	3,387,822	3,586,513	3,621,035	3,807,557	4,024,000
Storage available	3,680,000	3,680,000	3,680,000	3,680,000	3,680,000
Sundale Well storage credit	1,622,250	1,747,650	1,855,050	1,969,050	2,100,450
Surplus (deficit) of storage	1,914,428	1,841,137	1,914,015	1,841,493	1,756,450

6.4.3 Emergency Connections

If NCSD is not able to meet its emergency demands with its available supply, existing connections with other water purveyors could be utilized. NCSD has emergency connections with Golden State Water Company and Woodlands Mutual Water Company. However, these purveyors' distribution systems have a lower hydraulic grade than the District's distribution systems.

6.4.4 Design and Construction Standards

The District's facilities are designed and constructed to meet or exceed American Water Works Association standards in addition to local, state, and federal code. These standards limit the potential for damage to the District's facilities. The most vulnerable portions of the distribution system (e.g., pipeline crossing unstable soils, pipelines placed on bridges) have redundant interconnections. Redundant systems are also included in the District's groundwater pumping facilities.

6.5 MANDATORY PROHIBITIONS AND RESTRICTIONS

The Stipulation and Judgment incorporate the NCSD supplemental water project to import 2,500 afy of supplemental water to the NMMA with financial participation from WMWC, GSWC, and RWC. While the supplemental water is not available, the following actions are required by the Stipulation:

> *VI(A)(5). ...In the event that Potentially Severe Water Shortage Conditions or Severe Water Shortage Conditions are triggered as referenced in Paragraph VI(D) before Nipomo Supplemental Water is used in the NMMA, NCSD, [GSWC5], Woodlands and RWC agree to develop a well management plan that is acceptable to the NMMA Technical Group, and which may include such steps as imposing conservation measures, seeking sources of supplemental water to serve new customers, and declaring or obtaining approval to declare a moratorium on the granting of further intent to serve or will serve letters.6*

> *VI(D)(1b) Responses [Severe]. As a first response, subparagraphs (i) through (iii) shall be imposed concurrently upon order of the Court. The Court may also order the Stipulating Parties to implement all or some portion of the additional responses provided in subparagraph (iv) below.*

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(iii) NCSD, RWC, SCWC, and Woodlands (if applicable as provided in Paragraph VI(B)(3) above) shall implement those mandatory conservation measures prescribed by the NMMA Technical Group and approved by the Court.

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(iv) If the Court finds that Management Area conditions have deteriorated since it first found Severe Water Shortage Conditions, the Court may impose further mandatory limitations on Groundwater use by NCSD, SCWC, RWC and the Woodlands. Mandatory measures designed to reduce water consumption, such as water reductions, water restrictions, and rate increases for the purveyors, shall be considered.

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(v) During Severe Water Shortage Conditions, the Stipulating Parties may make agreements for temporary transfer of rights to pump Native Groundwater, voluntary fallowing, or the implementation of extraordinary conservation measures. Transfer of Native Groundwater must benefit the Management Area and be approved by the Court.10

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The mandatory limitations on groundwater use during a Severe Water Shortage are yet to be determined by the NMMA TG. It is assumed that the suspended ordinance shown in Table 56 would be similar to prohibitions during a Severe Water Shortage recommended by the NMMA TG or imposed by the Court.

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Table 56. Water Use Prohibitions

Stage When Prohibition Becomes Necessary	Prohibitions
Stage I	Customers of the Nipomo Community Services District are requested to voluntarily limit the amount of water used from May 15th to October 15th of each year to that amount absolutely necessary for health and business. A fifteen percent reduction in water use is requested.
Stage II[1]	In addition to prohibitions and restrictions previously listed: 1. All outdoor irrigation of vegetation shall occur only between the hours of six p.m. and nine a.m. on designated days and must utilize hand held hoses, drip irrigation or permanently installed automatic sprinkler systems; 2. The washing of automobiles, trucks, trailers, boats and other types or mobile equipment not occurring upon the immediate premises of commercial car washes and commercial service stations and not in the immediate interest of the public health, safety and welfare shall be prohibited; 3. Use of water from fire hydrants shall be limited to fire suppression and/or other activities immediately necessary to maintaining health, safety and welfare of the citizens within the boundaries of the Nipomo Community Services District.
Stage III[1]	In addition to prohibitions and restrictions previously listed: 1. Use of potable water to irrigate grass, lawns, groundcover, shrubbery, crops, vegetation, ornamental trees, etc., shall be prohibited; 2. Quantity of water used shall not exceed seventy-five gallons per day per person. (Ord. 92-65 3, 1992)

[1]Stages No. II and III from Ordinance 92-65 were suspended by Resolution No. 2008-1098. Res. No 2008-1098, 1 to 4, adopted July 23 2008, suspended §§ 3.24.030(B)(C) related to stage II and Stage III mandatory conservation, 3.24.04 related to stage implementation, 3.24.060 related to violation and enforcement, and Exhibit "A" to Chapter 3.24 that establishes the policy for implementing the emergency conservation plan which derived from Ord. No. 92-65, §§ 1, 4, 5 1992. Chapter 3.24 changes were revised in Ordinance 2009-113 by the NCSD Board of Directors and can be reinstituted upon approval by the Board.

6.6 CONSUMPTION REDUCTION METHODS

The methods to reduce consumption are outlined in Table 56 and they coincide with the stages and percent of reduction outlined in Table 49. The existing District Water Code Chapter 3.24.050 does offer some water saving devices and policies that can be used to reduce consumption:

- All customers are encouraged to install and use the following water conservation devices:
  - Drip irrigation
  - Low-flush toilets 1.28 gallons per flush or less
  - Low-flow shower heads 2.5 gallons per minute or less
  - Bathroom sink aerators 2 gallons per minute or less

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- No person, corporation or association shall be given relief on appeal unless the customer has installed all water-saving devices which are feasible.

The County Code requires a toilet-retrofit-at-time-of-sale, which is co-administered by NCSD Conservation and Public Outreach (NCSD-CPO) for Nipomo Mesa Water Conservation Area (NMWCA) (includes all of NCSD), and San Luis Obispo County Planning and Development (SLO-PD) (Title 8 Amendment).

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The District also implements various programs, tools, and educational strategies to reduce consumption. The conservation strategies described in section 3.2 are encouraged to reduce demand. The following are some programs used to help reduce water demand:

- High efficiency washer rebate program
- Water audit program
- Turf-replacement program
- Quarterly newsletter
- Outreach workshops
- Advertising
- Events and item giveaways
- Post cards, brochures mailed out to NCSD customers
- Conservation website
- Door hangers for water waste and other water issues

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6.7 PENALTIES FOR EXCESSIVE USE

The District's penalties and charges are suspended by Resolution No. 2008-1098. They are shown in Table 57.

Table 57. Penalties and Charges

Penalty or Charge[1]	Stage When Penalty Takes Effect
A copy of the notice will be left with someone at the establishment, or left in a conspicuous place, at the time of the violation observance.	First Violation
A copy of the violation notice will be sent to the address of the violator by certified mail, return receipt requested, with a letter explaining the gravity of the situation and the penalties for future violations.	Second Violation
A one gallon per minute flow restriction will be installed at the violators meter and left in place for seventy-two hours. Installation and removal charges of thirty dollars will be assessed to the account of the violator.	Third Violation
The water meter will be removed from the premises of the violator. The meter will be reinstalled after the payment of a fifty-dollar reconnection charge. (Ord. 92-65 6, 1992)	Fourth Violation

[1]These penalties and charges from Ordinance No. 2009-113 are currently suspended by Resolution No. 2008-1098 by the NCSD Board of Directors and can be reinstituted upon approval by the Board.

Currently, the Water Code states NCSD customers shall not waste water. The Policy is specified below:

3.24.020 - Prohibition of certain uses.

No customer shall waste water. As used herein the term "waste water" means:

1. *Allow potable water to escape from breaks within the customer's plumbing system for more than four hours after the customer is notified or discovers the break.*
2. *Use of potable water for sewer system maintenance or fire protection training without prior approval by the District.*

There are no penalties or charges to enforce this policy.

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Use of potable water for sewer system maintenance or fire protection training without prior approval by the district.¶

6.8 REVENUE AND EXPENDITURE ANALYSIS

The percent reductions outlined in Table 49 are used to show hypothetical percent reductions of 15%, 30%, and 50% in Table 58. NCSD's Operating and Non-Operating Budgets Fiscal Year 2009-2010 (29) line item data was used to calculate the revenue and expenditure analysis in Table 58. The sub categories of the 'Revenues' category and the 'Expenditures' category shown in Table 58 are the only categories in the budget which would, presumably, change with a water use reduction. Therefore, the sub categories are the only categories calculated to have a roughly proportional change in monetary value with the percent change of water use. Those select changes are then combined in the 'total' category. That 'total' is combined with all of the categories from the Budget in the' '09-'10 total' category to reflect the overall difference. The expenditures and revenues are summed to create the 'surplus (deficit)'. The 'surplus (deficit)' is then combined with the 'estimated account balance 7/1/09' to produce the 'estimated account balance 7/1/10'. The resulting estimated balance shows there are more than enough funds to cover a 15%-50% reduction of water use. This projection is very rough and does not account for multiple details that are included in a budget calculation. It is meant to show that extreme reduction of water use would have a substantial effect on the budget, especially if spanned over multiple years.

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Table 58. Revenue and Expenditure Projections

Revenues	Total '09-'10 [1]	15% reduction	30% reduction	50% reduction
water- usage charges	$3,039,000	$2,583,150	$2,127,300	$1,519,500
sewer revenues	$1,872,000	$1,591,200	$1,310,400	$936,000
total (only categories above)	$4,911,000	$4,174,350	$3,437,700	$2,455,500
'09-'10 total revenues	$7,656,841	$6,920,191	$6,183,541	$5,201,341
Expenditures				
lab tests and sampling	$78,000	$89,700	$101,400	$117,000
outside services	$40,020	$46,023	$52,026	$60,030
water conservation/ recycling program	$125,500	$144,325	$163,150	$188,250
total (only categories above)	$243,520	$280,048	$316,576	$365,280
'09-'10 total expenditure	$6,754,903	$6,791,431	$6,827,959	$6,876,663
Surplus (deficit)	$901,938	$128,760	($644,418)	($1,675,322)
Estimated funds available				
estimated account balance 7/1/09	$9,700,730	$9,700,730	$9,700,730	$9,700,730
Surplus (deficit)	$901,938	$128,760	($644,418)	($1,675,322)
estimated account balance 7/1/10	$10,602,668	$9,829,490	$9,056,312	$8,025,408

[1] Data adapted from NCSD's Operating and Non-Operating Budgets Fiscal Year 2009-2010[SW1]

6.9 DRAFT ORDINANCE

<Insert copy of Draft Water Shortage Contingency Plan ordinance here.>

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7 ADOPTION AND IMPLEMENTATION OF UWMP

The Final 2010 UWMP was formally adopted by the Board of Directors for NCSD on _____, 2010.

7.1 ADOPTION RESOLUTION

A copy of the Adoption Resolution is included here:

<Insert Adoption Resolution Here>

7.2 IMPLEMENTATION OF THE RECYCLED WATER PLAN

The Recycled Water Plan included in this UWMP is being implemented as planned. The current use of recycled water is the furthest extent to which the District will pursue recycled water uses at this time. The District conducted an Evaluation of Southland WWTF Disposal Alternatives and concluded it was not economically feasible to increase the use of recycled water at this time [23].

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7.3 IMPLEMENTATION OF THE CONSERVATION BEST MANAGEMENT PRACTICES

The Best Management Practices Report (BMP Report) attached in Appendix E is being implemented as planned. Because the District is a member of the CUWCC it does not need to include a Demand Management Measures section in this UWMP. The DMMs listed in the 2005 UWMP are being implemented as planned or exceed the planned implementation. The BMP covers all of the existing programs and policies implemented by the District and their implementation program to fulfill the requirements of the BMP. <THIS SECTION TO BE ELABORATED UPON THE COMPLETION OF THE BMP ACTIVITY REPORT BY THE DISTRICT'S WATER CONSERVATION COORDINATOR >

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APPENDIX A. DAILY PER CAPITA WATER USE TECHNICAL MEMORANDUM

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APPENDIX B. DEMAND DATABASE TECHNICAL MEMORANDUM

APPENDIX C. SANTA MARIA GROUNDWATER JUDGMENT

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APPENDIX D. WHOLESALE WATER SUPPLY AGREEMENT

APPENDIX E. CUWCC BMP AND 2009 ANNUAL REPORT

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APPENDIX F. DWR REVIEW SHEETS CHECKLIST