CITY OF LOMPOC

Groundwater Management Plan

NOVEMBER 2013

Prepared for
CITY OF LOMPOC

Prepared by
WEST YOST ASSOCIATES

Groundwater Management Plan

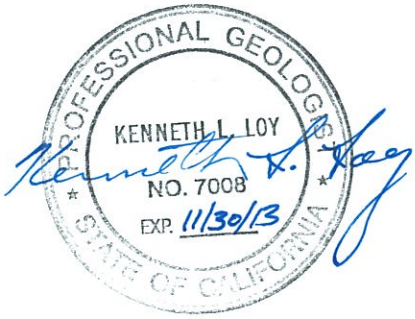
Prepared for

City of Lompoc

November 2013

WEST YOST ASSOCIATES
Consulting Engineers

473-00-11-02



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List of Acronyms and Initialisms

acre-ft/yr	acre-feet per year
ANA	Above Narrows Account
BMOs	Basin Management Objectives
BNA	Below Narrows Account
BO	Biological Opinion
CEQA	California Environmental Quality Act
CASGEM	California Statewide Groundwater Elevation Monitoring
CCRB	Cachuma Conservation Release Board
cfs	cubic feet per second
CUWA	California Urban Water Agencies
CWC	California Water Code
City	City of Lompoc
DMMs	Demand Management Measures
DPH	Department of Public Health
DWR	Department of Water Resources
DWSAP	Drinking Water Source Assessment and Protection Program
EIR	Environmental Impact Report
FMP	Fish Management Plan
ESA	Endangered Species Act
gpcd	gallons per capita per day
Groundwater Basin Designation 3-15	Santa Ynez River Valley Groundwater Basin
GWMP	Groundwater Management Plan

HCI	Hydrologic Consultants, Inc.
Improvement District No. 1	Santa Ynez River Conservation District Improvement District No. 1
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Water Management Plan
LRWRP	Lompoc Regional Wastewater Reclamation Plant
MHCSD	Mission Hills Community Services District
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
QA/QC	Quality Assurance and Quality Control
SARP	Sectorial Applications Research Program
SBCWA	Santa Barbara County Water Agency
SBx7-6	Senate Bill 6
SWP	State Water Project
State Board	State Water Resources Control Board
SYRWCD	Santa Ynez River Water Conservation District
TDS	Total Dissolved Solids
UWMP	Urban Water Management Plan
USGS	United States Geological Survey
USBR	U.S. Bureau of Reclamation
VVCSD	Vandenberg Village Community Services District

The City of Lompoc (City) prepared this Groundwater Management Plan (GWMP) pursuant to California Water Code (CWC) Section 10750 *et. seq*. for the portions of its water service area overlying the Lompoc Groundwater Basin. The City recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Adoption and implementation of this GWMP supports this goal and helps the City meet requirements in the CWC.

The City adopted Resolution No. 5751(11) to prepare this GWMP after convening a public hearing on December 6, 2011, pursuant to Sections 10750 et. seq. of the CWC. The City adopted Resolution No. 5874 (13) to adopt this GWMP after convening a second public meeting on October 1, 2013. Appendix A provides documentation of public notification and outreach. Appendix B provides the adopted resolutions to prepare and adopt the GWMP.

It is the City's policy to encourage public participation when adopting plans such as this GWMP, and the City sought public input while developing this GWMP. The draft GWMP was available for public review prior to the scheduled public hearings to consider adoption of the GWMP. During the review period, the draft GWMP was available at the City's offices during normal business hours, posted on the City's web page, made available for distribution to interested parties and made available at the Lompoc Public Library. Notices for the public hearings were placed in the City newspaper (the Lompoc Record).

The City conducted a public meeting on November 13, 2012 with groundwater basin stakeholders to discuss preliminary draft Basin Management Objectives (BMOs). BMOs support the City's overall groundwater management goal by identifying and prioritizing the most important issues in meeting water resource needs. This GWMP incorporates the BMOs presented and discussed at the November 13, 2012 stakeholder meeting. The City convened a second public meeting to discuss the draft GWMP on July 3, 2013. Comments on the draft GWMP were accepted from stakeholders and members of the public and were incorporated in the GWMP. The City also presented and discussed the GWMP at the August 12, 2013 and September 9, 2013 meetings of the City's Utility Commission. The Utility Commission will serve as the advisory committee for the GWMP. Appendix A provides documentation of the public meetings.

This GWMP was developed in coordination with local agencies and other basin stakeholders. This plan will be administered under the direction of the City Utilities Director with consideration of the recommendations of an advisory committee made up of members of the City's Utility Commission.

ES.1 AUTHORITY

The CWC provides the City's authority to adopt a GWMP. The City overlies a portion of the Santa Ynez River Valley Groundwater Basin (California Department of Water Resources [DWR] Subbasin 3-15) and provides water service within its service area. The City is a local agency pursuant to CWC Section 10752 (g). The City is authorized to adopt this GWMP as provided in CWC Section 10753 (a).

ES.2 PURPOSE OF THE GROUNDWATER MANAGEMENT PLAN

The City relies on groundwater to meet the water demands of its customers. The purposes of this GWMP are to:

1. State the City's overall groundwater management goal;
2. Put forth BMOs applicable to the City service area;
3. Establish baseline conditions for the portion of the basin that is subject to the GWMP;
4. Provide a mechanism for the continued collection of groundwater and aquifer information;
5. Establish the framework for assessing potential changes with respect to baseline conditions;
6. Establish management actions, including provisions for updating the plan as conditions change and new information becomes available;
7. Maintain consistency with the CWC and help ensure funding eligibility; and
8. Fulfill the CWC requirement that a GWMP must be attached to the City's Urban Water Management Plan (UWMP).

The City is located along California's central coast near the mouth of the Santa Ynez River approximately 130 miles northwest of Los Angeles (Figure ES-1). The City overlies the Lompoc Plain portion of the Santa Ynez River Valley Groundwater Basin (DWR Groundwater Basin Designation 3-15). The City, Mission Hills Community Services District (MHCSD), and Vandenberg Village Community Services District (VVCSD) are located in the western Santa Ynez River Valley Groundwater Basin. This area is comprised of the Lompoc Plain, Lompoc Upland, and Lompoc Terrace Subbasins, which collectively are referred to in this GWMP as the Lompoc Groundwater Basin.

Figure ES-1 also shows the watershed of the Santa Ynez River. Percolation from the Santa Ynez River channel is the most important source of recharge for the Lompoc Groundwater Basin.

Figure ES-2 shows the City water service area. The water service area is defined by the City limits, not including the Lompoc Federal Correctional Complex. Additionally, the service area includes homes located one mile south along Miguelito Canyon Road, the Lompoc Cemetery District, located at the southeastern edge of the service area, and the City's River Park. River Park includes 45 developed acres adjacent to the Santa Ynez River on the east edge of the water service area. The City water service area extends to the north of the Santa Ynez River to include the La Purisima Highlands neighborhood, Allen Hancock College and Ken Adams Park (City of Lompoc, 2008).

Other groundwater users in the basin include MHCSD, VVCSD, and agricultural producers, including the Lompoc Federal Correctional Complex farm.

ES.3 OVERALL GROUNDWATER MANAGEMENT GOAL

The City's overall groundwater management goal is to work cooperatively with basin stakeholders and the public to maintain a sustainable, reliable, high-quality groundwater supply for beneficial use in the City service area and surrounding areas.

ES.4 BASIN MANAGEMENT OBJECTIVES

BMOs have been developed to support the City's overall groundwater management goal. BMOs have been established to address the following five areas:

BMO-01 – Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users

BMO-02 – Maintain groundwater elevations that result in a net benefit to basin groundwater users

BMO-03 – Minimize the risk of future significant impact due to inelastic land subsidence

BMO-04 – Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping

BMO-05 – Protect against the risk of impacts to groundwater levels and groundwater quality caused by changes in surface water flows or surface water quality

BMO-01 – Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users. Groundwater quality within the City's service area is affected by both the groundwater recharge that occurs from the Santa Ynez River and impacts from point and nonpoint contaminant sources.

The principal source of recharge to the Lompoc Groundwater Basin is recharge from the Santa Ynez River stream flow. The river enters the Lompoc Valley at the Narrows, and the stream flow recharges the Lompoc Plain from that point downstream. However, recharge occurs mostly within the reach from the Narrows to V Street. The Santa Ynez River stream flow contains high dissolved solids, and the recharge from stream flow is a significant source of salinity within the Lompoc Groundwater Basin. While the stream flow salinity occurs mostly from natural processes within the Santa Ynez River watershed, the stream flow salinity at the Narrows is affected by the operation of Cachuma Reservoir. That operation is regulated by State Water Resources Control Board (State Board) Order 89-18, the Cachuma Project Settlement Agreement, and the National Marine Fisheries Service (NMFS) Biological Opinion (BO). The historical effect of the State Board Order and the Settlement Agreement has been to reduce recharge salinity and to improve groundwater quality. There is, however, a level of uncertainty regarding future Cachuma Project operations resulting from possible revisions to State Board Order 89-18 and the BO. Stream flow salinity and the corresponding recharge salinity can be impacted by upstream water-use and wastewater-disposal practices within the Santa Ynez River watershed area between Bradbury Dam and the Narrows.

Groundwater within the City's service area can also be affected by nonpoint sources of nitrate and salinity, and localized point sources of anthropogenic contaminants. Potential nonpoint sources include fertilizers and other chemicals used in landscape maintenance, salinity in irrigation water, and leakage from sanitary sewers. Point sources include chemical releases from underground storage tanks and other sources.

The City supports three water-quality monitoring programs. Firstly, the City cooperates with other local agencies in monitoring Santa Ynez River stream flow and water quality at multiple locations, where the United States Geological Survey (USGS) collects information. Secondly, the City cooperates with other local agencies in monitoring groundwater quality at selected wells within the Lompoc Groundwater Basin, where the USGS collects or compiles such data within the Lompoc Plain and Uplands. Thirdly, the City collects and analyzes groundwater-quality samples from its active production wells to comply with applicable standards in Title 22 of the CWC. The Department of Public Health (DPH) Title 22 program specifies the constituents to be tested, the detection limits for these constituents and reporting requirements.

The City's objectives with respect to groundwater quality are to: (1) promote operation of Cachuma Reservoir that produces the optimal stream flow and salinity at the Narrows with respect to groundwater recharge from the Santa Ynez River; (2) promote water-use and wastewater-disposal practices throughout the Santa Ynez River watershed that protect Santa Ynez River stream flow quality at the Narrows; and (3) encourage landscaping practices that minimize discharges of nutrients and other chemicals to the underlying groundwater system. These objectives are to be achieved by: (1) encouraging best management practices; (2) being an active stakeholder regarding water-resources issues throughout the Santa Ynez River watershed; (3) maintaining stream flow and groundwater monitoring within the Lompoc Groundwater Basin; (4) cooperating with other agencies in maintaining stream flow monitoring throughout the Santa Ynez River watershed; (5) periodically analyzing the compiled data for adverse trends; and (6) using the compiled data to optimize the City's groundwater pumping with respect to the water-supply salinity.

The City has relatively little control over groundwater salinity, because groundwater salinity is dependent on the Santa Ynez River stream flow salinity at the Narrows. Under the implementation of State Board Order 89-18, the Cachuma Project Settlement Agreement, and the NMFS BO, the groundwater system has been stable with respect to salinity, and that condition is expected to continue provided there are no significant changes in Cachuma Project operations. Were groundwater salinity to start showing a sustained upward trend, the City's primary actions would be to: (1) conduct appropriate evaluations to determine the cause; (2) optimize the geographic distribution of City pumping to minimize water-treatment costs; and (3) encourage the optimal utilization of the Below Narrows Account (BNA) storage within Cachuma Reservoir. Reducing water use most likely would have little impact on groundwater salinity, because the groundwater salinity depends on the salinity of the recharge from stream flow, not groundwater use.

BMO-02 – Maintain groundwater elevations that result in a net benefit to basin groundwater users. Groundwater levels within the Lompoc Groundwater Basin are affected mostly by recharge from the Santa Ynez River, and pumping by the City, agricultural producers, and others.

A dynamic equilibrium exists between recharge and pumping within the Lompoc Groundwater Basin such that long-term groundwater levels are stable. Groundwater levels fluctuate seasonally due to the seasonalities of recharge and pumping, and they fluctuate from year to year due to the yearly variations in Santa Ynez River stream flow at the Narrows. While long-term groundwater levels are static, significant groundwater level declines can occur during drought periods due to reduced Santa Ynez River stream flow at the Narrows and correspondingly reduced recharge, but groundwater levels historically have recovered after each drought. The stream flow at the Narrows includes both tributary runoff downstream from Bradbury Dam and releases from Cachuma Reservoir. The reservoir releases are regulated by State Board Order 89-18 and the current NMFS BO. The historical effect of the State Board Order has been to produce stable long-term groundwater levels and acceptable groundwater levels during droughts. However, the impacts of the change in reservoir releases due to changes in either the State Board Order 89-18 or the BO, and its possible revision, create uncertainty.

Groundwater levels within the City limits are affected by municipal groundwater pumping by the City and agricultural groundwater pumping within adjacent areas. However, the groundwater pumping by the City and agricultural producers is balanced by recharge from Santa Ynez River stream flow.

The City supports four monitoring programs with respect to water supply. Firstly, the City meters the production from each of its water-supply wells. Secondly, the City monitors groundwater levels within its wells. Thirdly, the City cooperates with other agencies in collecting groundwater level data throughout the Lompoc Groundwater Basin, including a cooperative program with the USGS. Fourthly, the City cooperates with other agencies to fund USGS monitoring of Santa Ynez River stream flow at several designated monitoring locations.

The City's objectives with respect to groundwater supply are to promote: (1) operation of Cachuma Reservoir that produces the optimal stream flow at the Narrows for groundwater recharge from the Santa Ynez River; and (2) water-use and wastewater-disposal practices throughout the Santa Ynez River watershed that protect Santa Ynez River stream flow at the Narrows. These objectives are to be achieved by: (1) encouraging best management practices; (2) being an active stakeholder regarding water-resources issues throughout the Santa Ynez River watershed; (3) maintaining stream flow and groundwater monitoring within the Lompoc Groundwater Basin; (4) cooperating with other agencies in maintaining stream flow monitoring throughout the Santa Ynez River watershed; (5) periodically analyzing the compiled data for adverse trends; and (6) using the compiled data to optimize the City's groundwater pumping with respect to groundwater levels.

The City has relatively little control over groundwater levels, because groundwater recharge is dependent mostly on the Santa Ynez River stream flow at the Narrows. Under the implementation of State Board Order 89-18, the Cachuma Project Settlement Agreement, and the current NMFS BO, the groundwater system has been stable with respect to groundwater levels, and that condition is expected to continue provided there are no significant changes in Cachuma Project operations. Nevertheless, were groundwater levels to start showing a significant downward trend during a drought, the City's primary actions would be to: (1) conduct appropriate evaluations to determine the cause; (2) optimize the geographic distribution of City pumping to maintain the operability of wells; (3) encourage the optimal utilization of the BNA storage within Cachuma Reservoir; and (4) reduce water use.

BMO-03 – Minimize the risk of future significant impact due to inelastic land subsidence. Land subsidence resulting from groundwater-level declines has not been observed within the Lompoc Groundwater Basin. Furthermore, provided that there are no significant changes in the operation of Cachuma Reservoir, the risk of future significant impacts is very small because long-term groundwater levels have been static. The threshold for the potential occurrence of land subsidence is for groundwater levels to decline below historical lows measured during the 1987-1992 drought. The City's objective is to prevent or minimize future impacts that may result from land subsidence in and around its service area by being aware of this groundwater level threshold for the potential occurrence of subsidence.

BMO-04 – Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping. The Lompoc Groundwater Basin and the Santa Ynez River constitute a dynamically connected system. The recharge from the river is affected by groundwater levels near the river and the groundwater salinity is affected by the stream flow salinity. An objective of the City is to protect the beneficial aspects of those relations. The particulars and approaches to achieving that objective are described above under BMO-01 and BMO-02.

BMO-05 – Protect against the risk of impacts to groundwater levels or groundwater quality caused by changes in surface water flows or surface water quality. Groundwater levels and quality within the City limits are strongly affected by the quantity and salinity of recharge from the Santa Ynez River. A fundamental objective of the City is to protect that recharge. The particulars and approaches to achieving that objective are described above under BMO-01 and BMO-02.

ES.5 GROUNDWATER MANAGEMENT PLAN COMPONENTS

The BMOs are linked to management actions that are planned to attain the BMOs and overall groundwater management goal (Figure ES-3). Management actions are addressed under the six components of the GWMP:

- Agency Coordination, Stakeholder Involvement and Public Outreach
- Monitoring Program
- Groundwater Sustainability
- Adaptive Management and Mitigation in Response to Climate Change
- Groundwater Protection
- Planning Integration

Each component of the GWMP addresses related groundwater management subject matter and recommended actions. For example, the monitoring program component addresses the related topics of groundwater elevation monitoring; groundwater quality monitoring; groundwater-surface water interaction monitoring; and data management, quality assurance and quality control. The groundwater protection component addresses well construction and destruction policies, wellhead protection policies, protection of recharge areas, management of sources of groundwater contamination, and control of saline water intrusion.

ES.6 ADVISORY COMMITTEE FORMATION

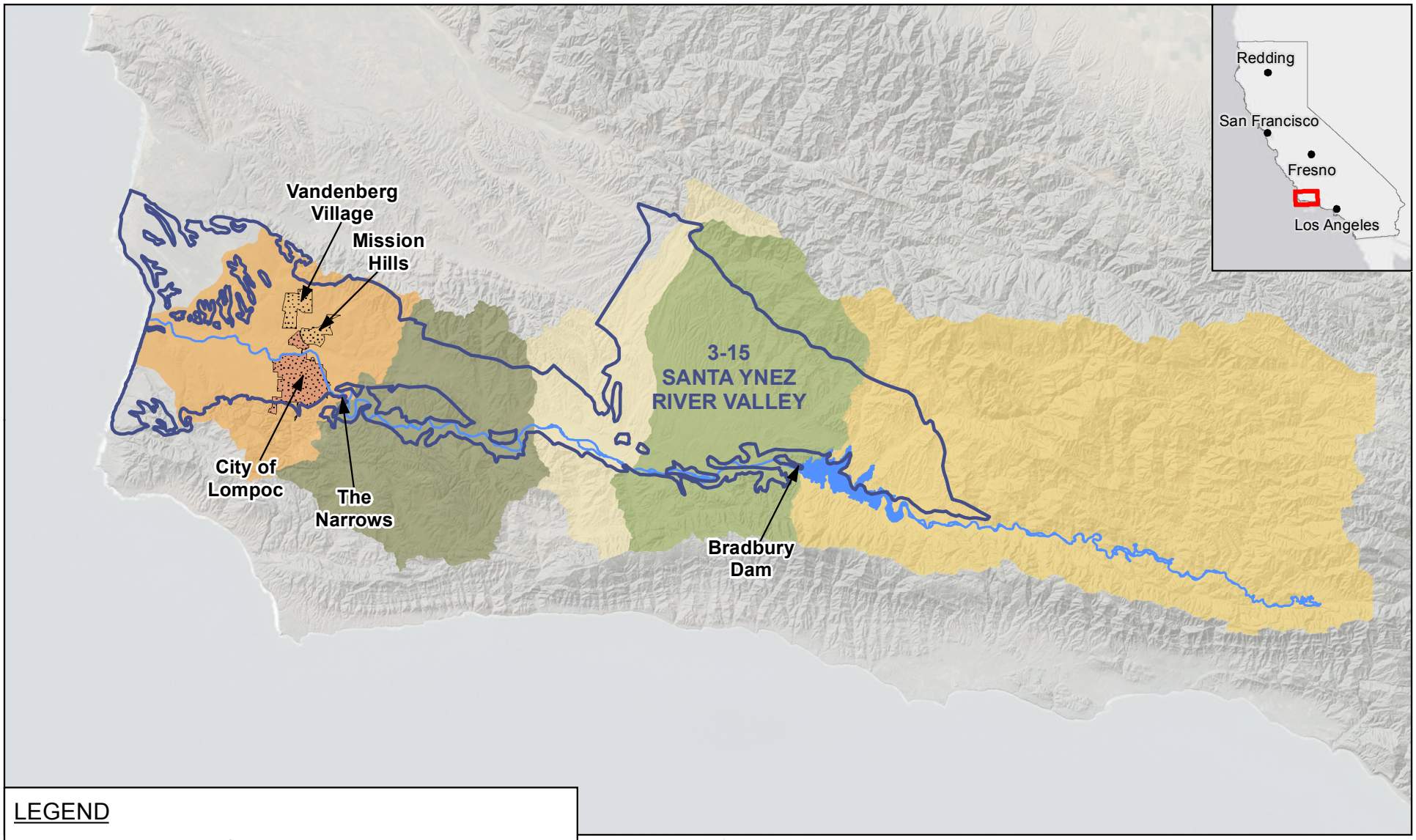
The Advisory Committee for this GWMP is comprised of the City Utility Commission. Each City Council member appoints a Utility Commissioner during the Council member's term of office.

ES.7 FUTURE GROUNDWATER MANAGEMENT PLAN UPDATES

Periodic GWMP updates will be required as knowledge of the Lompoc Groundwater Basin increases and groundwater management strategies evolve. The City will periodically consider new groundwater management techniques to be incorporated into the GWMP. Over time, BMOs may need to be modified based on changing groundwater conditions, institutional framework, or the development of new groundwater management objectives. If changes must be made, the City will formalize the changes in an updated GWMP.

ES.8 FINANCING

The implementation of this GWMP will be funded by the City. Ongoing coordination activities will be performed by City staff using City funds. Most baseline data collection activities will also be funded by the City. The City plans to provide a proportional share of costs for other regional data collection efforts. State or federal funding may be pursued to support implementation of this GWMP.



LEGEND

Watersheds*

- Buellton
- Headwater
- Lompoc
- Los Olivos
- Santa Rita

- Santa Ynez River
- Lake Cachuma
- Santa Ynez River Valley Groundwater Basin (Basin Designation 3-15)
- MIssion Hills and Vandenberg Community Services Districts
- City of Lompoc Water Service

N

0 20,000 40,000

Scale in Feet

* Santa Ynez River Watershed and Groundwater Basin Recharge Area.

FIGURE ES-1

City of Lompoc Groundwater Management Plan

SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN

WEST YOST ASSOCIATES Consulting Engineers

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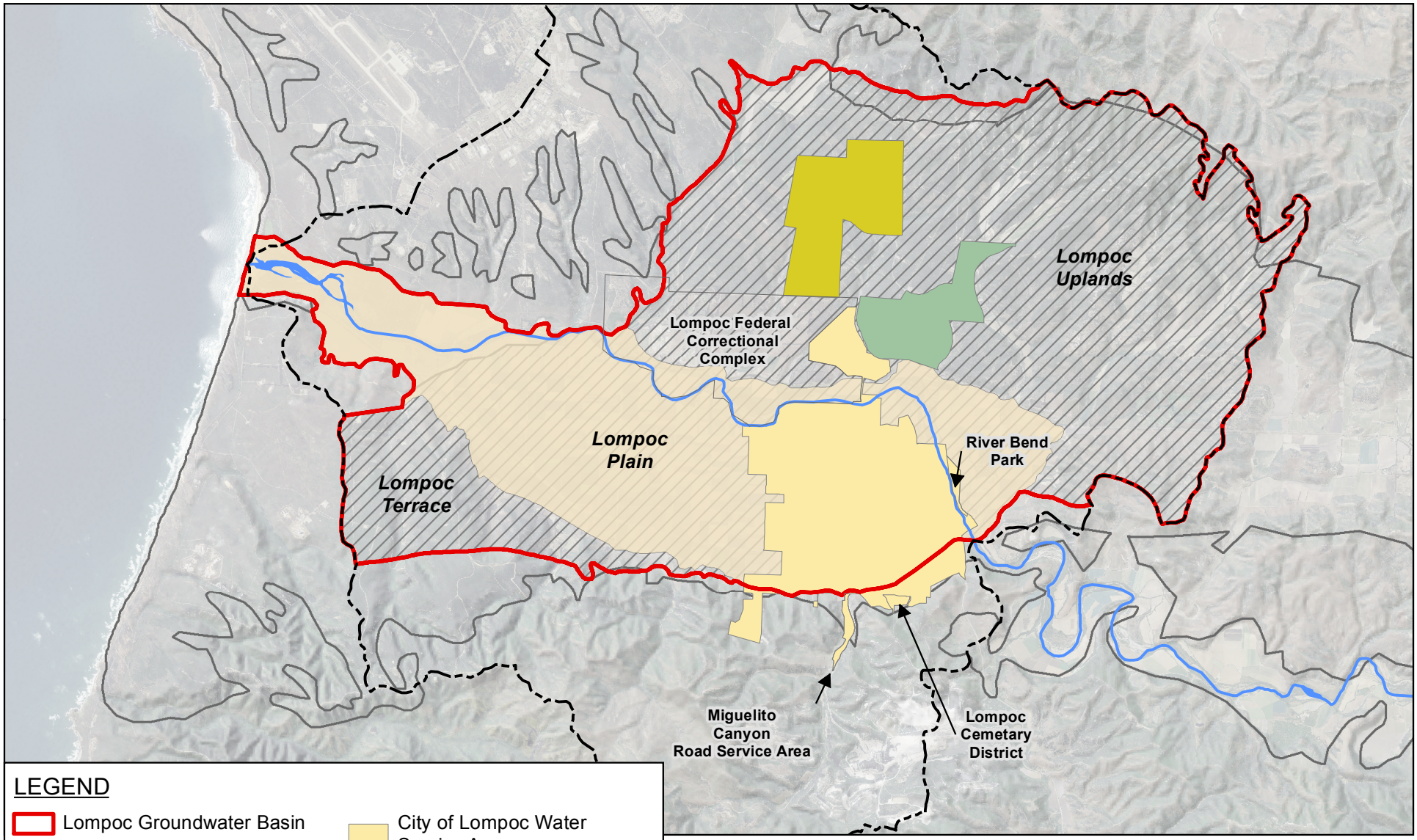

FIGURE ES-2

City of Lompoc Groundwater Management Plan

LOMPOC GROUNDWATER BASIN

WEST YOST ASSOCIATES
Consulting Engineers

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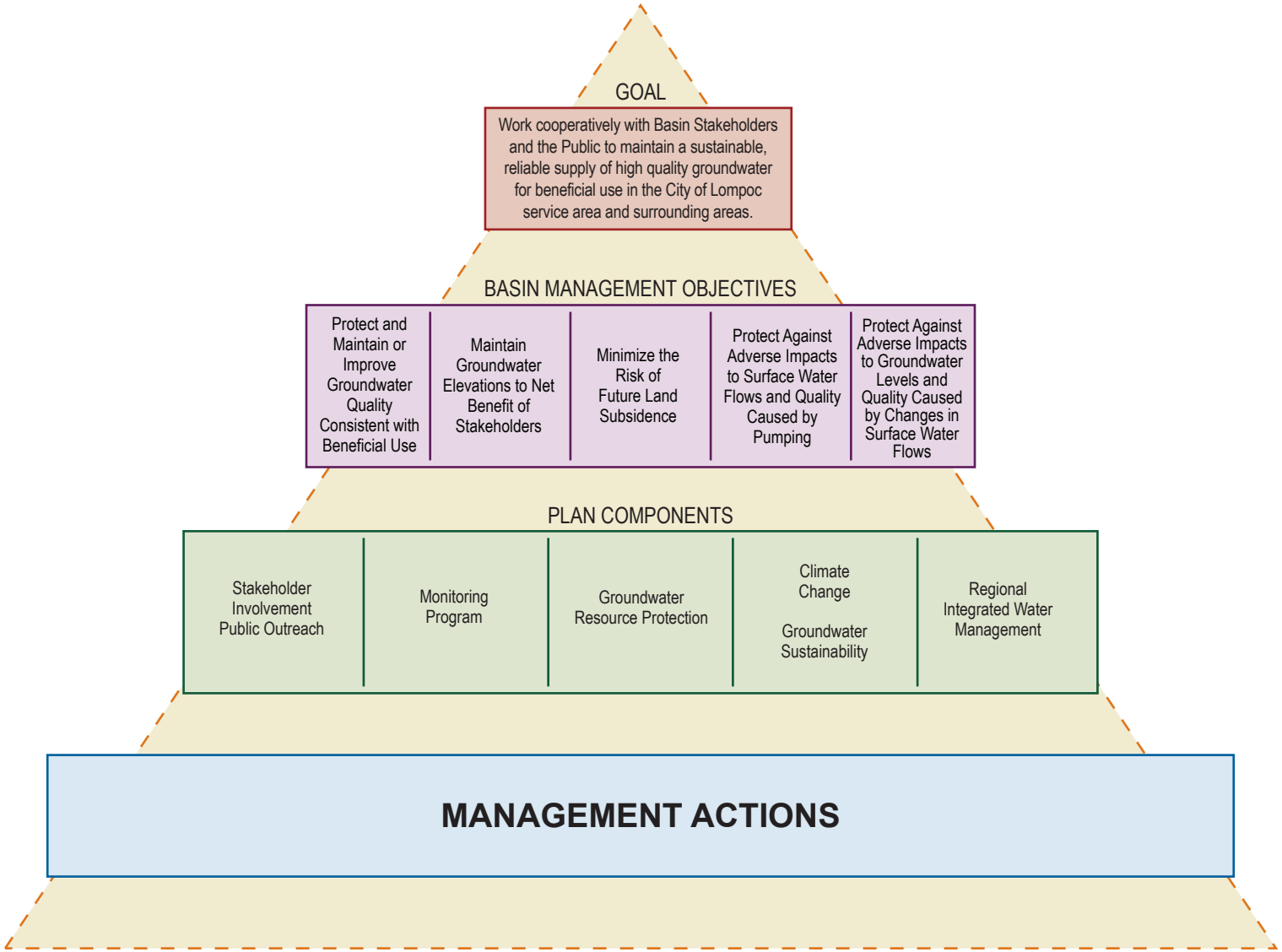

Figure ES-3

City of Lompoc
Groundwater Management Plan

GROUNDWATER MANAGEMENT COMPONENTS

WEST YOST ASSOCIATES

The City of Lompoc (City) prepared this Groundwater Management Plan (GWMP) pursuant to California Water Code (CWC) Section 10750 *et. seq*. for the portions of its water service area overlying the Lompoc Groundwater Basin. The City recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Adoption and implementation of this GWMP supports this goal and helps the City meet requirements in the CWC.

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This GWMP was developed in coordination with local agencies and other basin stakeholders. This plan will be administered under the direction of the City Utilities Director with consideration of the recommendations of an advisory committee made up of members of the City's Utility Commission.

1.1 ORGANIZATION OF THE GROUNDWATER MANAGEMENT PLAN

This GWMP is organized in five sections. Section 1 provides an introduction to the plan. Section 2 describes the physical setting of the plan area, provides an overview of the City's water supply and demands, and discusses the potential effects of climate change. Section 3 documents the City's overall groundwater management goal, BMOs and components of the plan, including discussion of adaptive management and mitigation strategies responding to climate change. Section 4 discusses implementation of the plan. Section 5 provides a list of references cited in the plan.

1.2 AUTHORITY

The CWC provides the City's authority to adopt a GWMP. The City overlies a portion of the Santa Ynez River Valley Groundwater Basin (California Department of Water Resources [DWR] Subbasin 3-15) and provides water service within its service area. The City is a local agency pursuant to CWC Section 10752 (g). The City is authorized to adopt this GWMP as provided in CWC Section 10753 (a).

1.3 CITY OF LOMPOC DESCRIPTION AND OVERVIEW

The City is located along California's central coast near the mouth of the Santa Ynez River approximately 130 miles northwest of Los Angeles (Figure 1-1). The City overlies the Lompoc Plain portion of the Santa Ynez River Valley Groundwater Basin (DWR Groundwater Basin Designation 3-15). The City, Mission Hills Community Services District (MHCSD), and Vandenberg Village Community Services District (VVCSD) are located in the western Santa Ynez River Valley Groundwater Basin. This area is comprised of the Lompoc Plain, Lompoc Upland, and Lompoc Terrace Subbasins, which collectively are referred to in this GWMP as the Lompoc Groundwater Basin.

Figure 1-1 also shows the watershed of the Santa Ynez River. Percolation from the Santa Ynez River channel is the most important source of recharge for the Lompoc Groundwater Basin.

Figure 1-2 shows the City water service area. The City water service area is bounded on the south by foothills of the Santa Ynez Mountains, on the west by prime agricultural lands of the Lompoc Plain and on the north and east by the Santa Ynez River, which is dry most of the year.

The City provides potable water service to an area of approximately 4,690 acres or 7.3 square miles. The City population was estimated to be approximately 42,730 residents in January 2013 (California Department of Finance, 2013). The City of Lompoc's service area population, which excludes the United States Federal Penitentiary, is 39,151 (U.S. Census Bureau and California Department of Finance, 2013). Groundwater is the sole source of municipal supply within water service area. The City's water system, which is operated by the Water Division of the Utility Department, is composed of a well field, water treatment plant, storage reservoirs, a pump station and distribution lines.

The water service area is defined by the City limits, not including the Lompoc Federal Correctional Complex. Additionally, the service area includes homes located one mile south along Miguelito Canyon Road, the Lompoc Cemetery District, located at the southeastern edge of the service area, and the City's River Park. River Park includes 45 developed acres adjacent to the Santa Ynez River on the east edge of the water service area. The City water service area extends to the north of the Santa Ynez River to include the La Purisima Highlands neighborhood, Allen Hancock College and Ken Adams Park (City of Lompoc, 2008).

Other groundwater users in the basin include MHCSD, VVCSD, and agricultural producers, including the Lompoc Federal Correctional Complex farm.

1.4 PURPOSE OF THE GROUNDWATER MANAGEMENT PLAN

The City relies on groundwater to meet the water demands of its customers. The purposes of this GWMP are to:

1. State the City's overall groundwater management goal;
2. Put forth BMO applicable to the City service area;
3. Establish baseline conditions for the portion of the basin that is subject to the GWMP;
4. Provide a mechanism for the continued collection of groundwater and aquifer information;
5. Establish the framework for assessing potential changes with respect to baseline conditions;
6. Establish management actions, including provisions for updating the plan as conditions change and new information becomes available;
7. Maintain consistency with the CWC and help ensure funding eligibility; and
8. Fulfill the CWC requirement that a GWMP must be attached to the City's Urban Water Management Plan (UWMP).

To be eligible for funding for construction of groundwater projects or groundwater quality projects administered by the DWR, the CWC require local agencies to:

1. Make available to the public a written statement describing the manner in which interested parties may participate in development of a GWMP. Public notices are provided in Appendix A.
2. Prepare and implement a GWMP that includes BMOs for the portion of the groundwater basin that is subject to the plan.
3. Include components relating to the monitoring and management of groundwater levels within the groundwater basin, groundwater quality degradation, inelastic land subsidence, and changes in surface water flow and quality that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin. Consider additional components listed in CWC Section 10753.8 (a) through (l).
4. Prepare a GWMP that involves other agencies and enables the local agency to work cooperatively with other public entities whose service areas or boundaries also overly the groundwater basin.
5. Adopt monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic subsidence in basins for which subsidence has been identified as a potential problem and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin. The monitoring protocols should be designed to generate information that promotes efficient and effective groundwater management and supports attainment of the BMOs.

6. Prepare a map that details the areas of the groundwater basin, as defined in DWR Bulletin 118, the area that will be subject to the plan, and the boundaries of the local agencies overlying the basin.
7. Beginning January 1, 2013, amendments to the CWC brought about by Assembly Bill 359 require the GWMPs to include a map identifying the recharge areas for the portion of the groundwater basin underlying the water services area. The map of the recharge areas must be provided to local planning agencies. DWR and interested persons must be notified when the map is submitted to those local planning agencies.

Compliance with these statutes affects the eligibility and award of DWR-administered funding authorized or appropriated after September 1, 2002.

1.5 INSTITUTIONAL SETTING

Groundwater management within the Lompoc portion of the Santa Ynez River Valley Groundwater Basin is conducted within an established institutional and regulatory framework defined by three primary documents. These are:

- State Water Resources Control Board (State Board) Order 89-18
- Cachuma Project Settlement Agreement
- National Marine Fisheries Service (NMFS) Biological Opinion (BO)

Appendix C provides the institutional and regulatory framework documents.

The U.S. Bureau of Reclamation (USBR) constructed and operates the Cachuma Project pursuant to permits and orders issued by the State Board. The Cachuma Project consists of Bradbury Dam, Lake Cachuma, and Tecolote Tunnel, which conveys water to the South Coast area of Santa Barbara County. The tunnel carries water from Lake Cachuma to Santa Barbara and nearby communities. The State Board has issued series of orders regarding the operation of the Cachuma Project. The earlier orders directed the Cachuma Project be operated to maintain groundwater recharge from the Santa Ynez River downstream from Bradbury Dam. The more recent orders, for example Order 94-5, have addressed public trust issues regarding steelhead trout, which are protected under the Endangered Species Act (ESA). Bradbury Dam is located 48 miles from the Pacific Ocean and completely blocks steelhead from migrating to historical spawning and rearing areas upstream. The Santa Ynez River stream flow below Bradbury Dam and the corresponding groundwater recharge from percolating stream flow has a controlling effect on conditions within the Lompoc Groundwater Basin. Consequently, groundwater conditions are linked with the requirements imposed by the State Board orders and with the steelhead trout BO issued by NMFS (2000), which imposes additional constraints on the operation of the Cachuma Project.

The USBR delivers water from the Cachuma Project to Cachuma Conservation Release Board (CCRB) members, Santa Ynez River Water Conservation District, Improvement District No. 1 (Improvement District No. 1) and Carpentaria Valley Water District through a contract with the Santa Barbara County Water Agency (SBCWA). The CCRB is a joint powers agency consisting of the City of Santa Barbara, Montecito Water District and Goleta Water District. The CCRB members, Carpentaria Valley Water District, and Improvement District No. 1 are collectively referred to as the Cachuma Member Units. The CCRB and Carpentaria Valley Water District receive water through the Tecolote Tunnel. The portion of Improvement District No. 1 within the Santa Ynez River Watershed receives water from the State Water Project (SWP) via a pipeline because it exchanged its Cachuma Project water with the CCRB and Carpentaria Valley Water District.

1.5.1 State Water Resources Control Board Order 89-18

The USBR operates the Cachuma Project pursuant to water right permits and orders issued by the State Board. The Cachuma Project operates currently under State Board Order 89-18, the Cachuma Project Settlement Agreement, and the NMFS BO. The Cachuma Project Settlement Agreement and BO are described in successive sections.

The principal provision of Order 89-18 (which is a modification of Order 73-37) requires the Cachuma Project to maintain groundwater recharge below Bradbury Dam that would have occurred in the absence of the Cachuma Project. With respect to the City, the essential requirement of the order is that the Cachuma Project will make releases below Bradbury Dam for the protection of groundwater recharge within the Lompoc Groundwater Basin. The intent of Order 89-18 is that recharge will be the same as would have occurred without the Cachuma Project.

Percolation from the Santa Ynez River recharges two groundwater basins downstream from Bradbury Dam. Using the terminology within Order 89-18, these are the Above Narrows groundwater basin and the Below Narrows groundwater basin. The Above Narrows basin is comprised of the riparian groundwater system that extends from Bradbury Dam to the Narrows. The Below Narrows groundwater basin is coincident with the Lompoc Plain part of the Lompoc Groundwater Basin. For the Above Narrows groundwater basin, Order 89-18 provides for an "above Narrows" storage account in Lake Cachuma (ANA). For the Below Narrows basin, Order 89-18 provides for a "below Narrows" storage account (BNA). Water is credited and released from the accounts such that the groundwater recharge from the Santa Ynez River stream flow is not reduced by the operation of the Project. Order 89-18 specifies rules for crediting and releasing water from the accounts. Releases from the accounts are managed by the Santa Ynez River Water Conservation District (SYRWCD).

Credits accrue to the ANA equal to the inflows to Lake Cachuma unless a live stream occurs in the Santa Ynez River from Bradbury Dam to within the Lompoc Plain. A live stream is defined as observable Santa Ynez River stream flow at several designated monitoring locations. However, the accumulated storage within the ANA may not exceed the total dewatered storage within the Above Narrows groundwater basin. The dewatered storage within the Above Narrows groundwater basin is determined by water-level measurements in a collection of monitoring wells. Spills from Lake Cachuma and BNA releases not reaching the Narrows reduce the accumulated storage within the ANA.

Credits accrue to the BNA based on the difference between the actual groundwater recharge within the Below Narrows groundwater basin and the recharge that would have occurred in the absence of the Cachuma Project. The recharge that would have occurred in the absence of the Project is derived from percolation curves using a constructed stream flow at the Narrows. The BNA is credited with difference between the recharges derived using the measured stream flow and constructed stream flow. The procedure for deriving the constructed flow is specified in Order 89-18.

1.5.2 Cachuma Project Settlement Agreement

The Cachuma Project Settlement Agreement is an agreement between Cachuma Conservation Release Board, SYRWCD, Improvement District No. 1, and the City relating to the operation of the Cachuma Project. During the 1990s, a dispute arose among the City and the Cachuma Member Units regarding Santa Ynez River stream flow quality at the Narrows. The issue was whether the construction and operation of the Cachuma Project had caused increased total dissolved solids (TDS) at the Narrows. The dispute was resolved under the terms of the Cachuma Project Settlement Agreement.

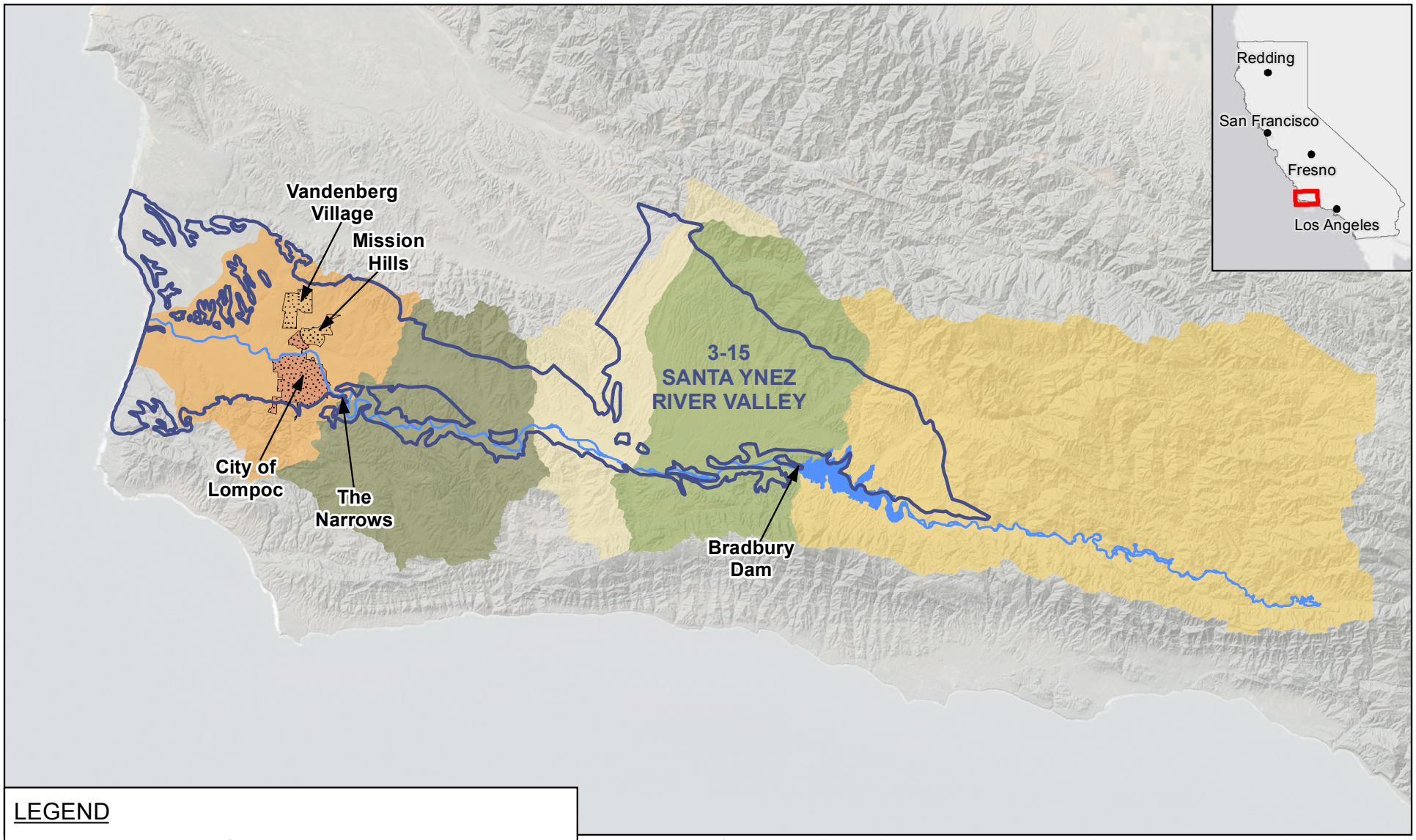
The Cachuma Project Settlement Agreement provides for concurrent releases of SWP water and Santa Ynez River water below Bradbury Dam. SWP water, which is delivered to Bradbury Dam by the Central Coast Water Authority, has lower TDS than the Santa Ynez River water stored within Lake Cachuma. The concurrent releases, which are mixed within the outlet works at Bradbury Dam, result in lower TDS than otherwise would have occurred in Santa Ynez River stream flow below Bradbury Dam.

1.5.3 National Marine Fisheries Service Biological Opinion

The Southern California steelhead was listed in 1997 as an endangered species by the NMFS. That species occurs in the Santa Ynez River. Under the ESA, the USBR is required to utilize their authorities with respect to the Cachuma Project in furtherance of the purposes of the ESA by carrying out programs for the conservation of listed species. Accordingly, the USBR and the NMFS entered into formal consultation to review the operation of the Cachuma Project. That consultation resulted in the issuance of a BO by the NMFS (2000). Somewhat prior to the listing, work was started on a Fish Management Plan (FMP) for the Santa Ynez River below Bradbury Dam. Participants in the planning process included USBR, local water agencies, Santa Barbara County, municipalities, state and federal resource agencies, environmental interest groups, and local landowners. That work resulted in a plan released by the Santa Ynez River Consensus Committee (2000).

The Cachuma Project currently is operated according to the long-term Santa Ynez River stream flows established in the BO and FMP. The specified target stream flows are intended to support steelhead rearing and migration. The maintenance of rearing flows is required in each month, and the required Santa Ynez River stream flow depends on the Lake Cachuma storage and whether the reservoir has spilled. The compliance locations are where Highway 154 and Alisal Road cross the river. The migration flows are to augment storm flows from January through May. The BO describes specific rules for determining the required rearing and migration stream flows. The requirements of the BO have been implemented and include Order 89-18 releases with a revised ramping schedule, releases for rearing target flows, emergency winter storm operations, SWP water release restrictions, and limited reservoir surcharging. The reservoir surcharging was facilitated by physically increasing the gate height, thereby increasing the reservoir storage. The increased storage is used to credit accounts to supply water for meeting requirements for migration flows, as well as flows for adaptive management, and some water for rearing flows.

Alternatives for meeting water supply demands and fishery requirements are being considered currently by the State Board (2012). The alternative preferred by the City, SYRWCD and the Cachuma Member Units is to retain the operational requirements of Order 89-18 and to fully implement the BO utilizing an increased surcharge on Lake Cachuma. The State Board has not yet issued a decision regarding operational requirements for the protection of public trust resources. Moreover, uncertainty exists in that the BO might be changed. The USBR has reinitiated consultation with NMFS, which may result in changes in Cachuma Reservoir operation for fish flows. The current groundwater recharge and salinity within the Lompoc Groundwater Basin would be sustained under current operation of the Cachuma Project; however, potential changes in operation may have impacts on groundwater recharge and/or salinity.



LEGEND

Watersheds*

- Buellton
- Headwater
- Lompoc
- Los Olivos
- Santa Rita

- Santa Ynez River
- Lake Cachuma
- Santa Ynez River Valley Groundwater Basin (Basin Designation 3-15)
- MIssion Hills and Vandenberg Community Services Districts
- City of Lompoc Water Service

N

0 20,000 40,000

Scale in Feet

* Santa Ynez River Watershed and Groundwater Basin Recharge Area.

FIGURE 1-1

City of Lompoc Groundwater Management Plan

SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN

WEST YOST ASSOCIATES Consulting Engineers

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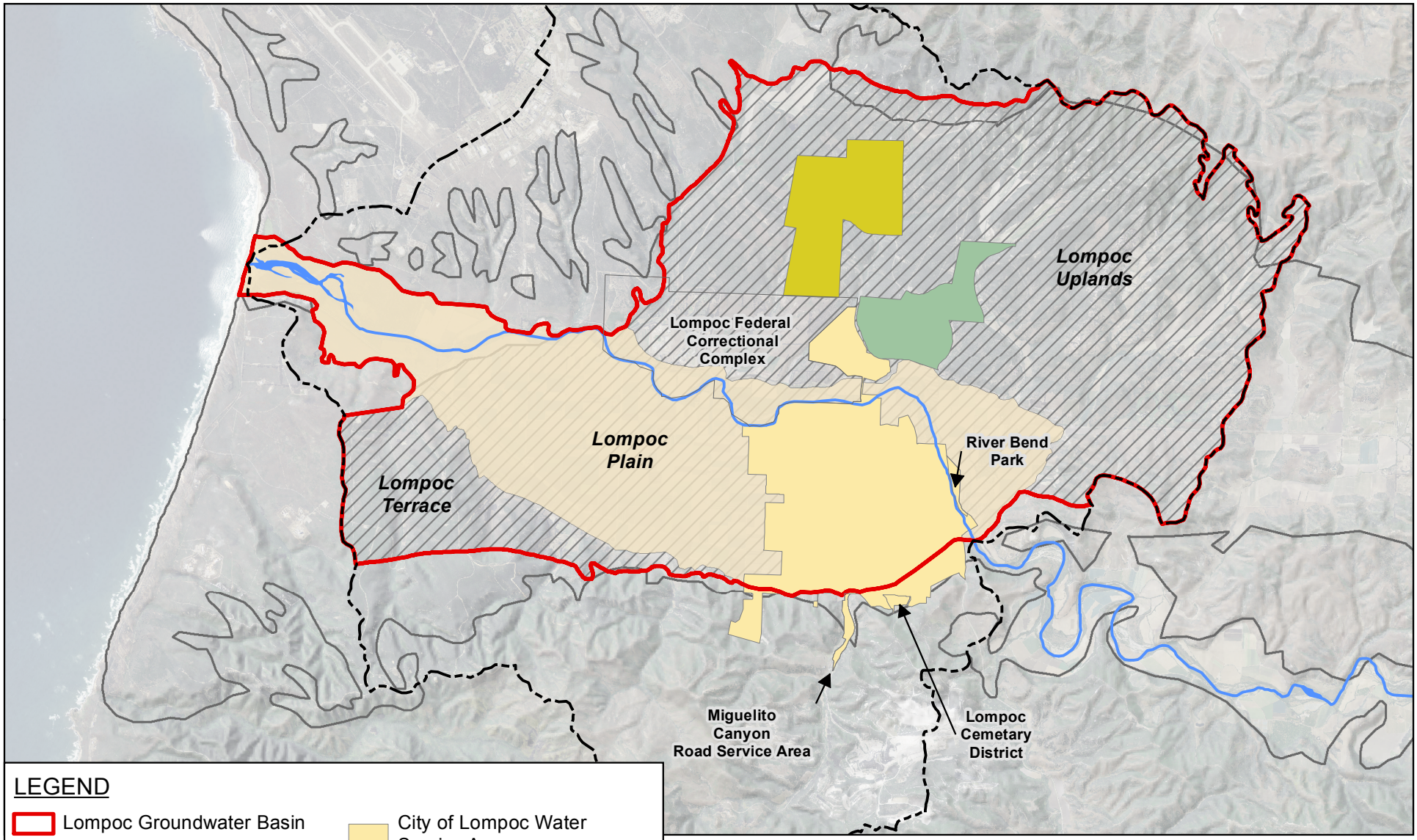

FIGURE 1-2

City of Lompoc Groundwater Management Plan

LOMPOC GROUNDWATER BASIN

WEST YOST ASSOCIATES
Consulting Engineers

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The Lompoc Groundwater Basin is the sole water-supply source for the City, MHCSD, VVCSD and agricultural users, including the Lompoc Federal Correctional Facility farm. While the City pumps groundwater from the Lompoc Plain Subbasin, MHCSD and VVCSD pump from the Lompoc Upland Subbasin. The agricultural producers pump mostly from the Lompoc Plain Subbasin. (Figure 1-2).

2.1 HYDROLOGIC AND WATER-USE SETTINGS

2.1.1 Hydrogeologic Setting

The Lompoc Groundwater Basin is comprised of unconsolidated deposits that include older alluvium, younger alluvium, and river-channel deposits (Figure 2-1). The older continental deposits consist of the Careaga sand, Paso Robles formation, and Orcutt sand, and they comprise the lower aquifer within the Lompoc Groundwater Basin. The younger alluvium and river-channel deposits comprise the upper aquifer. The younger alluvium and river-channel deposits crop out within the Lompoc Plain. The older continental deposits underlie the younger alluvium within the Lompoc Plain (Figure 2-2 and 2-3), and they crop out within Lompoc Upland and Lompoc Terrace. While MHCSD and VVCSD pump from the lower aquifer, the City pumps from the main zone of the upper aquifer. The agricultural producers pump mostly from the upper aquifer.

The lower aquifer consists of fine to coarse sand, with permeabilities that range from 0.1 to 100 feet per day (ft/d) (Upson and Thomasson, 1951; Wilson, 1959; and Bright and others, 1992, 1997). The Careaga sand is comprised of very fine to coarse sand of marine origin, with permeabilities that range from 0.1 to 70 ft/d. The lower Careaga sand tends to be fine sand, and the upper part tends to be medium to coarse sand. The Paso Robles formation, which overlies the Careaga sand, is comprised of fine to coarse sand, silt, and clay of non-marine origin, with permeabilities that range from 10 to 100 ft/d. The lower part of the Paso Robles formation is finer grained than the upper part. The Orcutt sand, which overlies the Paso Robles formation, is comprised of coarse sand, silt, and clay of mostly non-marine origin, with permeability of about 5 ft/d.

The upper aquifer includes the younger alluvium, which displays three distinct zones. Bright and others (1992 and 1997) subdivide the younger alluvium into the shallow zone, middle zone, and main zone. The shallow zone is comprised mostly of fine sand and silt. The middle zone is comprised mostly of sand and gravel. The main zone consists of sand and gravel that is coarser than that occurring within the middle zone. The average proportion of coarse-grained sediments (which include sandy silt through gravel) is 40 percent for the shallow zone, 50 percent for the middle zone, and 70 percent for the main zone (Hydrologic Consultants, Inc. [HCI], 1997). The intermediate-scale permeability of the younger alluvium ranges from 10 to 400 ft/d within the upper zone, 10 to 20 ft/d within the middle zone, and 300 to 400 ft/d within the main zone. The river-channel deposits consist of sand and gravel, with permeabilities that range from 100 to 400 ft/d (HCI, 1997).

The lateral boundaries and base of the Lompoc Groundwater Basin are defined by the contact between low-permeability consolidated rocks and the higher-permeability alluvium that comprises the lower and upper aquifers, except in limited areas where the boundary crosses unconsolidated deposits. Consolidated rocks that crop out in the Santa Ynez Mountains (Figures 2-1 to 2-3) form the southern boundary. Consolidated rocks that crop out within Burton Mesa and the Purisma Hills form the northern boundary. Consolidated rocks that crop out within the Santa Rita Hills form the eastern boundary, except where the older alluvium extends into the Santa Rita Groundwater Basin.

2.1.2 Hydrologic Setting

The subbasins within the Lompoc Groundwater Basin are parts of an integrated groundwater system, within which groundwater moves between the subbasins. The directions of groundwater flow are shown on Figure 2-4, along with groundwater-level elevations. Within the Lompoc Upland, groundwater flows generally southwestward and into the Lompoc Plain. Within the eastern Lompoc Terrace, groundwater flows generally northeastward and into the Lompoc Plain. Within the western Lompoc Terrace, however, groundwater flows westward and into the Pacific Ocean. Within the Lompoc Plain, groundwater flows generally westward.

Groundwater levels within the Lompoc Groundwater Basin and the water budget for the basin depend on pumping from the basin and the Santa Ynez River stream flow at the Narrows (Figure 1-1). The principal source of recharge to the basin is percolation from the Santa Ynez River channel. Groundwater pumping induces recharge from the river. For an increment of pumping, the corresponding increment of induced recharge equals the increment of pumping. In other words, new pumping is balanced by new recharge in an equal amount. This occurs because the Santa Ynez River is hydraulically connected to the groundwater system and because the Santa Ynez River discharge to the ocean is large compared to the recharge from the river within the Lompoc Groundwater Basin.

While the stream-aquifer interactions within the Lompoc Groundwater Basin maintain a long-term equilibrium between pumping and recharge, imbalances occur from year to year. Those imbalances are related to the pattern of Santa Ynez stream flow at the Narrows. During normal and wetter years, the recharge from the river tends to exceed that required to balance the pumping within the basin. During drought years, the recharge from the river tends to be less than that required to balance pumping. Correspondingly, year to year groundwater levels rise during normal and wet periods, and they decline during drought years, even though the long-term average pumping and recharge are in balance.

This process is associated with pumping within either the Lompoc Plain or the Lompoc Upland. This is the case because the Lompoc Upland is hydraulically connected to the Plain, which in turn is connected to the river. Prior to any groundwater development within the Lompoc Upland, all of the natural recharge within the Lompoc Upland moved as groundwater flow to the Lompoc Plain. Pumping caused groundwater levels within the Lompoc Upland to decline, and it caused a corresponding decrease in the groundwater flow from the Lompoc Upland to the Lompoc Plain. That decrease in groundwater flow to the Lompoc Plain resulted in slightly lower groundwater levels within the Lompoc Plain. Those lower groundwater levels induced recharge from the Santa Ynez River. These processes work to bring the groundwater system into a balance so that the additional recharge from the river balances additional pumping within the Lompoc Upland. That balancing lags changes in pumping by several decades for MHCSD and longer for VVCSD, and groundwater-level changes occur while the system comes into balance. However, at the balanced state, groundwater-levels do not exhibit any long-term trend.

This equilibrium can produce two groundwater conditions within the Lompoc Upland. If the pumping within the Lompoc Upland is less than the net recharge, groundwater will flow from the Lompoc Upland into the Lompoc Plain, where the net recharge is the algebraic sum of natural recharge, recharge from landscape irrigation, and subsurface exchanges between the Lompoc and Santa Rita groundwater basins. However, if the pumping is greater than the net recharge, groundwater will flow from the Lompoc Plain into the Lompoc Upland. Groundwater-level measurements within the Lompoc Upland and Plain suggest that projected groundwater pumping within the Lompoc Upland will about equal the net recharge, which means that the long-term net groundwater exchange between the Lompoc Plain and Lompoc Upland will be about zero. The Lompoc Upland and the overall Lompoc Groundwater Basin will be in equilibrium between pumping and recharge.

2.1.3 Historical Groundwater Conditions

Figures 2-5 to 2-7 show historical pumping by the City, MHCSD, and VVCSD. The pumping for 1965-1995 was derived from Hydrologic Consultants, Inc. (1997), and the pumping from later years was provided by the pumpers. The gaps in the graph for MHCSD represent periods for which no data are available. The pumping during 2006-2010 was about 5,000 acre-feet per year (acre-ft/yr) for the City, 650 acre-ft/yr for MHCSD, and 1,500 acre-ft/yr for VVCSD. While the long-term trend has been for increasing pumping for each community, the pumping data for the City, MHCSD, and VVCSD for the most recent years suggests a reversal of that trend.

Figure 2-8 shows the locations of wells with historical groundwater level measurements near the City, MHCSD, and VVCSD. Figures 2-9 through 2-14 are groundwater level hydrographs for the wells. The hydrographs for the City indicate that groundwater levels fluctuate seasonally and yearly, but they do not display a long-term trend. Nevertheless, groundwater levels declined during the late 1980s and early 1990s drought as much as 30 feet, but they later recovered. The seasonal groundwater-level fluctuations occur in response to the seasonal patterns of pumping and recharge from the Santa Ynez River. Pumping peaks in the summer, while the principal recharge tends to occur during winter and spring. The yearly groundwater-level fluctuations

occur in response to the annual variations in Santa Ynez stream flow at the Narrows and the corresponding fluctuations in recharge. Historically, the City pumping has increased, even though it has decreased in recent years. The long-term flat trend in groundwater levels that occurred during the period of increased pumping is evidence that the recharge adjusted to the pumping. If the recharge had not increased, groundwater levels would have declined significantly. The groundwater system and Santa Ynez River are characterized by a self-maintaining balance between City pumping and recharge from the Santa Ynez River, (Figures 2-9 and 2-10).

The hydrographs for MHCSD and VVCSD indicate that groundwater levels fluctuate seasonally and yearly, but they have not displayed a long-term trend since about 1990. Prior to that, groundwater levels displayed a slight downward trend. The downward trend represents a period during which the pumping within the Lompoc Upland was equilibrating to the groundwater flow from the Lompoc Uplands to the Lompoc Plain (Figure 2-4). Prior to groundwater development within the Lompoc Upland (which started in the early 1960s), the natural groundwater recharge within the Lompoc Upland discharged from the Lompoc Uplands to the Lompoc Plain as subsurface flow. An equilibrium existed at that time between the long-term recharge and the long-term discharge to the Lompoc Plain. Groundwater development temporarily disrupted that equilibrium, but a new equilibrium was established when the pumping induced a reduction in the discharge from the Lompoc Upland to the Lompoc Plain. Under this new condition, the discharge to the Lompoc Plain equals the natural recharge less the net pumping, and groundwater levels do not show a long-term trend (Figures 2-9 to 2-14).

Hydrographs of groundwater TDS are shown on Figures 2-15 and 2-16. Figure 2-15 shows the average annual TDS of the comingled groundwater delivered to the City of Lompoc Water Treatment Plant. The TDS of pumped water varies from well to well. The water from the wells is comingled at the treatment plant, and Figure 2-15 represents the annual average TDS of the comingled water. The average annual TDS was 1,210 mg/L during 1965-1991, and it was 1,120 mg/L during 1992-2010, which represents a decrease of 90 mg/L. Figure 2-16 shows TDS in a well within the City area, which represents groundwater TDS at a particular location rather than comingled water from many locations. However, the trend displayed for the well is similar to the trend for the comingled water, where on both Figures 2-15 and 2-16 the TDS is higher during earlier periods and lower during later periods. The change occurred sometime after the implementation of State Board Order 89-18, which impacted the Santa Ynez River stream flow at the Narrows. Highlighted on Figure 2-16 are data representing fall sampling (around October each year, which usually is before the start of the rainy season), which tend to have the highest TDS during the annual hydrologic cycle. The fall samples display a definite downward trend.

Figure 2-17 shows flow-duration relations for Santa Ynez River stream flow at the Narrows. The coordinates of a point on a curve represent the percentage of time (x-axis coordinate) that a particular flow (y-axis coordinate) is exceeded. One relation represents stream flows for the 11-year period from 1974 through 1984. The other relation represents the 10-year period 2001-2010. These periods were selected to represent periods of about equal average stream flow before and after the implementation of State Board Order 89-18. The earlier period has an average annual stream flow of 150 cubic feet per second (cfs), and the later period has an average annual stream flow of 130 cfs. For stream flows greater than about 30 cfs, the relations are similar. However, for stream flow less than 30 cfs, stream flows are significantly higher during the period after State Water Board Order 89-18 than during the earlier period. Experience with the regional groundwater model described below indicates that recharge is the result mostly of intermediate Santa Ynez River stream flows at the Narrows. While low stream flows mostly become recharge, the stream flow volume is small. While high stream flows represent a large volume, recharge tends proportionally to be small because the stream flow duration is short and because the recharge rate can be impaired due to groundwater mounding beneath the river.

Figure 2-18 shows a relation between Santa Ynez River stream flow at the Narrows and stream flow TDS. Data for the period before the implementation of State Board Order 89-18 are differentiated by symbol color from data for the period after the Order. However, the figure suggests that the relations between stream flow and TDS are the same for the earlier and later period. For stream flows between 2 and 2,000 cfs, TDS tends to decrease with increasing stream flow, which is approximated on the figure by a linear relation between TDS and log-scale stream flow. For stream flows at or below 2 cfs, the TDS tends to be about 1,250 mg/L, as indicated by the leftmost segment of the relation. For stream flows at or above 2,000 cfs, the TDS tends to be about 450 mg/L, as indicated by the rightmost segment of the relation. The scatter in the plotted data around this relation results in large part because the TDS for a particular stream flow depends on the history of prior stream flows. The relation between stream flow and TDS and the relation between stream flow and the geographic distribution of stream flow recharge intersect to produce a particular pattern of groundwater TDS along the river. Correspondingly, the increase in intermediate stream flows following the implementation of State Board Order 89-18 has tended to cause a subsequent reduction in groundwater TDS within the eastern Lompoc Plain. While groundwater levels within the eastern Lompoc Plain (Figures 2-8 to 2-14) appear to have been unaffected by the change in the stream flow-duration relation (Figure 2-17), groundwater TDS appears equally to have been affected (Figures 2-15 and 2-16).

The term "overdraft", as generally used, means that groundwater pumping is causing long-term undesirable impacts, which principally include unsustainable groundwater-level declines and water-quality deterioration. The historical data for the Lompoc Groundwater Basin indicate that long-term groundwater levels are not declining and groundwater quality is not deteriorating with respect to groundwater use by the City, MHCSD, and VVCSD. Correspondingly, the Lompoc Groundwater Basin is not in overdraft. Nevertheless, that status is dependent on the quantity and quality of Santa Ynez River stream flow at the Narrows and Cachuma Project operations under State Board Order 89-18.

2.2 PROJECTED GROUNDWATER CONDITIONS

2.2.1 Projected Groundwater Pumping

A groundwater model was used to simulate the groundwater levels that will result from the projected future pumping for the City, MHCSD, and VVCSD. The projected pumping is for 2030. For City of Lompoc, projected pumping is the average monthly pumping identified in the 2010 Urban Water Management Plan (UWMP) (Stetson Engineers, 2011). That pumping is shown on Figure 2-19. The monthly pumping ranges from 4.2 to 6.6 million gallons (390 to 610 acre-feet [acre-ft]), and the annual pumping is 62.4 million gallons (5,800 acre-ft). For MHCSD and VVCSD, the projected pumping is the average monthly pumping for complete development of the respective planned urban areas. That pumping is shown on Figures 2-20 and 2-21. The monthly pumping for MHCSD ranges from 1.0 to 2.0 million gallons (93 to 190 acre-ft), and the annual pumping is 18.1 million gallons (1,700 acre-ft). The monthly pumping for VVCSD ranges from 1.1 to 2.3 million gallons (100 to 210 acre-ft), and the annual pumping is 20.5 million gallons (1,900 acre-ft).

2.2.2 Projected Groundwater Conditions

A previously developed groundwater model was used to assess the response of the Lompoc Groundwater Basin to projected pumping by the City, MHCSD, and VVCSD. The model was developed for the City in about 1994, and updated for the City in 1997 (Hydrologic Consultants, Inc., 1997). The model represents the Lompoc Groundwater Basin, including the Lompoc Plain, Upland, and Terrace. The model was developed originally for the litigation between agricultural producers within the Lompoc Plain, the City, and others (City of Santa Barbara, Montecito Water District, MHCSD, and VVCSD). The model was subsequently updated and used in developing the Cachuma Project Settlement Agreement between the City, the CCRB, SYRWCD, and Improvement District No. 1. The model also was used in developing the EIR within the State Board proceedings on potential modifications to the USBR water right permits for the Cachuma Project to provide appropriate protection to downstream water rights and public trust resources on the Santa Ynez River (State Board, 2012). The updated model is described by HCI (1997), and it is referred to here as the HCI regional model.

The HCI regional model simulates groundwater flow and stream-aquifer interactions with the Santa Ynez River downstream from the Narrows. The principal inputs are Santa Ynez River stream flow at the Narrows; land-use characteristics overlying the Lompoc Groundwater Basin; consumptive use by crops, urban landscape, and native vegetation; and pumping for agricultural, urban, and institutional uses. The principal outputs are groundwater levels and Santa Ynez River stream flow at locations downstream from the Narrows. The model is based on the computer program FEMFLOW3D (Durbin and Bond, 1997), which is a finite-element program developed within the U.S. Geological Survey for simulating three-dimensional groundwater flow. The finite-element mesh for the model is shown on Figures 2-22 and 2-23. The mesh is an assemblage of individual wedge-shaped elements.

The HCI regional model was used to simulate groundwater conditions for a 35-year future period. The weather conditions assigned within the model are the historical conditions for water years 1959-1993. That historical period was selected because it is the period used in the EIR regarding potential modifications to the USBR water right permits for the Cachuma Project to provide appropriate protection to downstream water rights and public trust resources on the Santa Ynez River (State Board, 2012). That period includes the severe 1976-1977 and 1987-1992 droughts. During the 1976-1977 drought the maximum single-year deficiency of record occurred. During the 1987-1992 drought the maximum cumulative multi-year deficiency of record occurred.

The Santa Ynez River stream flows assigned within the model for the Narrows are those used in the EIR regarding potential modifications to the USBR water right permits for the Cachuma Project to provide appropriate protection to downstream water rights and public trust resources on the Santa Ynez River. Those stream flows were generated from a simulation with the Santa Ynez River Hydrology Model, which is a model that simulates stream flow and reservoir operations within the Santa Ynez River basin. The simulation represents alternative 3C within the EIR, which was identified as an environmentally superior alternative. The alternative corresponds to the continued operation of Cachuma Reservoir as specified by State Board Order 89-18 and the Cachuma Project Settlement Agreement. The municipal pumping assigned within the model is the projected monthly pumping for the City, MHCSD, and VVCSD (Figures 2-19 to 2-21), where the annual pumping is the same for each year within the simulation period. The agricultural pumping assigned within the model corresponds to the irrigated area for 2030 conditions.

The simulated groundwater levels are shown on Figures 2-24 to 2-26. Figure 2-24 shows groundwater levels within the City area, Figure 2-25 shows groundwater levels for the MHCSD area, and Figure 2-26 shows groundwater levels for the VVCSD area. The simulated groundwater levels show that an equilibrium will be achieved for the projected City, MHCSD, VVCSD, and agricultural pumping and the groundwater basin under continued operation of the Cachuma Project consistent with State Board Order 89-18 and the Settlement Agreement. While groundwater levels display seasonal and yearly fluctuations, they do not have a long-term trend. The seasonal fluctuations correspond to the counter seasonality of pumping and recharge from the Santa Ynez River. The yearly fluctuations correspond to yearly variations Santa Ynez River stream flow at the Narrows.

2.3 LAND SUBSIDENCE

No evidence of land subsidence has been found in the Lompoc Groundwater Basin. Land subsidence due to groundwater withdrawal is triggered by decreases in pore pressure in a confined aquifer system containing clay layers (typically, montmorillonite clay). The decrease in pore pressure increases the effective stress on the aquifer skeleton. If this effective stress exceeds the maximum stress to which the aquifer skeleton has been subjected in the past, the clay layers will undergo permanent compaction.

Differential land subsidence and associated earth fissuring resulting from groundwater withdrawal have had significant consequences in several California groundwater basins. The risk of significant impacts depends on a complex array of variables including: the degree of new groundwater development, especially in areas or at depths not previously exploited; changing land use, which could bring to light an impact that would otherwise go unnoticed; and the mineral composition and consolidation history of the aquifer skeleton.

2.4 CLIMATE CHANGE

National and international research for the past several decades has indicated a growing concern that climate is changing, to a large extent due to human activities related to the generation of greenhouse gasses such as carbon dioxide. In the past there has been substantial uncertainty, and some doubt in public discourse and debates. Over the last few years there have been landmark advancements in scientific studies, ultimately leading to major conclusions in the Fourth Assessment of the Intergovernmental Panel on Climate Change (IPCC).

The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. It was set up by the World Meteorological Organization and the United Nations Environment Programme, and has served since 1988 as a clearinghouse for research and policy discussions related to climate change. The role of the IPCC "…is to assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation …." Agencies of the United States government have provided major input to both research and discussion, particularly through the USGS. Science organizations worldwide have been following climate change research, and in 2009 the Academies of Sciences from 13 nations issued a letter calling for urgent and coordinated action to combat climate change (National Academies, 2009).

The IPCC has issued four major "assessments" of the status of climate change research, current levels of understanding, and potential policy implications. The Fourth Assessment Report was released throughout 2007, indicating for the first time clear links between human activities and global warming. The Fifth Assessment Report is scheduled for finalization in 2014. The historical and projected continued warming of the earth has and will continue to cause changes to our climate. While such induced "climate change" has implications to a number of environmental factors, of concern in this discussion is implications to water supply reliability.

The State of California has provided major focus and funding on climate change research and impacts, with particular focus on developing both "adaptation" and "mitigation" strategies. In the context of climate change and its impacts to water resources, "adaptation" is simply the identification and development of strategies to cope with the expected impacts to water supply reliability. "Mitigation" is the identification and development of actions that will reduce the drivers for climate change; for the most part this translates into programs to reduce greenhouse gas emissions and lower the "carbon footprint" of activities associated with water supply and use.

The State's research and continuing recommendations are readily available. The State's Climate Action Team has noted a clear connection between water use and energy consumption, and consequently also with greenhouse gas production (see California Climate Change Portal for the most recent technical and policy information: http://www.climatechange.ca.gov/). The 2005 California Water Plan Update addressed climate change and water in a general way, noting the many potential interconnections as well as the potentially serious impacts of ongoing climate change on water supply reliability. The 2009 Update to the California Water Plan addresses this topic in a more substantive way (http://www.waterplan.water.ca.gov/climate/index.cfm), and includes recommendations and advice on how to incorporate climate change into long-term water resources planning. It is also recommends specific actions in the areas of adaptation and mitigation as discussed above.

DWR maintains an updated web site on climate change and California's water resources (http://www.water.ca.gov/climatechange/). That web site notes, in part: "Climate change is already impacting California's water resources. In the future, warmer temperatures, different patterns of precipitation and runoff, and rising sea levels will profoundly affect the ability to manage water supplies and other natural resources. Adapting California's water management systems to climate change presents one of the most significant challenges for the 21st century". In 2006, DWR published a major report on climate change and California's water resources, Progress on Incorporating Climate Change Into Management of California's Water Resources. This was summarized and updated in a paper published in a special issue of the Journal of Climate Change in 2008 (http://wwwdwr.water.ca.gov/climatechange/docs/CCprogress_mar08.pdf). In 2010, DWR provided another update entitled Climate Change Characterization and Analysis in California Water Resources Planning Studies. This report provides a summary of the climate change characterization approaches and methodologies that have been used in recent planning studies conducted by DWR and its partner agencies. The report is intended for use by DWR to consider how to include climate change analyses in planning studies, with emphasis on the SWP planning studies.

Collectively this State information provides the most updated information related to potential specific impacts of water supply reliability in California related to impacts of a changing climate.

DWR and others have done studies to model potential future impacts at the regional level on both stream flow and temperature. The focus has been on the Sacramento River system since it is a major source of water for much of California.

The different models are split on whether future annual average runoff will be wetter or drier. Other studies make it clear, however, that we are likely to see more extreme hydrology: more floods and droughts, regardless of the "average" hydrology. However, these same regional models agree that the future will likely be warmer than it is today.

Other potential changes include less snowpack, earlier runoff from snowmelt, more precipitation as rain than snow, changes in the amount and timing of stream flows, changes in water resources system operations, and rising sea levels. In turn, these changes could have serious impacts to water supply reliability, including water quality. DWR has confirmed that some impacts have been underway for many years. For example, the historical Sacramento River snowmelt runoff has been decreasing as a percentage of total annual flows for much of the 20th century. This is an indication of a long-term decrease in snowpack, and perhaps an increase in wintertime flows and floods.

There are few published examples of water supply adaptation and mitigation strategies. In December 2007, the water user organization, California Urban Water Agencies (CUWA), published a summary report of a survey of its 11 large urban water agencies on this topic (CUWA agencies are major urban water utilities throughout the state, and include such agencies as the Metropolitan Water District of Southern California, East Bay Municipal Utility District, and the San Francisco Public Utilities District). This report, "Climate Change and Urban Water Resources, Investing for Reliability", identifies a number of adaptation and mitigation strategies currently being employed to address climate change. Table 2-1 lists some of these strategies. The CUWA report is available on their web site: http://www.cuwa.org/pubs/ClimateChangeUrbanWaterResources2007.pdf.

Table 2-1. CUWA Adaptation and Mitigation Examples

Adaptation Examples	Mitigation Examples
Develop groundwater storage	Renewable energy generation
More aggressive conservation	Conserve energy in water facilities
Water transfers	Decrease energy use in fleet, equipment
Optimize local storage	Increase employee incentives for action
Develop regional water projects, partnerships	Develop methane offsets (biogas at wastewater facilities used in place of natural gas or other fuels)
Take leadership role on this issue	Take leadership role on this issue

Despite the high level of attention both in California and internationally, there is very little information developed on the potential impacts of climate change on groundwater. The principal concern is rising sea level and potential salinity intrusion into coastal groundwater aquifers. While this is a concern for coastal areas of California, it is not a concern in the portion of Lompoc Groundwater Basin near the City. Groundwater levels have been stable and sufficiently elevated to prevent seawater intrusion. This condition is expected to continue provided there are no significant changes in Cachuma Project operations.

While not addressed specifically in IPCC reports, there are potential impacts to groundwater resources that have been discussed over the past few years. These include the following concerns:

1. Decreased reliability of surface water supplies could lead to increased reliance on groundwater, further stressing such supplies.
2. Changes to surface water hydrology – increased winter flood flows, reduced spring and summer snowmelt runoff – could decrease groundwater recharge.
3. Increased landscape and irrigation water demands due to increased temperatures will further increase pressures on groundwater supplies.

To help address these and other potential concerns over climate change, the City is participating in a climate change study with VVCSD and MHCSD. The study, known as "Climate Adaptation Planning for Small and Medium Water Systems", is funded by the National Oceanic and Atmospheric Administration (NOAA) Sectorial Applications Research Program (SARP). The goals of the study are to:

- Assess water resources changes due to climate change
- Identify future infrastructure vulnerabilities
- Integrate results into climate adaptation planning
- Document lessons learned and recommendations for NOAA SARP on the climate change information needs of small and medium water systems

Section 3.3.4 provides a discussion of adaptive management and mitigation as a component of the City's GWMP. The results of the NOAA SARP funded study will support this component by providing new insights into potential climate change impacts to the Lompoc Groundwater Basin and any identified groundwater infrastructure vulnerabilities.

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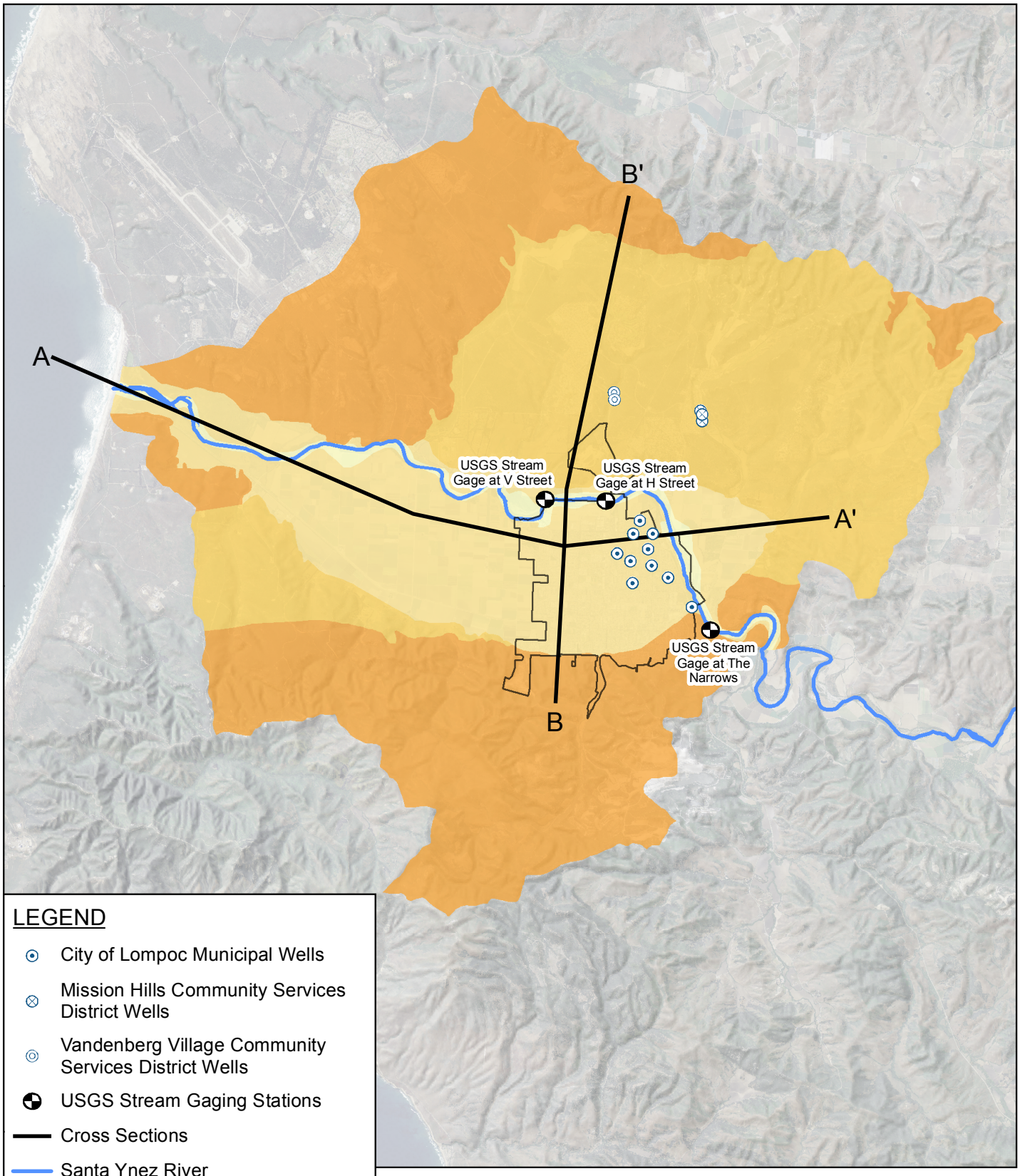
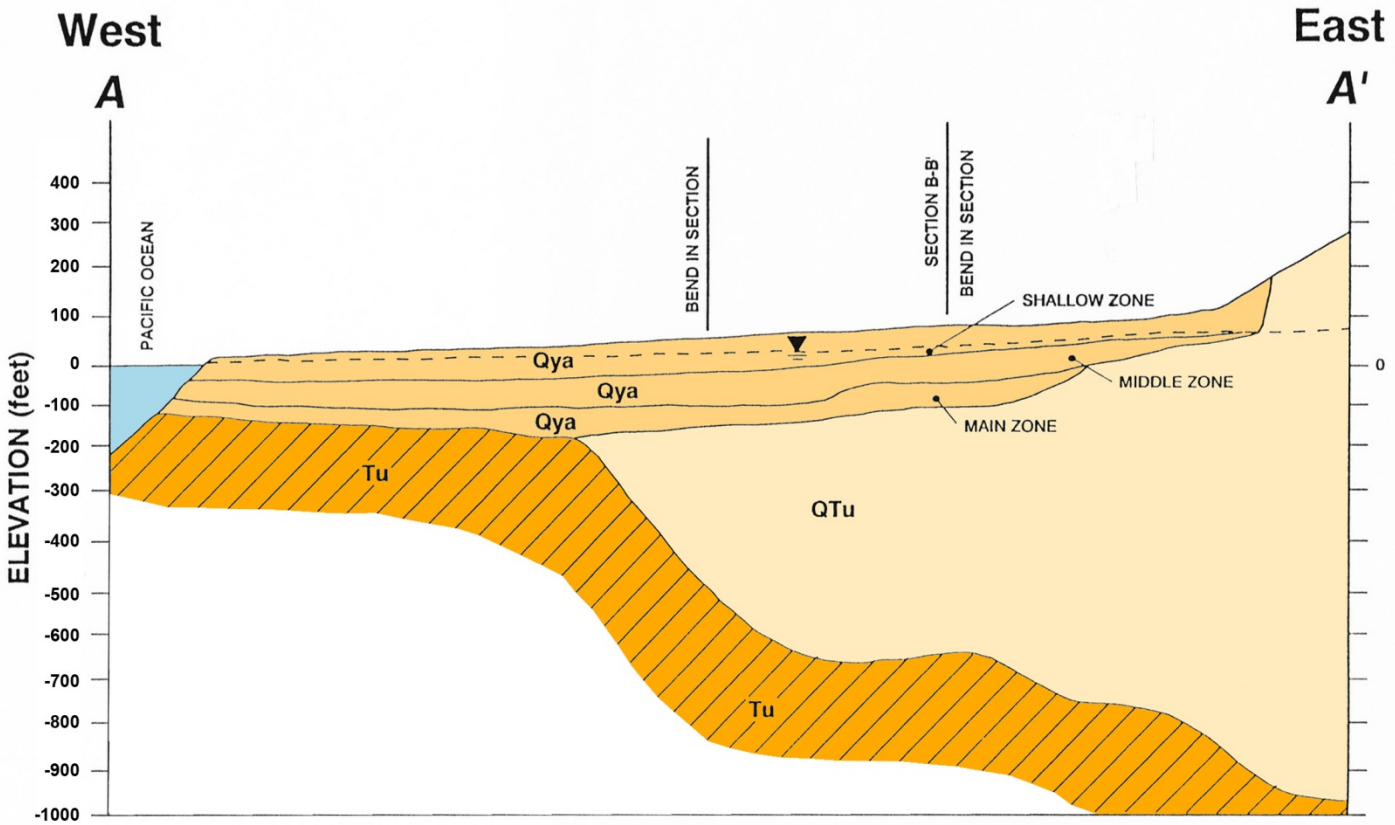


FIGURE 2-1

City of Lompoc
Groundwater Management Plan
HYDROGEOLOGIC UNITS WITHIN LOMPOC GROUNDWATER BASIN

WEST YOST ASSOCIATES
Consulting Engineers



EXPLANATION

(RIVER-CHANNEL DEPOSITS NOT SHOWN)

Qya	YOUNGER ALLUVIUM
QTu	OLDER CONTINENTAL DEPOSITS
Tu	CONSOLIDATED ROCKS
	GEOLOGIC CONTACT
	WATER TABLE

Scale 0 1 2 MILES

GEOLOGY MODIFIED FROM BRIGHT AND OTHERS (1992, PLATE 1) AND UPSON AND THOMASSON (1951)

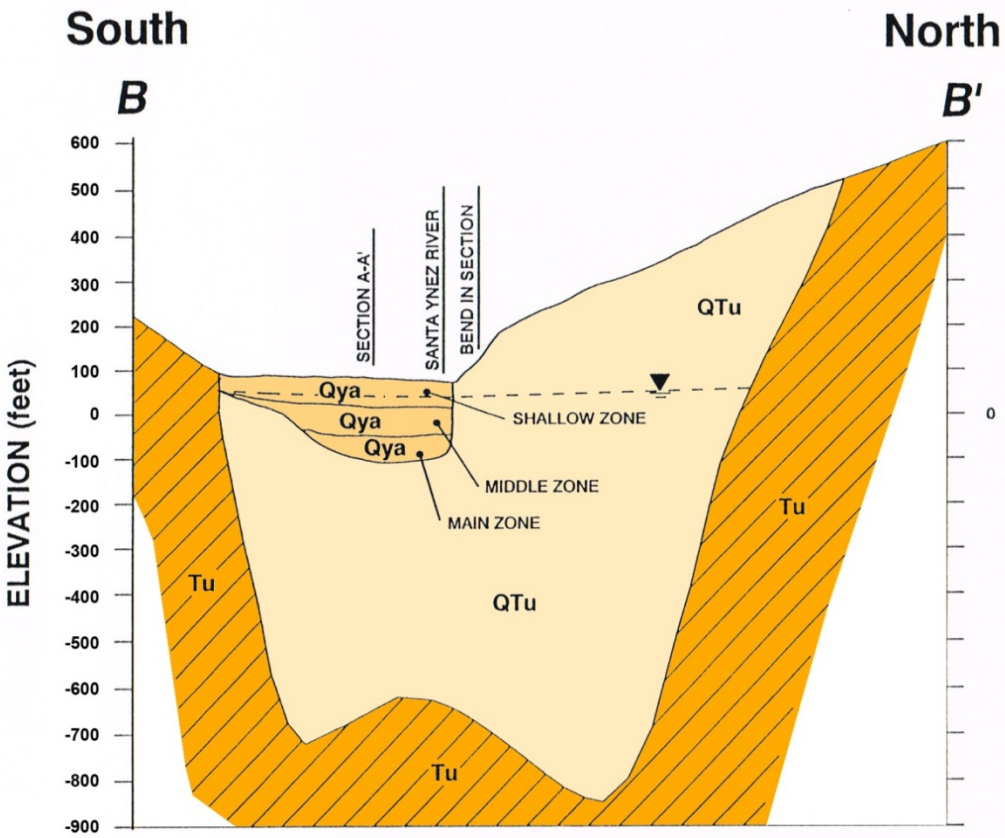
Figure 2-2

City of Lompoc

Groundwater Management Plan

CROSS SECTION A-A' THROUGH LOMPOC GROUNDWATER BASIN

WEST YOST ASSOCIATES
Consulting Engineers



(RIVER-CHANNEL DEPOSITS NOT SHOWN)

Qya — YOUNGER ALLUVIUM

QTu — OLDER CONTINENTAL DEPOSITS

Tu — CONSOLIDATED ROCKS

GEOLOGIC CONTACT

WATER TABLE

Scale 0 1 2 MILES

GEOLOGY MODIFIED FROM BRIGHT AND OTHERS (1992, PLATE 1) AND UPSON AND THOMASSON (1951)

Figure 2-3

City of Lompoc

Groundwater Management Plan

CROSS SECTION B-B' THROUGH LOMPOC GROUNDWATER BASIN

WEST YOST ASSOCIATES Consulting Engineers

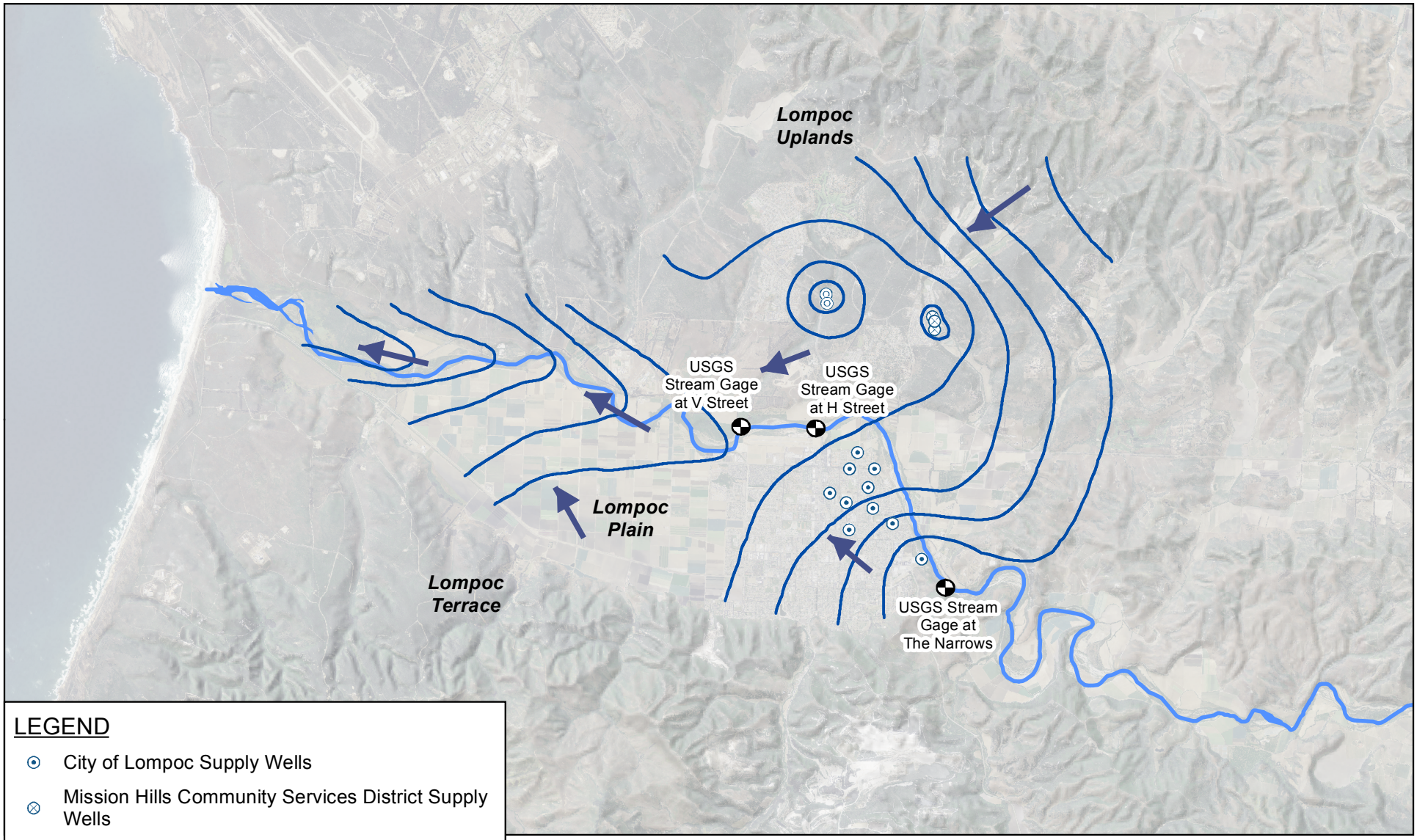


FIGURE 2-4

City of Lompoc
Groundwater Management Plan

GROUNDWATER LEVELS AND DIRECTIONS OF GROUNDWATER FLOW WITHIN LOMPOC GROUNDWATER BASIN

WEST YOST ASSOCIATES
Consulting Engineers

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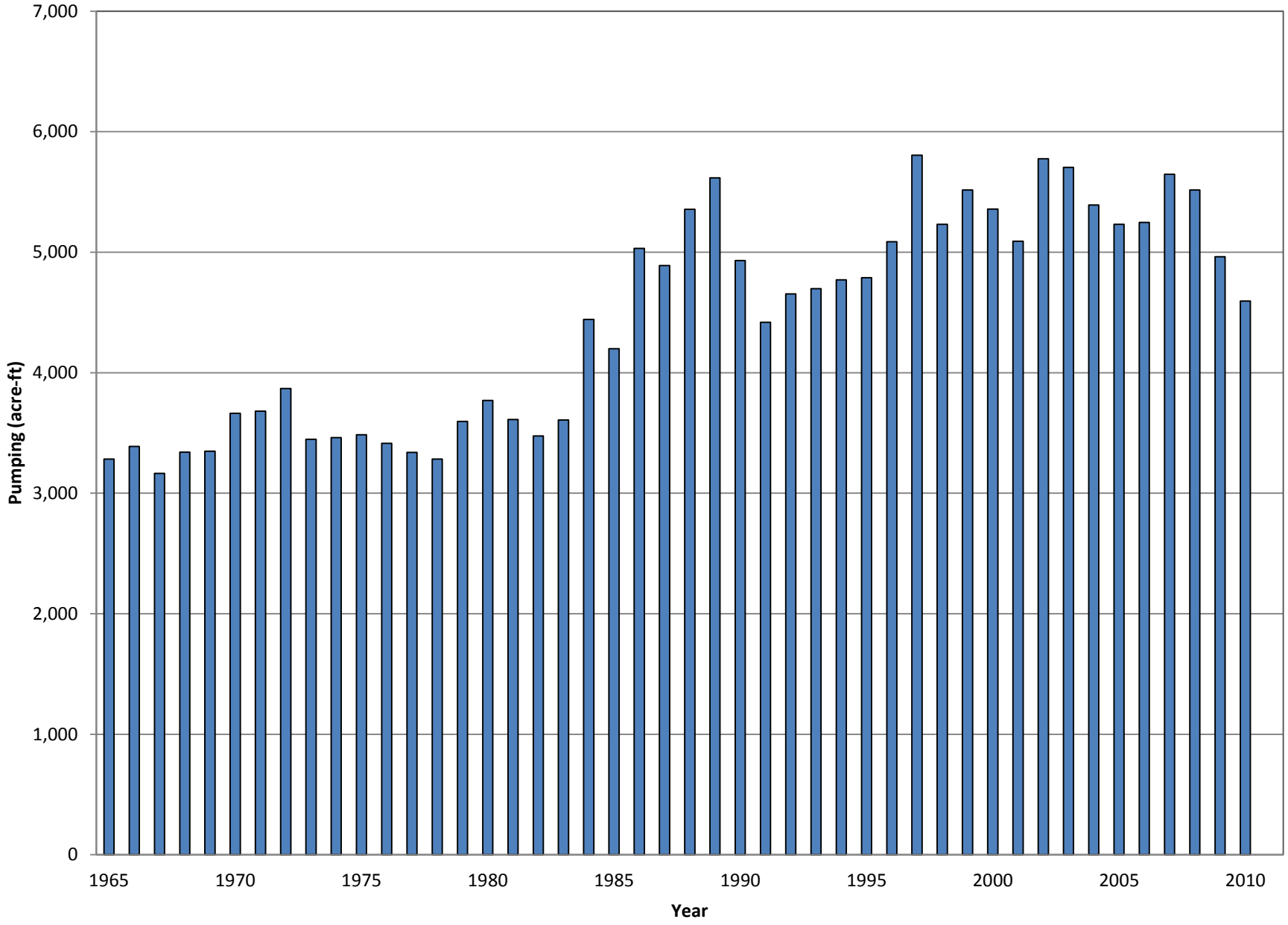

Figure 2-5

City of Lompoc

Groundwater Management Plan

HISTORICAL GROUNDWATER PUMPING BY THE CITY OF LOMPOC

WEST YOST ASSOCIATES
Consulting Engineers

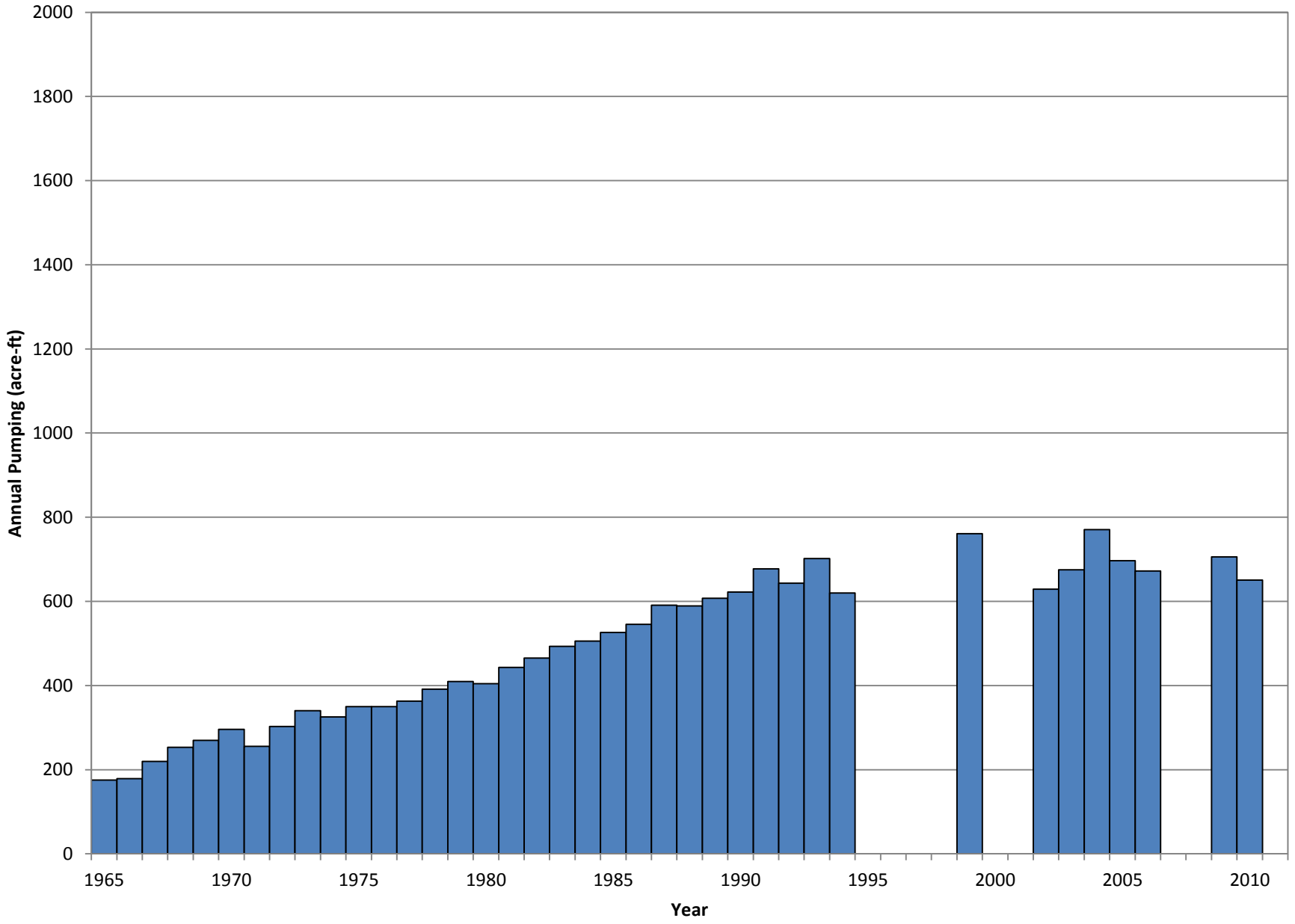

Figure 2-6
City of Lompoc
Groundwater Management Plan
HISTORICAL GROUNDWATER PUMPING
BY MHCSD

WEST YOST ASSOCIATES
Consulting Engineers

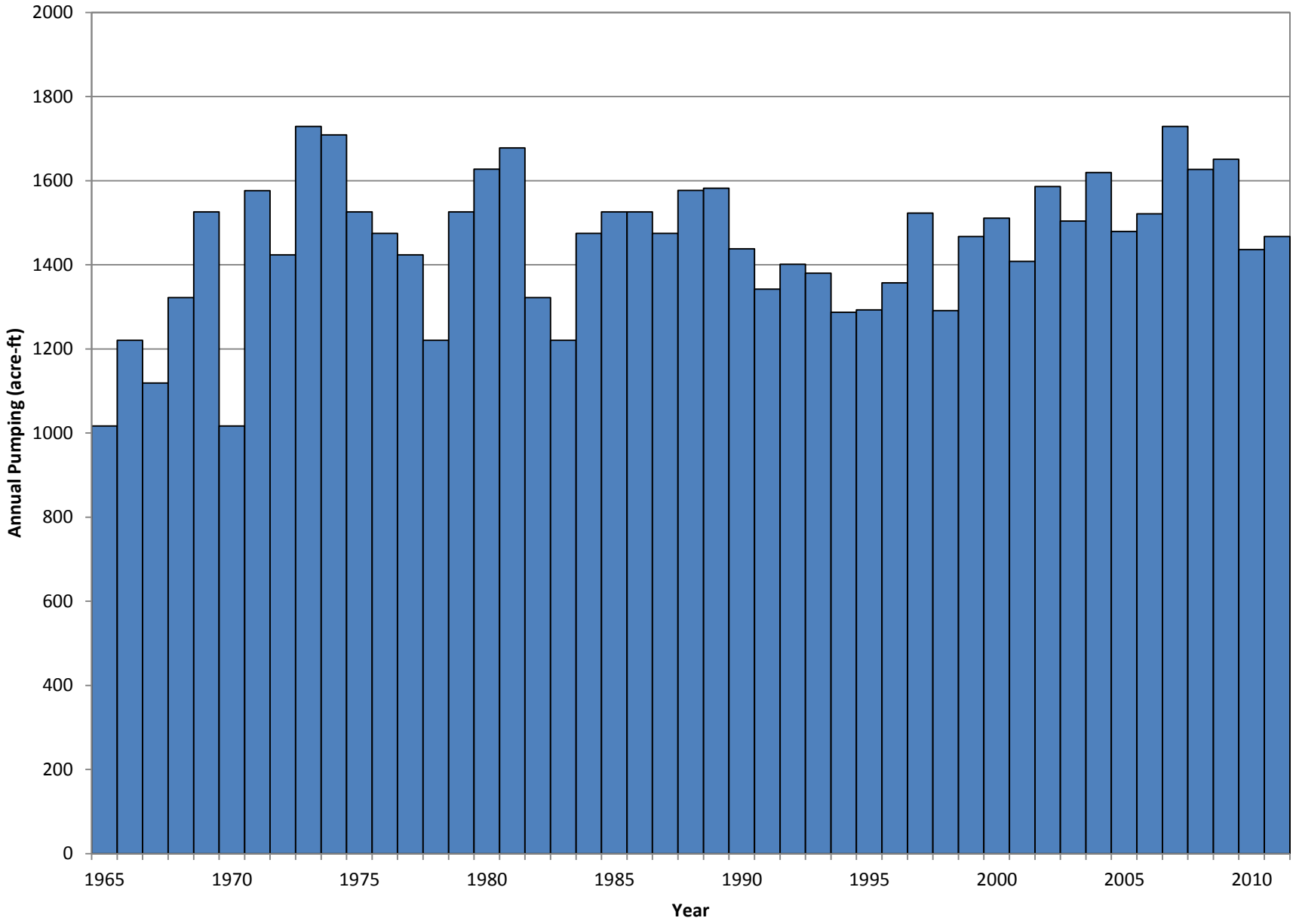

Figure 2-7
City of Lompoc
Groundwater Management Plan
HISTORICAL GROUNDWATER PUMPING
BY VVCSD

WEST YOST ASSOCIATES
Consulting Engineers

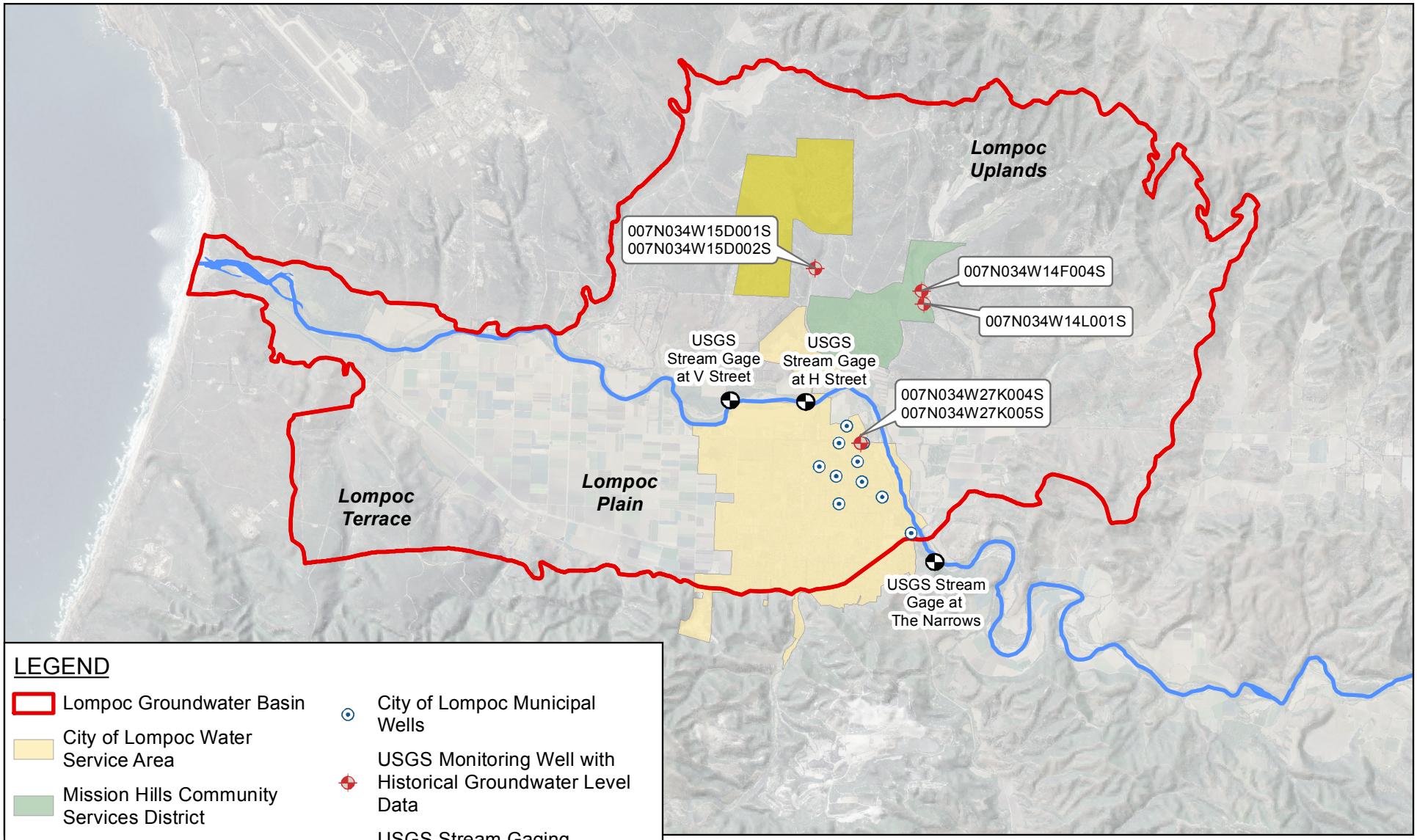

FIGURE 2-8

City of Lompoc
Groundwater Management Plan

MONITORING WELLS WITH HYDROGRAPHS

WEST YOST ASSOCIATES
Consulting Engineers

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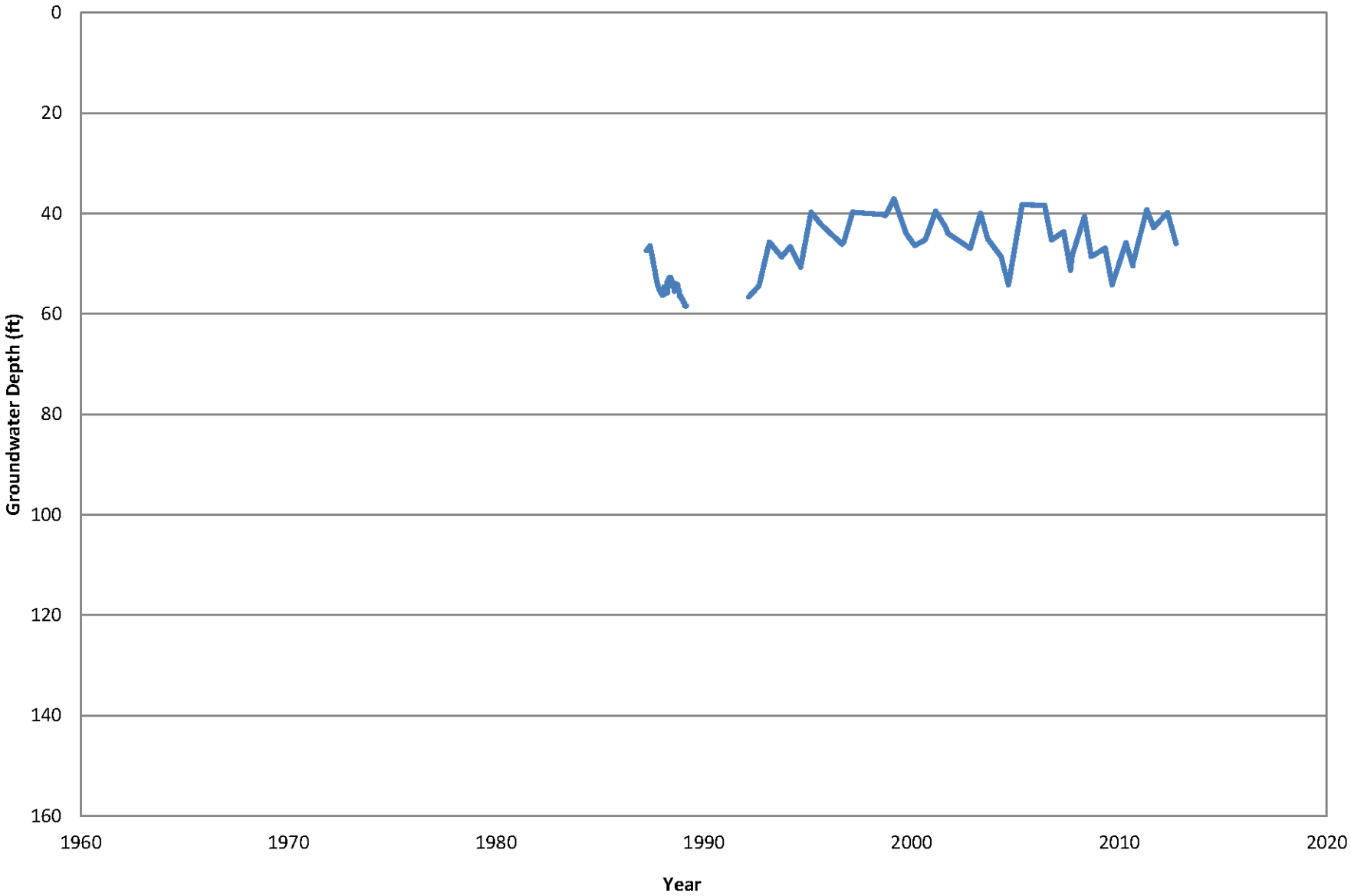
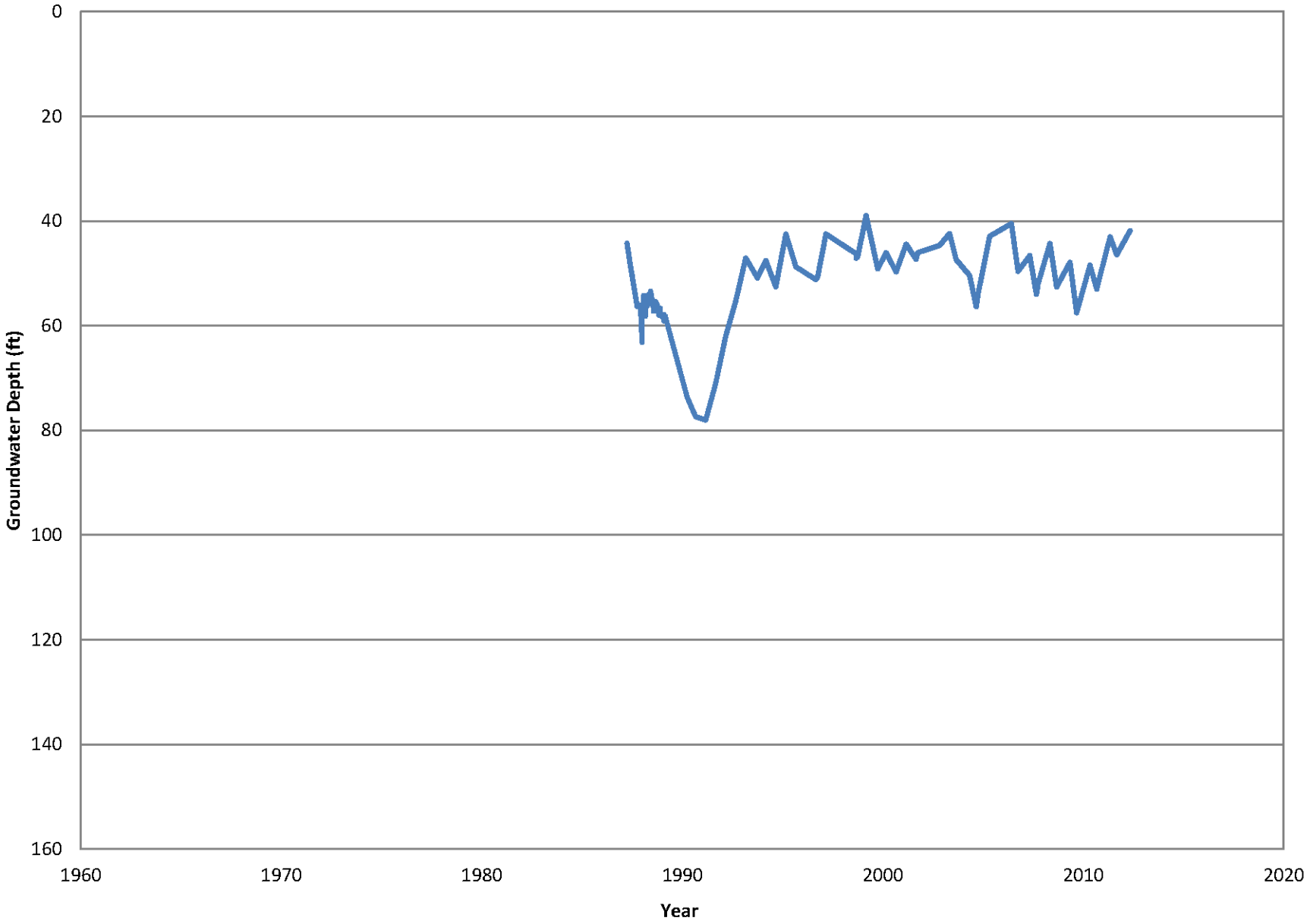


Note: Groundwater levels are monitored per USGS cooperative agreements, as documented in Appendix C.5. The monitoring wells are labeled using the USGS naming conventions specified in the cooperative agreements. The locations of selected wells with hydrographs are shown on Figure 2-8. The complete monitoring network is shown on Figure 3-2.

Figure 2-9
City of Lompoc
Groundwater Management Plan

HISTORICAL GROUNDWATER LEVELS IN WELL 07N34W27K04 NEAR THE CITY OF LOMPOC

WEST YOST ASSOCIATES
Consulting Engineers

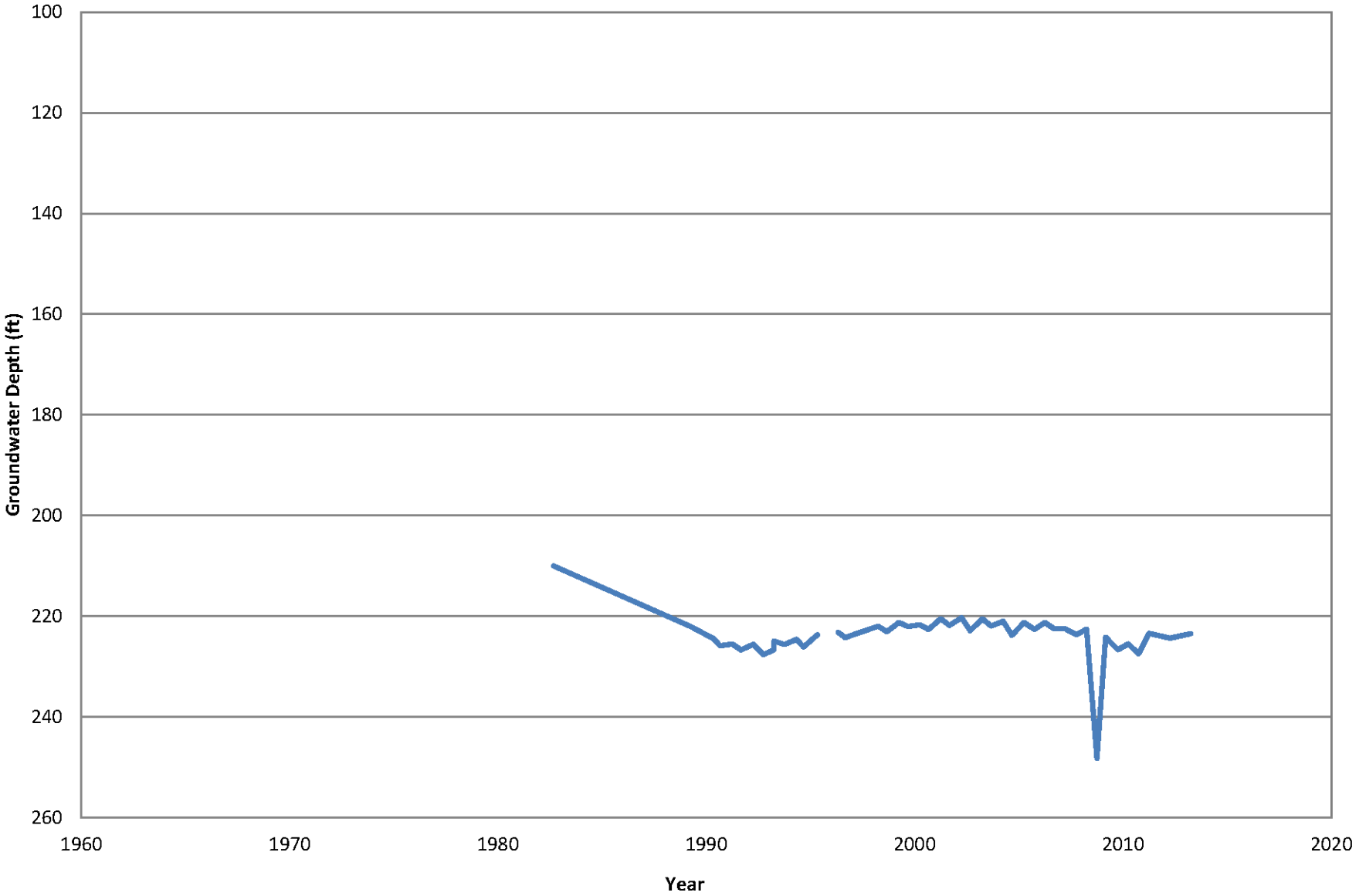


Note: Groundwater levels are monitored per USGS cooperative agreements, as documented in Appendix C.5. The monitoring wells are labeled using the USGS naming conventions specified in the cooperative agreements. The locations of selected wells with hydrographs are shown on Figure 2-8. The complete monitoring network is shown on Figure 3-2.

Figure 2-10
City of Lompoc
Groundwater Management Plan

HISTORICAL GROUNDWATER LEVELS IN
WELL 07N34W27K05 NEAR THE CITY OF LOMPOC

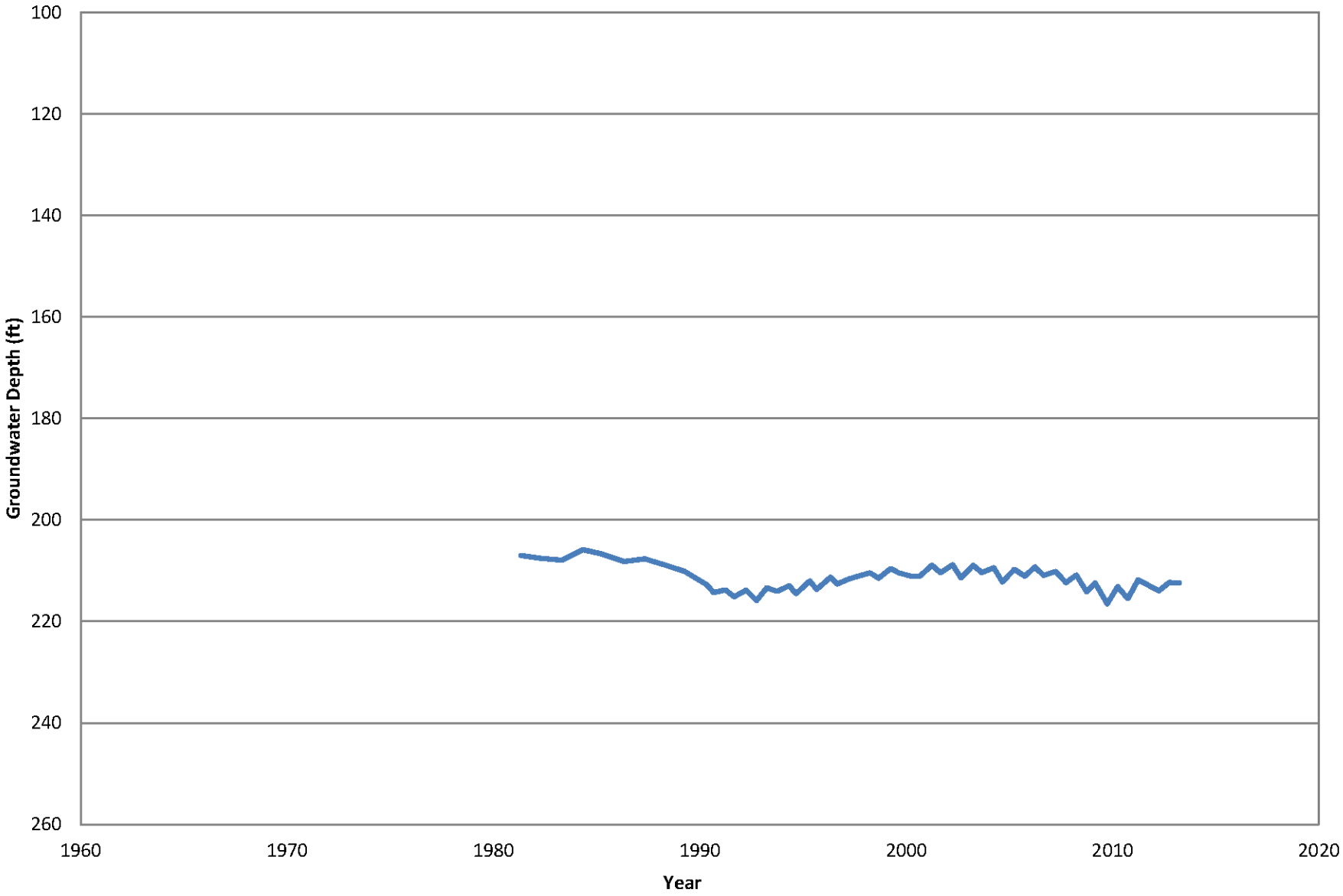
WEST YOST ASSOCIATES
Consulting Engineers



Note: Groundwater levels are monitored per USGS cooperative agreements, as documented in Appendix C.5. The monitoring wells are labeled using the USGS naming conventions specified in the cooperative agreements. The locations of selected wells with hydrographs are shown on Figure 2-8. The complete monitoring network is shown on Figure 3-2.

Figure 2-11
City of Lompoc
Groundwater Management Plan
HISTORICAL GROUNDWATER LEVELS IN WELL 07N34W14F04 NEAR MHCSD

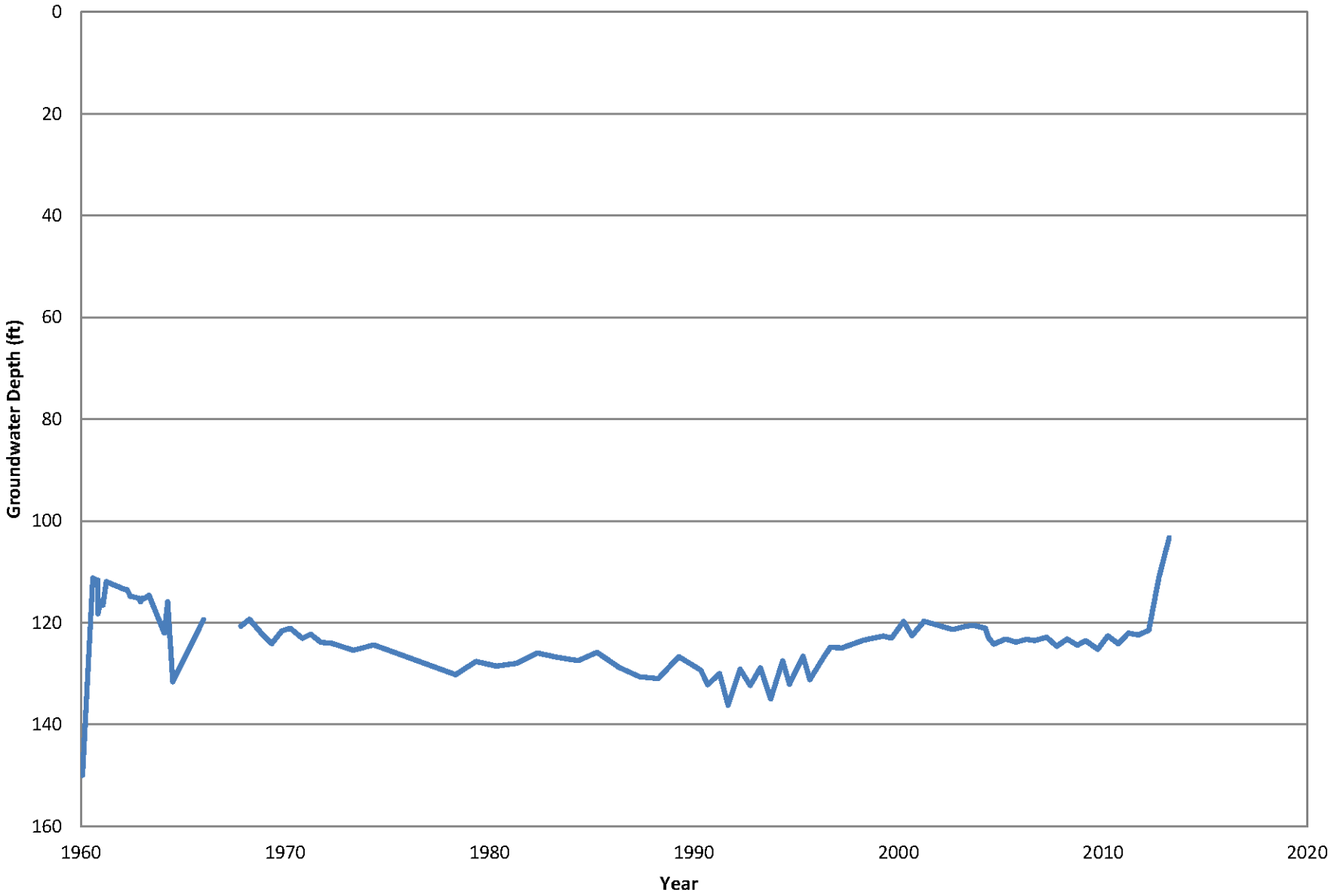
WEST YOST ASSOCIATES
Consulting Engineers



Note: Groundwater levels are monitored per USGS cooperative agreements, as documented in Appendix C.5. The monitoring wells are labeled using the USGS naming conventions specified in the cooperative agreements. The locations of selected wells with hydrographs are shown on Figure 2-8. The complete monitoring network is shown on Figure 3-2.

Figure 2-12
City of Lompoc
Groundwater Management Plan
HISTORICAL GROUNDWATER LEVELS IN WELL 07N34W14L01 NEAR MHCSD

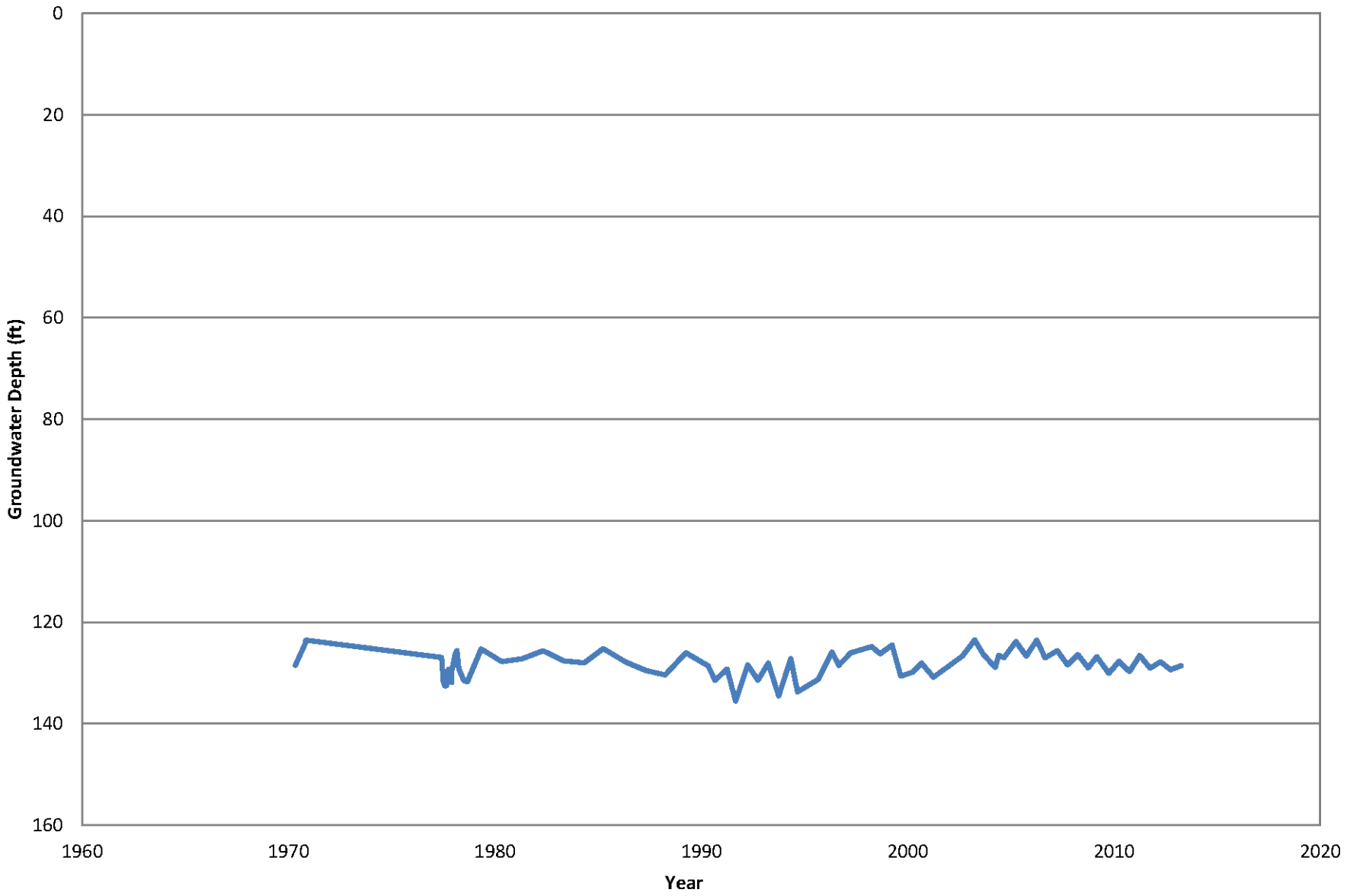
WEST YOST ASSOCIATES
Consulting Engineers



Note: Groundwater levels are monitored per USGS cooperative agreements, as documented in Appendix C.5. The monitoring wells are labeled using the USGS naming conventions specified in the cooperative agreements. The locations of selected wells with hydrographs are shown on Figure 2-8. The complete monitoring network is shown on Figure 3-2.

Figure 2-13
City of Lompoc
Groundwater Management Plan
HISTORICAL GROUNDWATER LEVELS IN WELL 07N34W15D01 NEAR VVCSD

WEST YOST ASSOCIATES
Consulting Engineers



Note: Groundwater levels are monitored per USGS cooperative agreements, as documented in Appendix C.5. The monitoring wells are labeled using the USGS naming conventions specified in the cooperative agreements. The locations of selected wells with hydrographs are shown on Figure 2-8. The complete monitoring network is shown on Figure 3-2.

Figure 2-14
City of Lompoc
Groundwater Management Plan

HISTORICAL GROUNDWATER LEVELS IN WELL 07N34W15D02 NEAR VVCSD

WEST YOST ASSOCIATES
Consulting Engineers

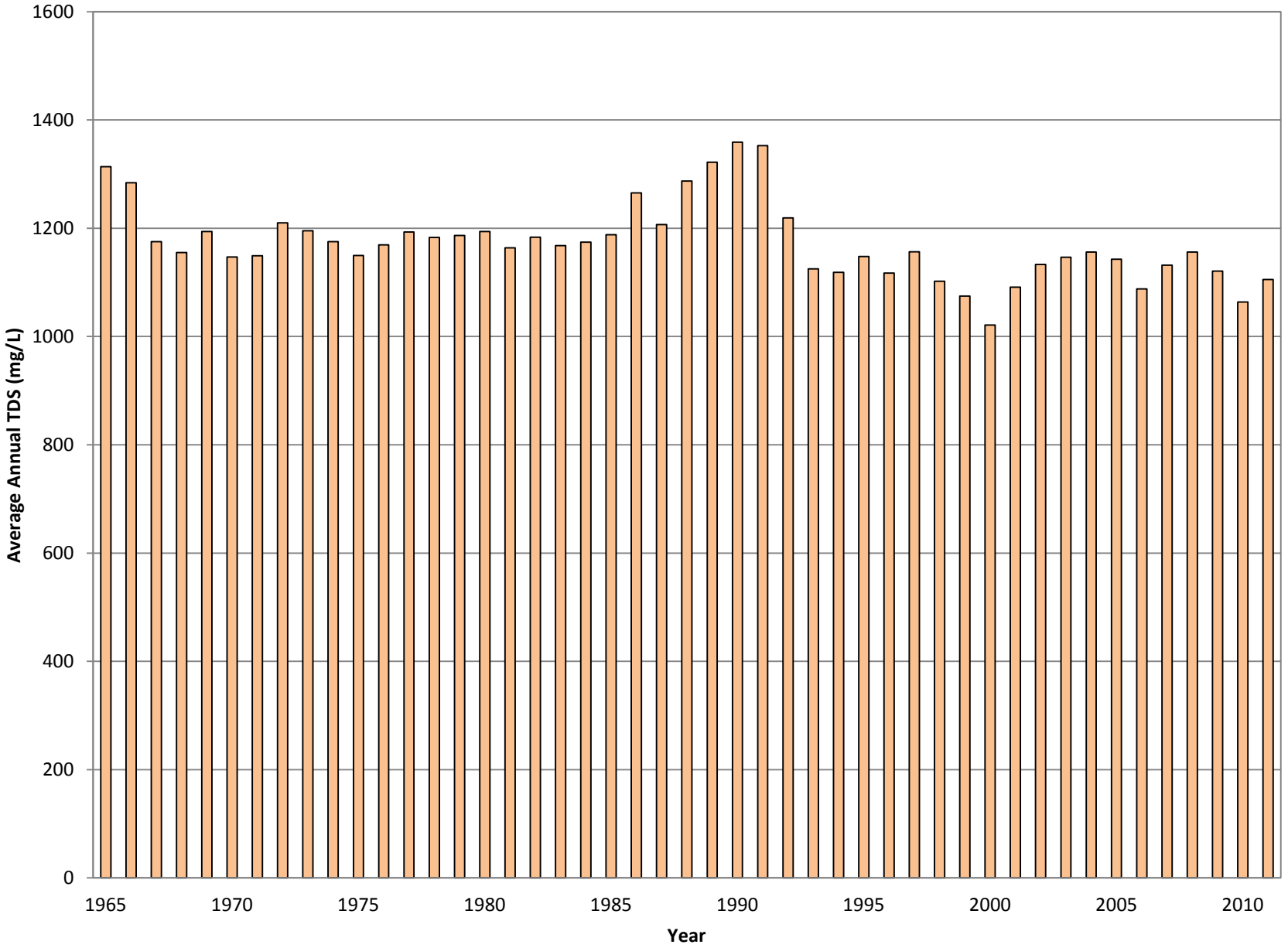
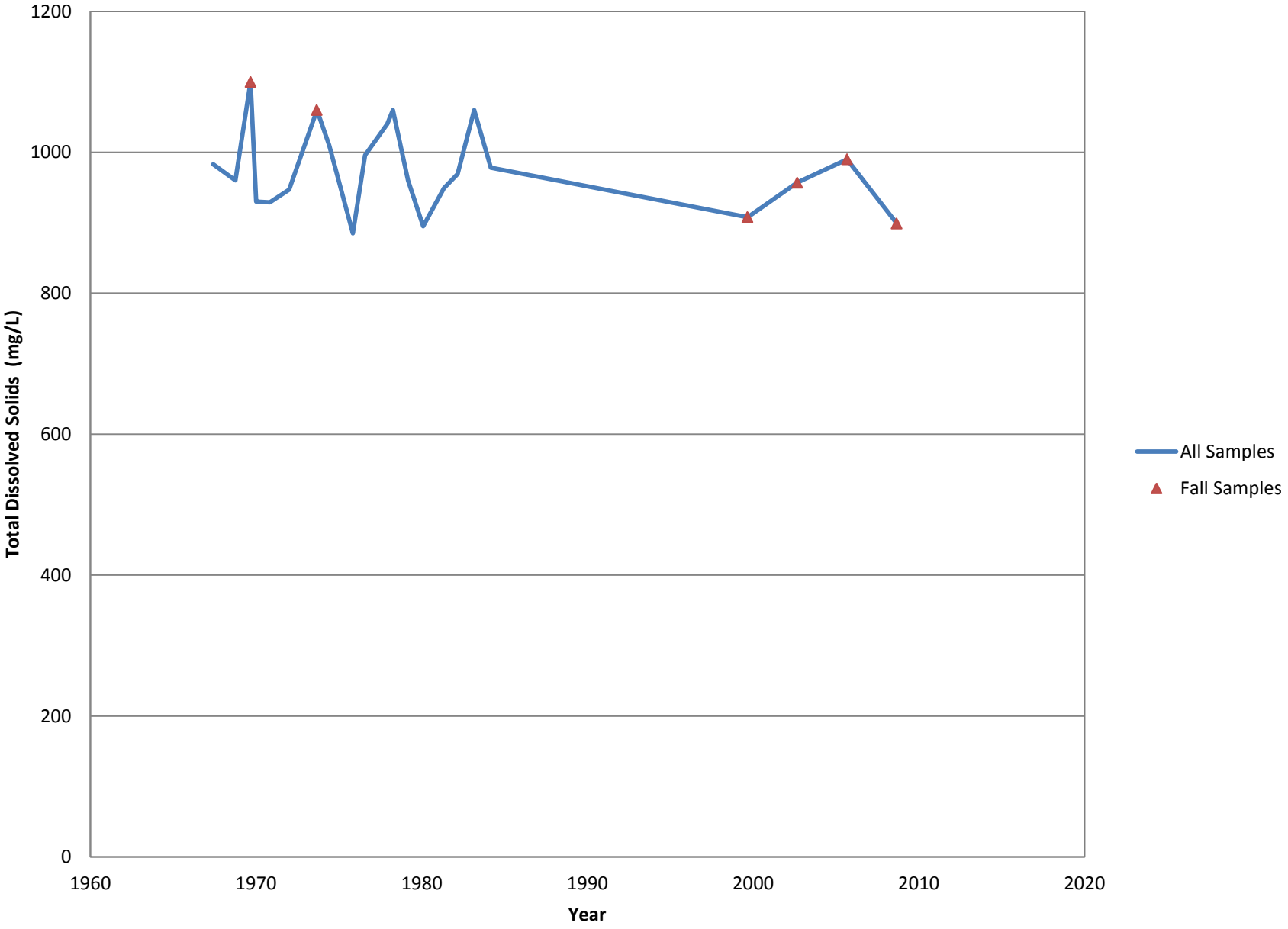


Figure 2-15
City of Lompoc
Groundwater Management Plan

HISTORICAL AVERAGE GROUNDWATER
DISSOLVED SOLIDS DELIVERED TO
CITY OF LOMPOC WATER TREATMENT PLANT

WEST YOST ASSOCIATES
Consulting Engineers



Note: Groundwater quality is measured per USGS cooperative agreements, as documented in Appendix C.5. The monitoring wells are labeled using the USGS naming conventions specified in the cooperative agreements. The complete monitoring network is shown on Figure 3-2.

Figure 2-16
City of Lompoc
Groundwater Management Plan

HISTORICAL GROUNDWATER DISSOLVED SOLIDS IN WELL 07N34W34A04 NEAR CITY OF LOMPOC

WEST YOST ASSOCIATES
Consulting Engineers

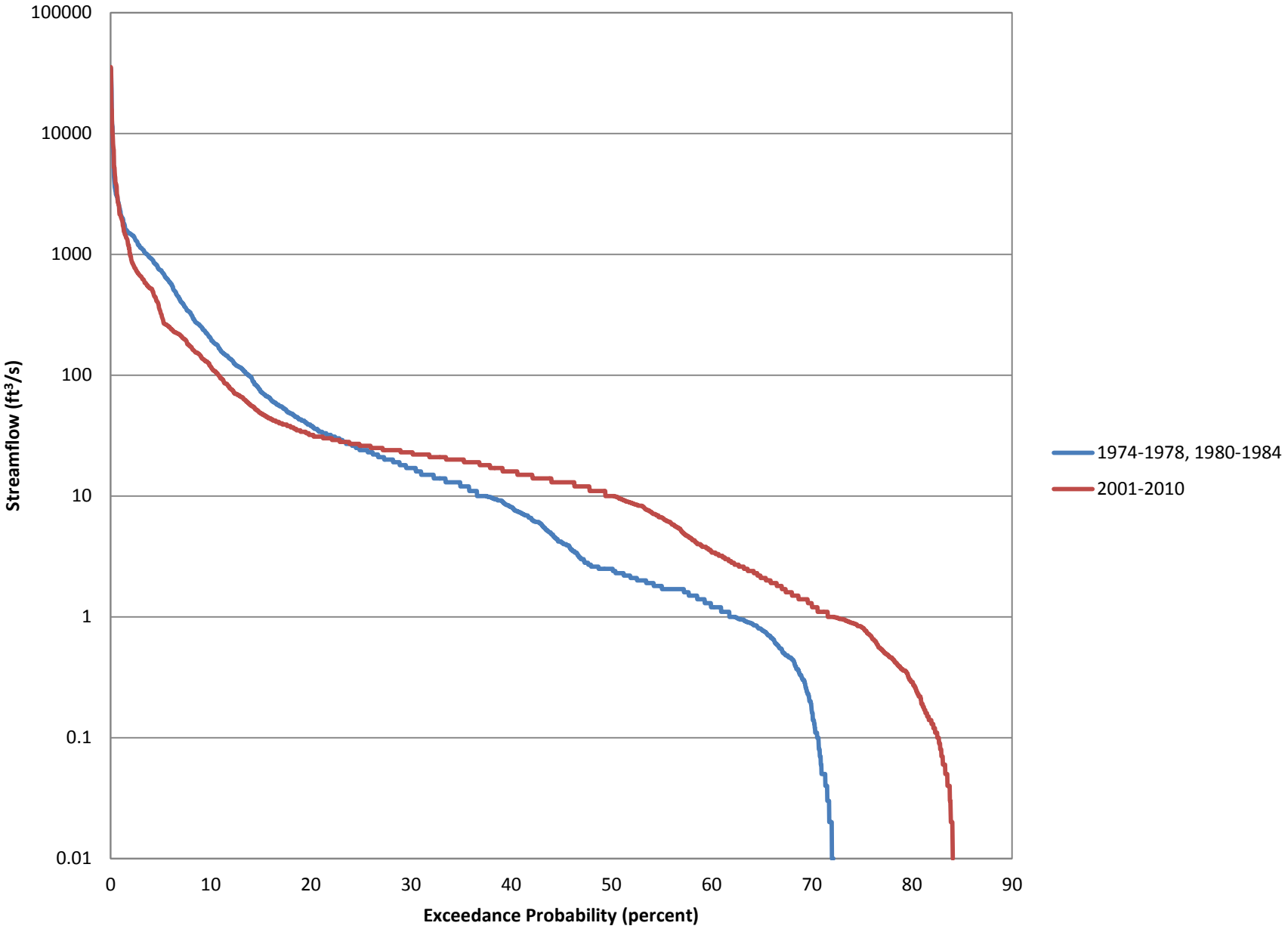


Figure 2-17
City of Lompoc
Groundwater Management Plan
HISTORICAL FLOW-DURATION
RELATIONS FOR SANTA YNEZ RIVER
STREAM FLOW AT THE NARROWS

WEST YOST ASSOCIATES
Consulting Engineers

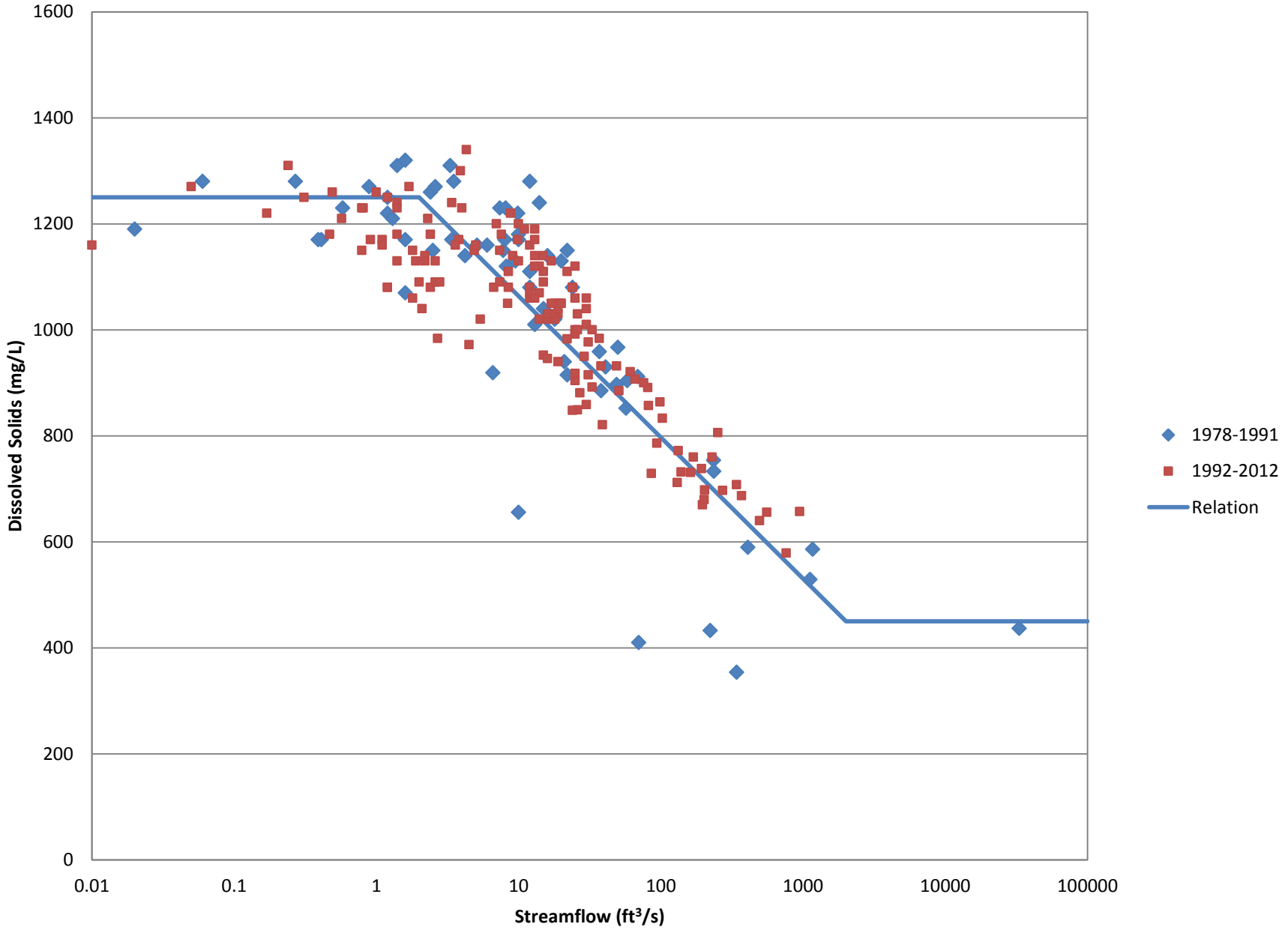


Figure 2-18

City of Lompoc

Groundwater Management Plan

RELATION BETWEEN SANTA YNEZ RIVER STREAM FLOW AT THE NARROWS AND STREAM FLOW DISSOLVED SOLIDS

WEST YOST ASSOCIATES
Consulting Engineers

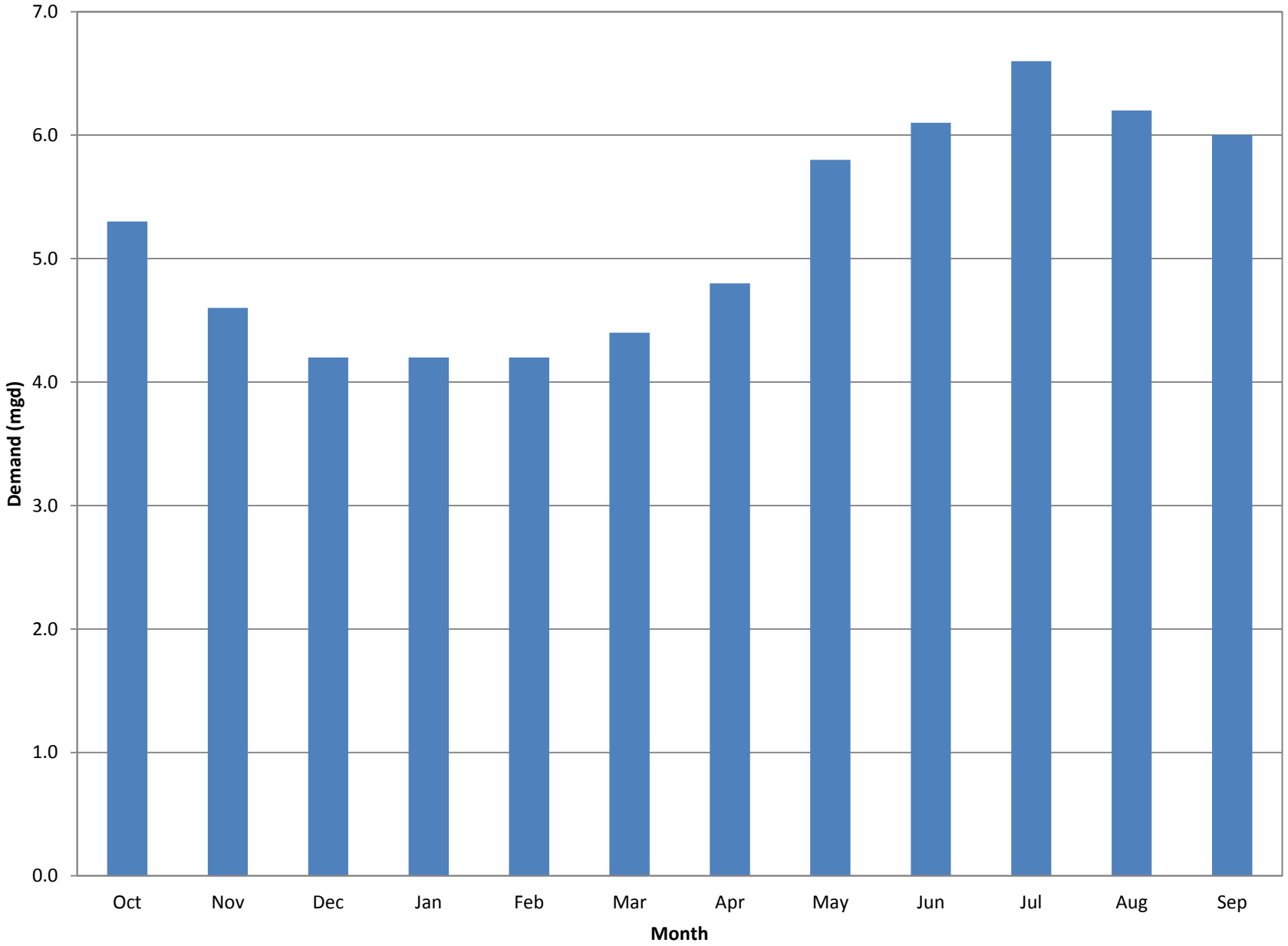


Figure 2-19
City of Lompoc
Groundwater Management Plan

PROJECTED 2030 PUMPING FOR CITY OF LOMPOC

WEST YOST ASSOCIATES
Consulting Engineers

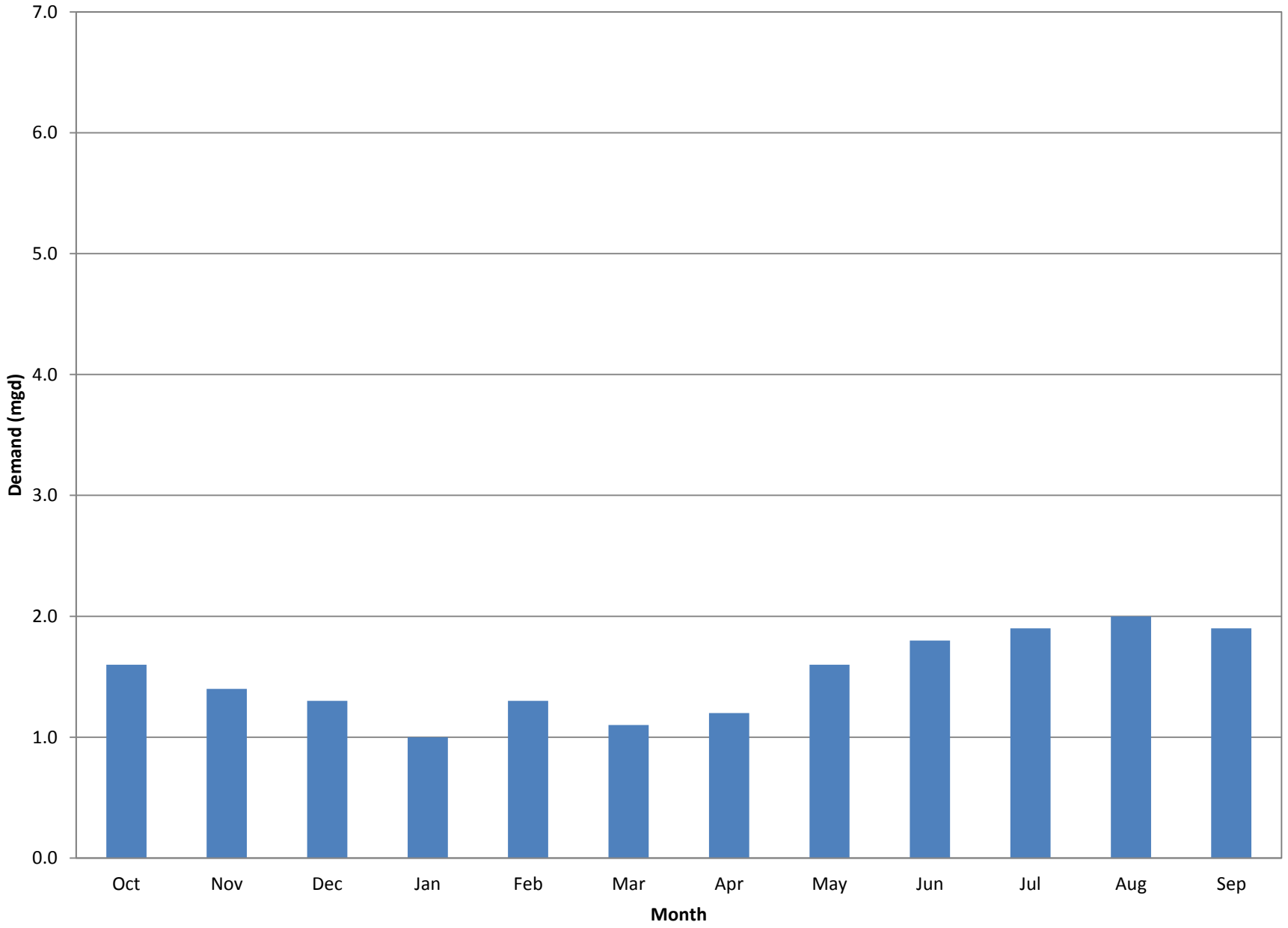


Figure 2-20
City of Lompoc
Groundwater Management Plan
PROJECTED PUMPING FOR MHCSD AT FULL DEVELOPMENT

WEST YOST ASSOCIATES
Consulting Engineers

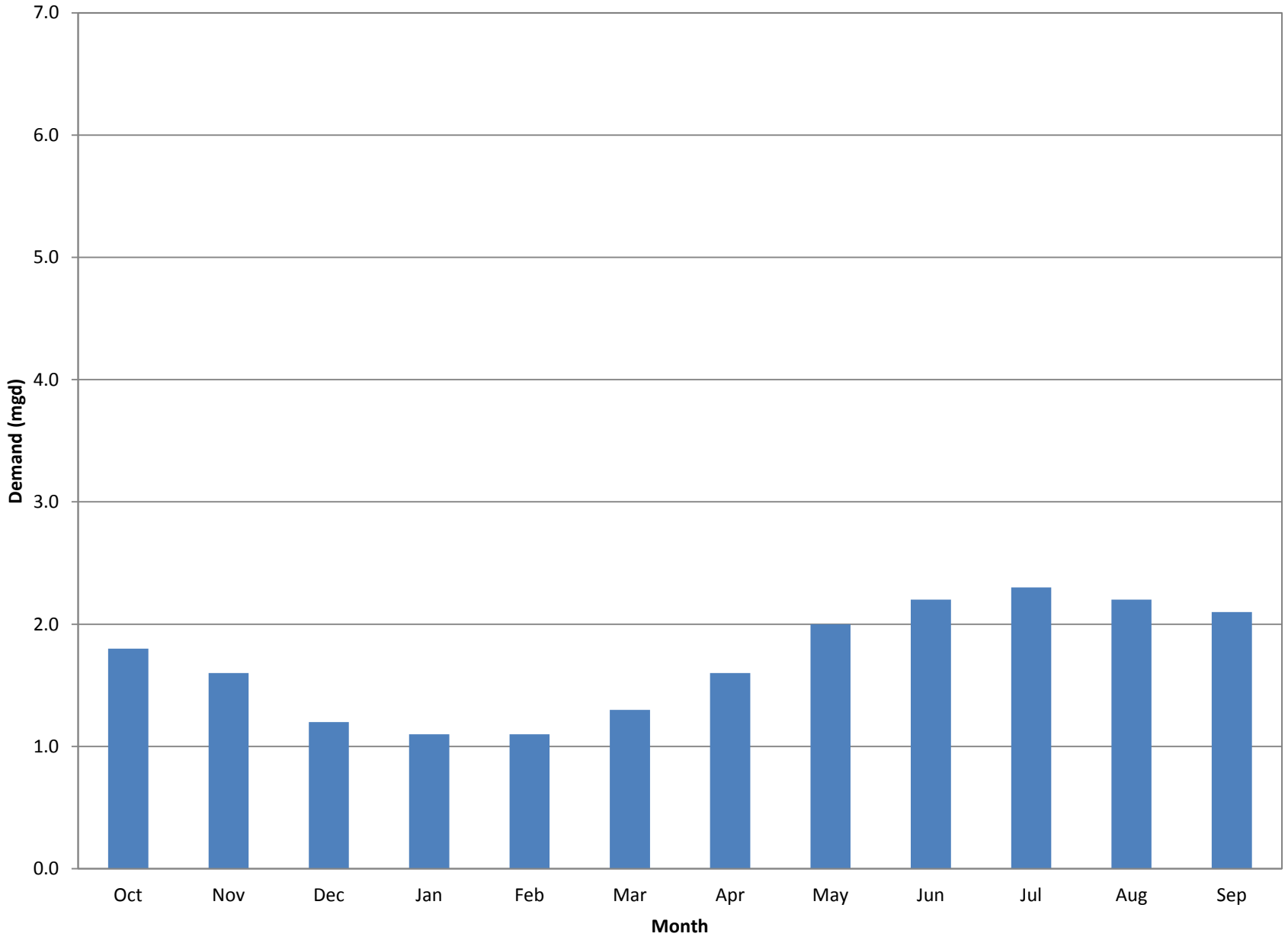
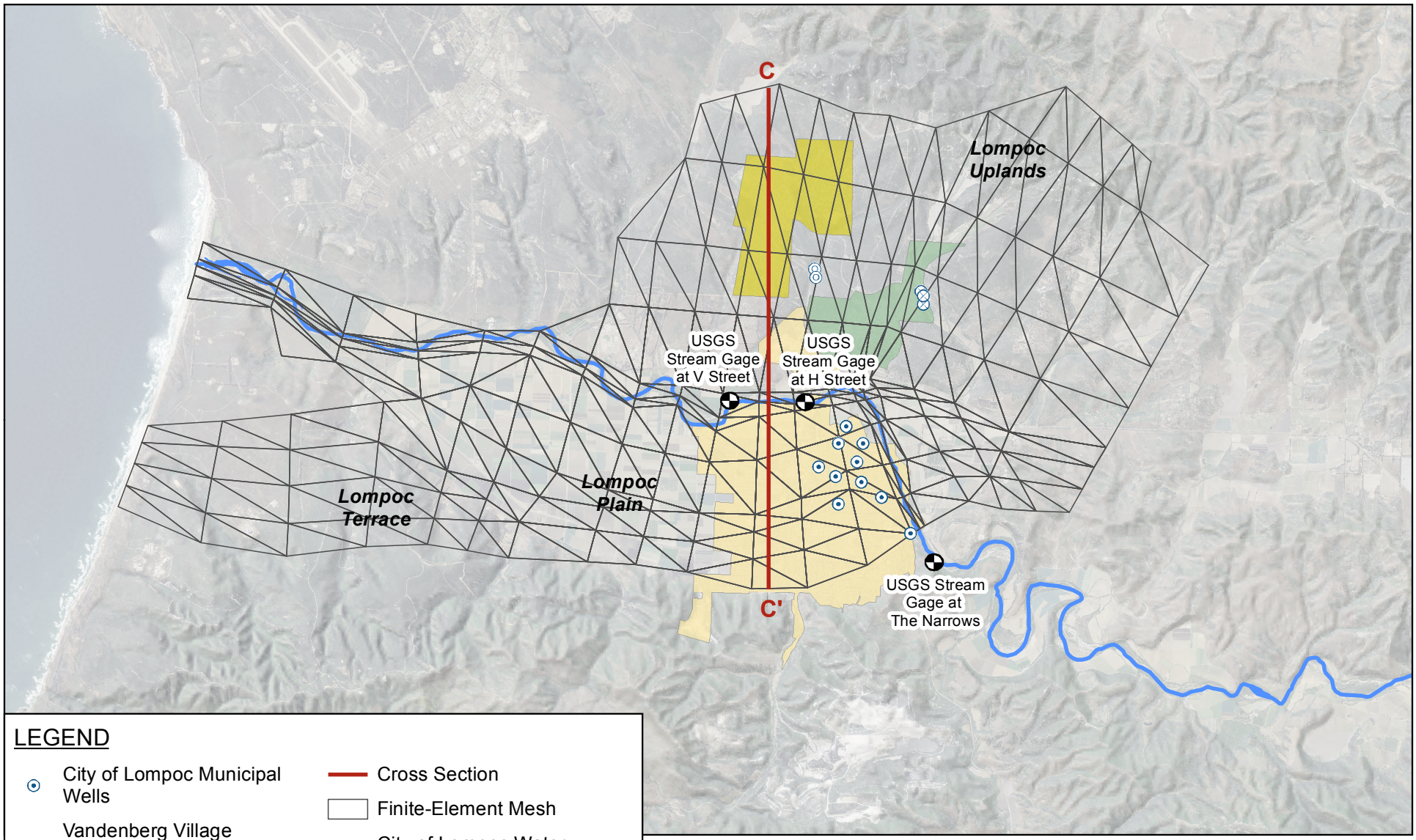


Figure 2-21
City of Lompoc
Groundwater Management Plan

PROJECTED PUMPING FOR VVCSD AT FULL DEVELOPMENT

WEST YOST ASSOCIATES
Consulting Engineers



LEGEND

- City of Lompoc Municipal Wells
- Vandenberg Village Community Services District Wells
- Mission Hills Community Services District Wells
- USGS Stream Gaging Stations
- Santa Ynez River
- Cross Section
- Finite-Element Mesh
- City of Lompoc Water Service Area
- Mission Hills Community Services District
- Vandenberg Village Community Services District

N

0 5,000 10,000

Scale in Feet

FIGURE 2-22

City of Lompoc
Groundwater Management Plan

FINITE-ELEMENT MESH FOR HCI REGIONAL GROUNDWATER MODEL

WEST YOST ASSOCIATES
Consulting Engineers

Last Saved: 9/5/2013 10:31:52 AM areimer, N:\Clients\473 City of Lompoc\00-11-02 Groundwater Basin MP\GIS\Figures\Figures for GWMP\September 2013\Fig222_FiniteModelMesh.mxd

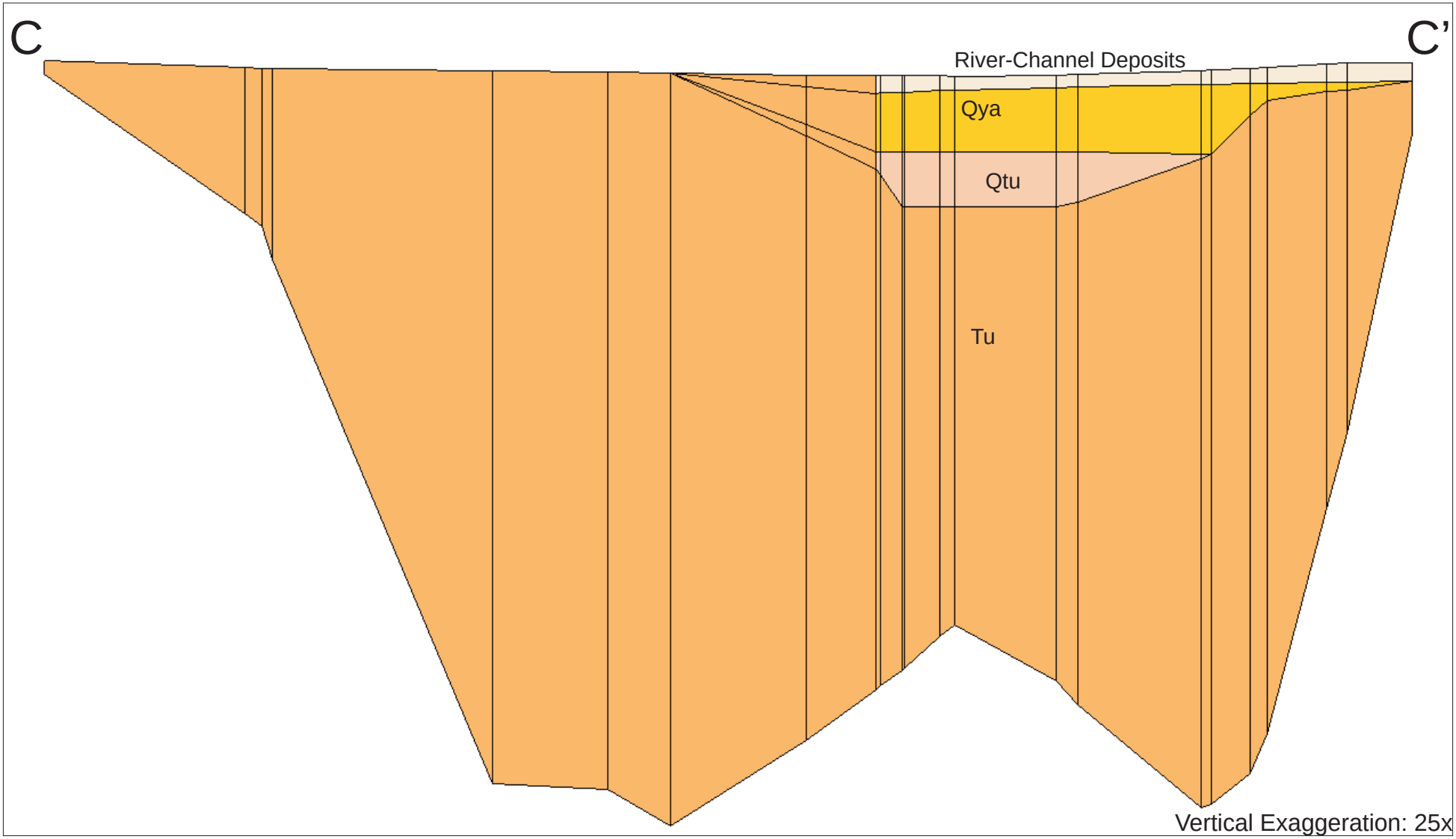


FIGURE 2-23

City of Lompoc
Groundwater Management Plan
CROSS SECTION C-C' THROUGH FINITE-ELEMENT MESH FOR HCI REGIONAL GROUNDWATER MODEL

WEST YOST ASSOCIATES
Consulting Engineers

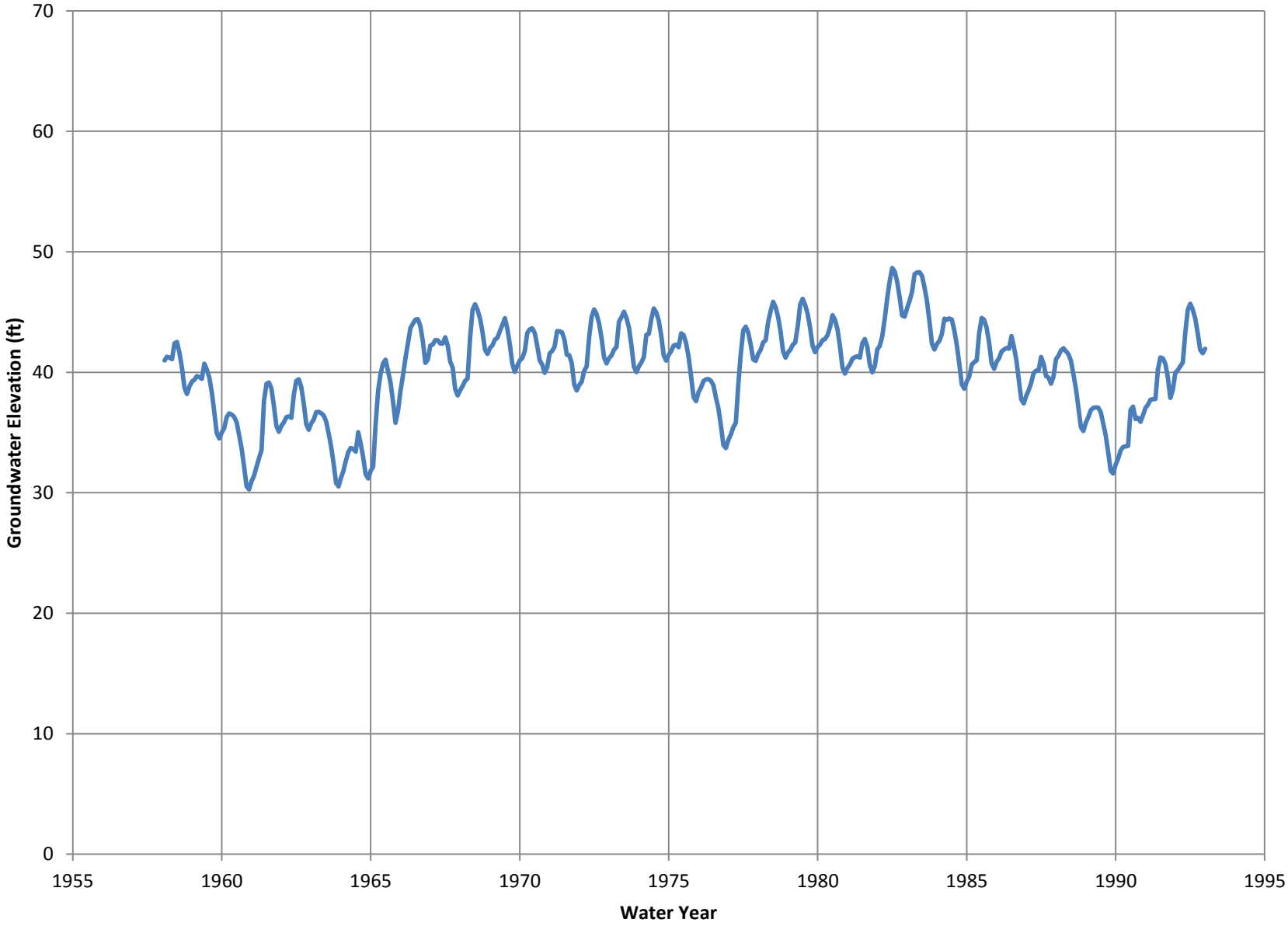


Figure 2-24

City of Lompoc

Groundwater Management Plan

MONTHLY GROUNDWATER LEVELS IN CITY WELL FIELD AS SIMULATED BY THE HCI REGIONAL GROUNDWATER MODEL FOR PROJECTED CITY, MHCSD, AND VVCSD PUMPING

WEST YOST ASSOCIATES
Consulting Engineers

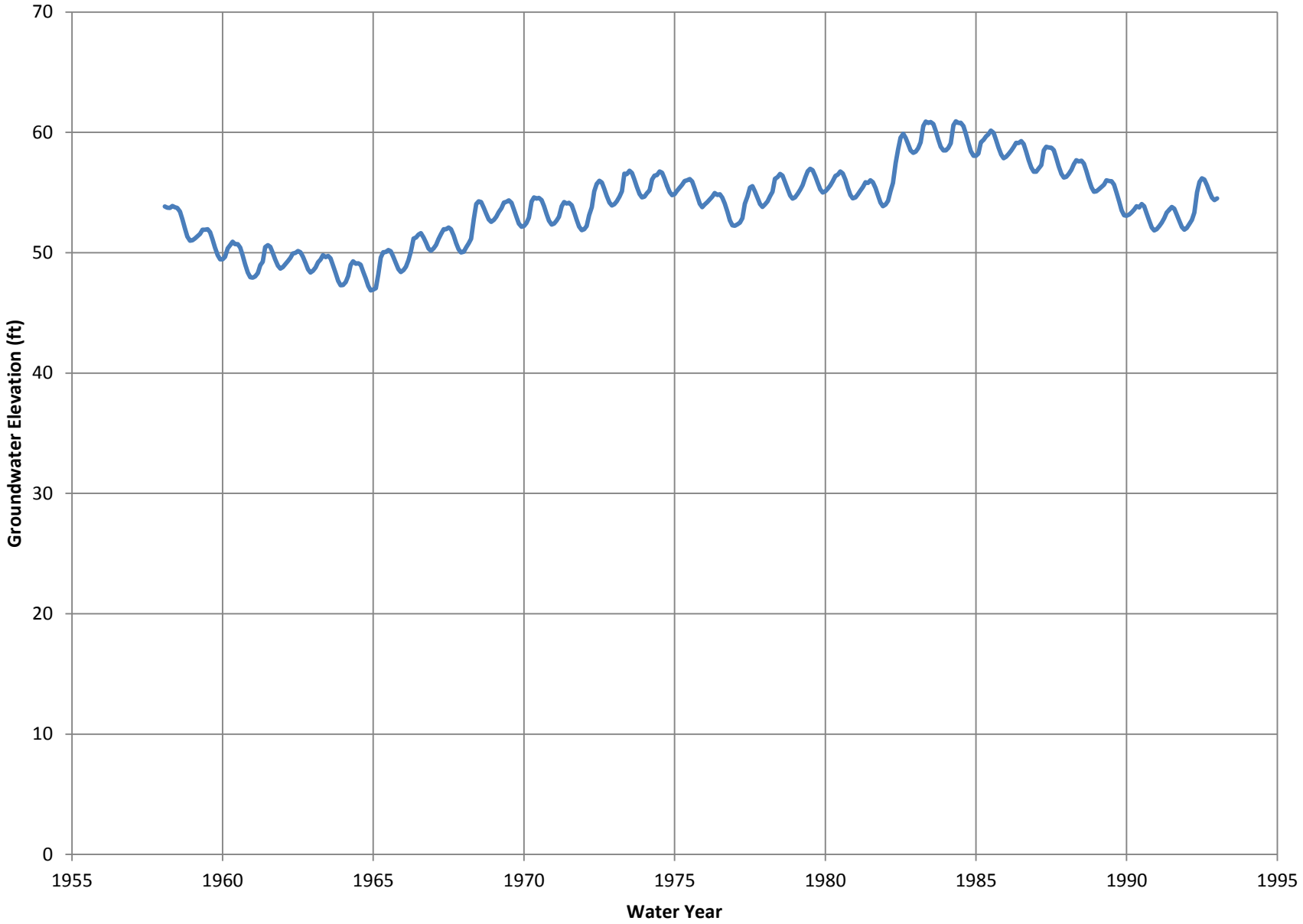


Figure 2-25

City of Lompoc

Groundwater Management Plan

MONTHLY GROUNDWATER LEVELS IN MHCSD WELL FIELD AS SIMULATED BY THE HCI REGIONAL GROUNDWATER MODEL FOR PROJECTED CITY, MHCSD, AND VVCSD PUMPING

WEST YOST ASSOCIATES
Consulting Engineers

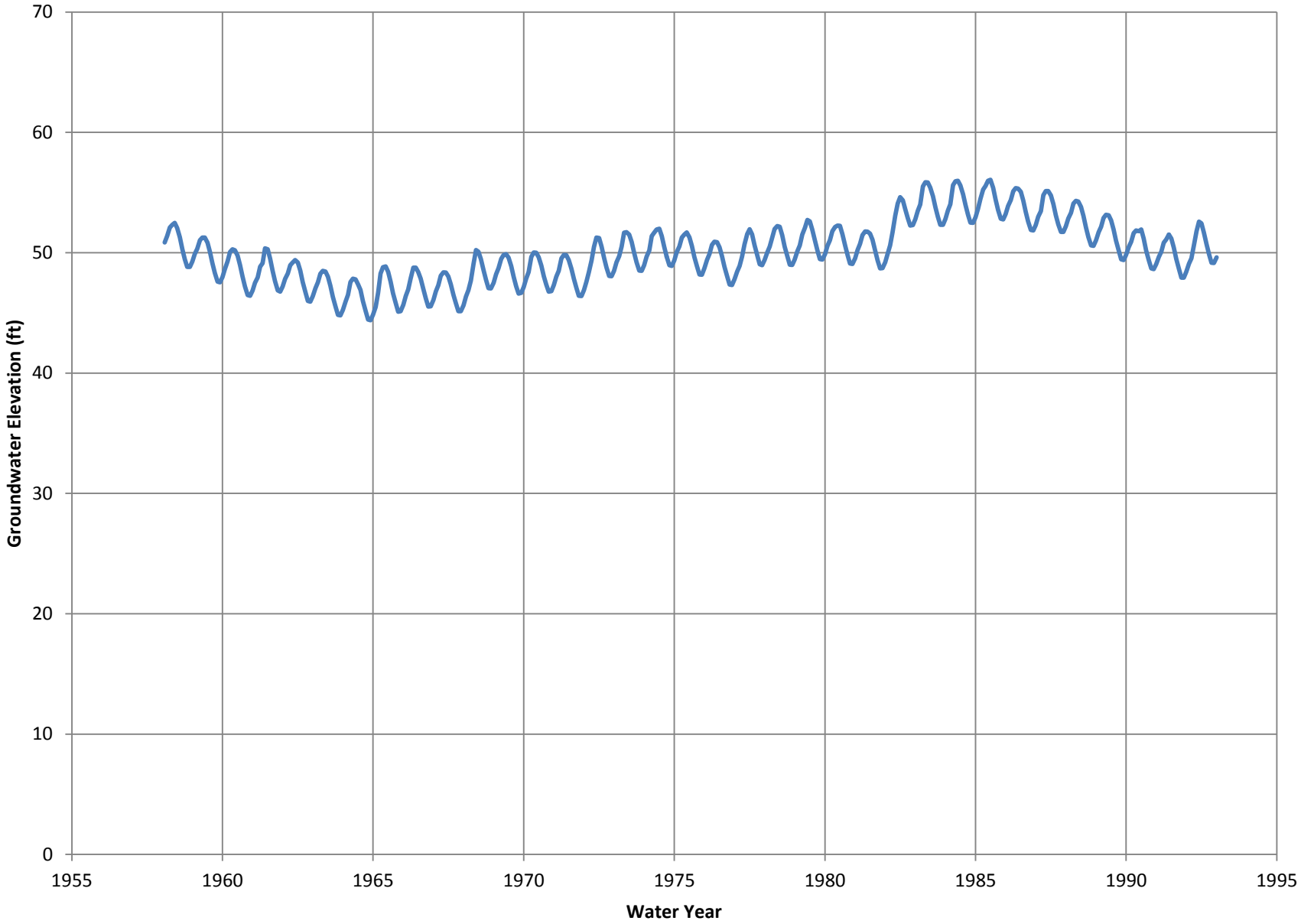


Figure 2-26

City of Lompoc

Groundwater Management Plan

MONTHLY GROUNDWATER LEVELS IN VVCSD WELL FIELD AS SIMULATED BY THE HCI REGIONAL GROUNDWATER MODEL FOR PROJECTED CITY, MHCSD, AND VVCSD PUMPING

WEST YOST ASSOCIATES
Consulting Engineers

This section describes the City's overall groundwater management goal, and BMOs.

3.1 OVERALL GROUNDWATER MANAGEMENT GOAL

The City's overall groundwater management goal is to work cooperatively with basin stakeholders and the public to maintain a sustainable, reliable, high-quality groundwater supply for beneficial use in the City service area and surrounding areas.

3.2 BASIN MANAGEMENT OBJECTIVES

BMOs have been developed to support the City's overall groundwater management goal. BMOs have been established to address the following five areas:

BMO-01 – Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users

BMO-02 – Maintain groundwater elevations that result in a net benefit to basin groundwater users

BMO-03 – Minimize the risk of future significant impact due to inelastic land subsidence

BMO-04 – Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping

BMO-05 – Protect against the risk of impacts to groundwater levels and groundwater quality caused by changes in surface water flows or surface water quality

BMO-01 – Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users. Groundwater quality within the City's service area is affected by both the groundwater recharge that occurs from the Santa Ynez River and impacts from point and nonpoint contaminant sources.

The principal source of recharge to the Lompoc Groundwater Basin is recharge from the Santa Ynez River stream flow. The river enters the Lompoc Valley at the Narrows, and the stream flow produces recharge from that point downstream. However, recharge occurs mostly within the reach from the Narrows to the V Street. The Santa Ynez River stream flow contains high dissolved solids, and the recharge from stream flow is a significant source of salinity within the Lompoc Groundwater Basin. While the stream flow salinity occurs mostly from natural processes within the Santa Ynez River watershed, the stream flow salinity at the Narrows is affected by the operation of Cachuma Reservoir. That operation is regulated by State Board Order 89-18, the Cachuma Project Settlement Agreement, and the NMFS BO. The historical effect of the State Board Order and the Settlement Agreement has been to reduce recharge salinity and to improve groundwater quality. There is, however, a level of uncertainty regarding future Cachuma Reservoir operations resulting from possible revisions to State Board Order 89-18 and the BO. Stream flow salinity and the corresponding recharge salinity can be impacted by upstream water-use and wastewater-disposal practices within the Santa Ynez River watershed area between Bradbury Dam and the Narrows.

Groundwater within the City's service area can also be affected by nonpoint sources of nitrate and salinity, and localized point sources of anthropogenic contaminants. Potential nonpoint sources include fertilizers and other chemicals used in landscape maintenance, salinity in irrigation water, and leakage from sanitary sewers. Point sources include chemical releases from underground storage tanks and other sources.

The City supports three water-quality monitoring programs. Firstly, the City cooperates with other local agencies in monitoring Santa Ynez River stream flow and salinity at multiple locations, Secondly, the City cooperates with other local agencies in monitoring groundwater quality at selected wells within the Lompoc Groundwater Basin, where the USGS collects or compiles groundwater salinity data within the Lompoc Plain and Uplands. Thirdly, the City collects and analyzes groundwater-quality samples from its active production wells to comply with applicable standards in Title 22 of the CWC. The DPH Title 22 program specifies the constituents to be tested, the detection limits for these constituents and reporting requirements.

The City's objectives with respect to groundwater quality are to: (1) promote operation of Cachuma Reservoir that produces the optimal stream flow salinity at the Narrows with respect to groundwater recharge from the Santa Ynez River; (2) promote water-use and wastewater-disposal practices throughout the Santa Ynez River watershed that protect Santa Ynez River stream flow quality at the Narrows; and (3) encourage landscaping practices that minimize discharges of nutrients and other chemicals to the underlying groundwater system. These objectives are to be achieved by: (1) encouraging best management practices; (2) being an active stakeholder regarding water-resources issues throughout the Santa Ynez River watershed; (3) maintaining stream flow and groundwater monitoring within the Lompoc Groundwater Basin; (4) cooperating with other agencies in maintaining stream flow monitoring throughout the Santa Ynez River watershed; (5) periodically analyzing the compiled data for adverse trends; and (6) using the compiled data to optimize the City's groundwater pumping with respect to the water-supply salinity.

The City has relatively little control over groundwater salinity, because groundwater salinity is dependent on the Santa Ynez River stream flow salinity at the Narrows. Under the implementation of State Board Order 89-18, the Cachuma Project Settlement Agreement, and the current NMFS BO, the groundwater system has been stable with respect to salinity, and that condition is expected to continue provided there are no significant changes in Cachuma Project operations. Were groundwater salinity to start showing a sustained upward trend, the City's primary actions would be to: (1) conduct appropriate evaluations to determine the cause; (2) optimize the geographic distribution of City pumping to minimize water-treatment costs; and (3) encourage the optimal utilization of the BNA storage within Cachuma Reservoir. Reducing water use most likely would have little impact on groundwater salinity, because the groundwater salinity depends on the salinity of recharge from stream flow, not groundwater use.

BMO-02 – Maintain groundwater elevations that result in a net benefit to basin groundwater users. Groundwater levels within the Lompoc Groundwater Basin are affected mostly by recharge from the Santa Ynez River, and pumping by the City, agricultural producers, and others.

A dynamic equilibrium exists between recharge and pumping within the Lompoc Groundwater Basin such that long-term groundwater levels are stable. Groundwater levels fluctuate seasonally due to the seasonalities of recharge and pumping, and they fluctuate from year to year due to the yearly variations in Santa Ynez River stream flow at the Narrows. While long-term groundwater levels are static, significant groundwater level declines can occur during drought periods due to reduced Santa Ynez River stream flow at the Narrows and correspondingly reduced recharge, but groundwater levels historically have recovered after each drought. The stream flow at the Narrows includes both tributary runoff downstream from Bradbury Dam and releases from Cachuma Reservoir. The reservoir releases are regulated by State Board Order 89-18 and the current NMFS BO. The historical effect of the State Board Order has been to produce stable long-term groundwater levels and acceptable groundwater levels during droughts. However, the impacts of the change in reservoir releases due to changes in either the State Board Order 89-18 or the BO, and its possible revision, create uncertainty.

Groundwater levels within the City limits are affected by municipal groundwater pumping by the City and agricultural groundwater pumping within adjacent areas. However, the groundwater pumping by the City and agricultural producers is balanced by recharge from Santa Ynez River stream flow.

The City supports four monitoring programs with respect to water supply. Firstly, the City meters the production from each of its water-supply wells. Secondly, the City monitors groundwater levels within its wells. Thirdly, the City cooperates with other agencies in collecting groundwater level data throughout the Lompoc Groundwater Basin, including a cooperative program with the USGS. Fourthly, the City cooperates with other agencies to fund USGS monitoring of Santa Ynez River stream flow at several designated monitoring locations.

The City's objectives with respect to groundwater supply are to promote: (1) operation of Cachuma Reservoir that produces the optimal stream flow at the Narrows for groundwater recharge from the Santa Ynez River; and (2) water-use and wastewater-disposal practices throughout the Santa Ynez River watershed that protect Santa Ynez River stream flow at the Narrows. These objectives are to be achieved by: (1) encouraging best management practices; (2) being an active stakeholder regarding water-resources issues throughout the Santa Ynez River watershed; (3) maintaining stream flow and groundwater monitoring within the Lompoc Groundwater Basin; (4) cooperating with other agencies in maintaining stream flow monitoring throughout the Santa Ynez River watershed; (5) periodically analyzing the compiled data for adverse trends; and (6) using the compiled data to optimize the City's groundwater pumping with respect to groundwater levels.

The City has relatively little control over groundwater levels, because groundwater recharge is dependent mostly on the Santa Ynez River stream flow at the Narrows. Under the implementation of State Board Order 89-18, the Cachuma Project Settlement Agreement, and the current NMFS BO, the groundwater system has been stable with respect to groundwater levels, and that condition is expected to continue provided there are no significant changes in Cachuma Project operations. Nevertheless, were groundwater levels to start showing a significant downward trend during a drought, the City's primary actions would be to: (1) conduct appropriate evaluations to determine the cause; (2) optimize the geographic distribution of City pumping to maintain the operability of wells; (3) encourage the optimal utilization of the BNA storage within Cachuma Reservoir; and (4) reduce water use.

BMO-03 – Minimize the risk of future significant impact due to inelastic land subsidence. Land subsidence resulting from groundwater-level declines has not been observed within the Lompoc Groundwater Basin. Furthermore, provided that there are no significant changes in the operation of Cachuma Reservoir, the risk of future significant impacts is very small because long-term groundwater levels have been static. The threshold for the potential occurrence of land subsidence is for groundwater levels to decline below historical lows measured during the 1987-1992 drought. The City's objective is to prevent or minimize future impacts that may result from land subsidence in and around its service area by being aware of this groundwater level threshold for the potential occurrence of subsidence.

BMO-04 – Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping. The Lompoc Groundwater Basin and the Santa Ynez River constitute a dynamically connected system. The recharge from the river is affected by groundwater levels near the river and the groundwater salinity is affected by the stream flow salinity. An objective of the City is to protect the beneficial aspects of those relations. The particulars and approaches to achieving that objective are described above under BMO-01 and BMO-02.

BMO-05 – Protect against the risk of impacts to groundwater levels or groundwater quality caused by changes in surface water flows or surface water quality. Groundwater levels and quality within the City limits are strongly affected by the quantity and salinity of recharge from the Santa Ynez River. A fundamental objective of the City is to protect that recharge. The particulars and approaches to achieving that objective are described above under BMO-01 and BMO-02.

These BMOs are linked to management actions that are planned to attain the BMOs and overall groundwater management goal (Figure 3-1). Management actions are discussed below.

3.3 GROUNDWATER MANAGEMENT PLAN COMPONENTS

The components of this GWMP are organized in six categories:

- Agency Coordination, Stakeholder Involvement and Public Outreach
- Monitoring Program
- Groundwater Sustainability
- Adaptive Management and Mitigation in Response to Climate Change
- Groundwater Protection
- Planning Integration

3.3.1 Agency Coordination, Stakeholder Involvement, and Public Outreach

3.3.1.1 City Participation Relating to Regulatory Affairs for the Santa Ynez River

The City participates with other Santa Ynez River stakeholders in ongoing regulatory affairs of the State Board, USBR and NMFS that affect stream flow, water quality and conjunctive use in the Santa Ynez River watershed, including the Lompoc Groundwater Basin. There are four main aspects to the City's participation.

1. The City has participated in all past proceedings of the State Board affecting Santa Ynez River water rights, including the proceedings for Order 94-5, which required State Board hearings to "consider all outstanding actions within the Santa Ynez River watershed" (Appendix C).
2. The City was an active participant with the Cachuma Conservation Release Board, SYRWCD, and Improvement District No. 1 in developing and executing the self-implementing aspects of the Cachuma Project Settlement Agreement that addressed the relationship between water quality and quantity at the Narrows, flood control and other terms, and public trust resources.
3. Through a memorandum of understanding and in accordance with the BO and FMP, the City and other stakeholders participate on an adaptive management committee addressing implementation of the BO and FMP for the Santa Ynez River below Bradbury Dam.
4. The City coordinates with SYRWCD, USBR and other stakeholders as appropriate (e.g., upstream water users such as the City of Solvang and Improvement District No. 1, and south coast interests) to monitor regulatory developments with regard to SWRCB Order 94-5, the Cachuma Project Settlement Agreement, BO and FMP and other issues affecting groundwater in the Lompoc Groundwater Basin.

As discussed in the following section, the City coordinates with other local agencies in the Lompoc Groundwater Basin and participates with these local agencies and other stakeholders to implement data collection programs that support stakeholder participation in the regional as well as local regulatory affairs affecting conjunctive use.

Action: The City will continue to participate with other Santa Ynez River stakeholders in ongoing regulatory affairs of the State Board, USBR and NMFS that affect stream flow, water quality and conjunctive use in the Santa Ynez River watershed, including the Lompoc Groundwater Basin.

3.3.1.2 Local Agency Coordination

The City is a participant in the USGS Lompoc Groundwater Basin Monitoring Program. Documentation of the program is provided in Appendix C. The program is administered through annual cooperative agreements between SYRWCD and the USGS, and includes the participation of the following agencies:

- SBCWA

- City
- VVCSD
- MHCSD

The cooperative agreements include monitoring of groundwater levels in a network of 76 monitoring wells in the Lompoc Groundwater Basin (Figure 3-2). Groundwater levels measured in the wells are submitted to USGS semiannually. The USGS maintains a database of the groundwater level measurements and periodically reviews the data collection techniques of the cooperating agencies as part of the USGS quality assurance program. USGS also performs groundwater quality sampling in selected network wells and maintains the groundwater quality results in the USGS database under the cooperative agreements.

The City maintains a groundwater quality database containing results of annual sampling in a network of 21 wells in the Lompoc Groundwater Basin, which are sampled by the City, VVCSD and MHCSD (Appendix C).

The City also participates in cooperative agreements with the USGS and other agencies to conduct stream flow monitoring on the Santa Ynez River. The City's portion of the agreement is administered through an annual Joint Funding Agreement between the City and USGS (Appendix C). It addresses maintenance and periodic measurements at the H Street and V Street gauges, which are located in the City, as well as continuous water quality monitoring for specific conductance, water temperature and dissolved oxygen on the Santa Ynez River near Santa Ynez. SYRWCD participates in this portion of the overall program. Other agencies fund additional monitoring upstream below Bradbury Dam. These agencies include Santa Barbara County, CCRB and USBR.

Action: The City will continue to participate in groundwater and stream flow data collection activities with the SYRWCD, USGS, and cooperating agencies, and will coordinate groundwater monitoring activities with stakeholders in the Lompoc Groundwater Basin.

3.3.1.2 Involvement of Other Local Agencies near the Plan Area

The City is actively collecting and managing groundwater level and quality data in the Lompoc Groundwater Basin. The data collection activities are coordinated with local stakeholders, SYRWCD, and USGS.

The City also has working relationships with the State Board, which regulates water rights; Central Coast Water Quality Control Board, which regulates agricultural runoff, wastewater discharge and other discharges to surface water and groundwater, and the DPH, which regulates drinking water quality.

Action: The City plans to maintain its existing relationships with state and federal regulatory agencies. The City will continue to coordinate with other local agencies near the plan area.

3.3.1.3 Public Involvement Process

Groundwater used by the City is obtained from a common groundwater basin that is utilized by local agricultural operations and stakeholders. The City also recognizes that groundwater is a limited resource and that coordinated management is critical to ensuring a reliable water source across the region. The principal reasons for encouraging public involvement are to:

- Encourage continued support for implementation of the GWMP
- Ensure that stakeholders and other interested parties understand and have ownership in implementing and supporting the GWMP
- Build on local knowledge and provide review of the GWMP elements
- Help develop consensus among stakeholders and other interested parties
- Help promote awareness of water quality and availability issues, and build support for pollution prevention and conservation activities in the community

The City has and will continue to place a high priority on coordinating groundwater management efforts with stakeholders and the public through briefings to the City Council at regularly scheduled, publicly-noticed meetings. Public outreach and notification efforts for this GWMP were initiated in November 2011, when the City published a notice that they were convening a hearing to consider adopting a resolution of intent to prepare a GWMP. Milestone events in the public involvement process for this GWMP were:

- November 6 and 13, 2011. The City published a public notice in advance of a public hearing on whether or not to adopt a resolution of intent to prepare this GWMP.
- December 6, 2011. The City Council held a public hearing on whether or not to adopt a resolution of intent to prepare this GWMP. The resolution of intent was adopted on the same date.
- May 10 and 17, 2012. The City issued public notices describing how the public and stakeholders can participate in the GWMP development process.
- November 13, 2012. The City presented the provisional draft BMOs to stakeholders and interested members of the public at a publicly-noticed meeting held in the City Council chambers.
- June 21 and 28, 2013. The City issued public notices announcing a public meeting to provide comments on the draft GWMP.
- July 3, 2013. The City presented the draft GWMP to stakeholders and interested members of the public at a publicly-noticed meeting held in the City Council chamber.
- August 12 and September 9, 2013. The City presented and discussed the draft GWMP at regularly scheduled and noticed meetings of the Utility Commission.

- September 17 and 24, 2013. The City published a public notice in advance of a public hearing on whether or not to adopt a resolution adopting this GWMP.
- October 1, 2013. The City Council held a public hearing on whether or not to adopt a resolution adopting this GWMP. The resolution was adopted on the same date.

Appendix A documents public notification and outreach activities.

Appendix B contains the City resolutions to prepare and adopt the GWMP, and the CEQA Categorical Exemption for adoption and implementation of the GWMP.

It is the City's policy to encourage public participation when adopting plans such as this GWMP. Therefore, the City sought public input while developing this GWMP. The draft GWMP was available for public review prior to the scheduled public hearing to consider adoption of the GWMP. During the review period, the draft GWMP was available at the City's offices during normal business hours, posted on the City's web page, made available for distribution to interested parties and made available at the Lompoc Public Library. Notices for the public hearings were placed in the City newspaper (the Lompoc Record). Appendix A contains the public notices and presentation materials.

Action: The City plans to continue the public involvement process through the use of public meetings, workshops, and printed media.

3.3.2 Monitoring Program

Senate Bill 6 (SBx7-6) was enacted on November 6, 2009. SBx7-6 revises CWC 10920 et. seq. and establishes a new groundwater monitoring program, known as the California Statewide Groundwater Elevation Monitoring (CASGEM) program, to more regularly and systematically monitor groundwater in all or parts of groundwater basins throughout the state. Local entities were required to register with the state for groundwater monitoring by January 1, 2011, and begin monitoring by January 1, 2012 to ensure state funding eligibility. SBCWA has volunteered to be the monitoring entity for the Santa Ynez River Valley Groundwater Basin (DWR Designation 3-15), including the Lompoc Groundwater Basin. The City is a cooperating entity.

This section describes the five elements of the monitoring program. These include:

- Groundwater Elevation Monitoring
- Groundwater Quality Monitoring
- Groundwater-Surface Water Interaction Monitoring
- Data Management, Quality Assurance and Quality Control (QA/QC)

Information obtained through the monitoring program will be used to improve understanding of the groundwater basin; update and refine thresholds triggering management actions; and support the BMOs and overall goal. The monitoring program will be reviewed and revised as necessary during periodic plan updates.

3.3.2.1 Groundwater Elevation Monitoring

Groundwater elevations will be monitored on a periodic basis in wells in and near the City service area. The locations of these wells are shown on Figure 3-2. These wells are included in the USGS Lompoc Groundwater Basin Monitoring Program coordinated by SYRWCD and supported by the City.

Recommended procedures for groundwater level monitoring are included in Appendix D.

Action: The City will continue to review periodic groundwater elevation monitoring and data management programs at the selected well locations. The City will review the groundwater elevation data annually and during the periodic update of the GWMP.

3.3.2.2 Groundwater Quality Monitoring

Groundwater within the City's service area is affected by non-point sources of TDS and nutrient compounds, and localized point sources of anthropogenic contaminants. Naturally occurring contaminants, resulting from dissolution of minerals comprising the aquifer skeleton, may also affect groundwater quality.

Water quality samples have been periodically collected from selected wells in the USGS Lompoc Groundwater Basin Monitoring Program and each of the City's production wells (Figure 3-2). Continued monitoring of these wells will allow the City to evaluate any changes in groundwater quality in the GWMP area and around individual municipal wells.

Recommended procedures for groundwater quality sampling are included in Appendix E.

Action: The City will continue to review the available water quality data annually and during the periodic update of the GWMP.

3.3.2.3 Groundwater-Surface Water Interaction Monitoring

Surface water is not used by the City, but recharge from the Santa Ynez River is a primary factor controlling groundwater levels and quality in the Lompoc Groundwater Basin. Data collection activities under this monitoring program element consist of continued participation in the USGS Lompoc Groundwater Basin Monitoring Program and the USGS stream flow monitoring cooperative agreement. The City will continue to measure groundwater production volumes.

Action: The City will continue groundwater level and quality monitoring as described in the corresponding monitoring program elements. The City plans to continue to record groundwater production. The City will continue to participate in Santa Ynez River stream flow monitoring as described in the USGS stream flow monitoring cooperative agreement. The City plans to review the data annually and during periodic update of the GWMP.

3.3.2.4 Data Management, Quality Assurance and Quality Control

Groundwater data management for the Lompoc Groundwater Basin is performed by the USGS, Santa Barbara County and the City. These entities are also responsible for data management and QA/QC.

The water resource databases contains information including:

- Well construction
- Well location
- Groundwater levels
- Groundwater data from potentially contaminated sites
- Surface water flow
- Surface water quality
- Groundwater quality

All data entered into the water resources databases identifies the data source. Wells are identified by their state well number and unique agency well name.

Two forms of quality control are used: (1) graphing of water quality and water level data; and (2) spot checking of water data. A recommended groundwater QA/QC plan is included in Appendix F.

Action: The City will communicate with the entities responsible for data management, and QA/QC to assess whether each entity's QA/QC standards are being met. The City will make recommendations to correct deficiencies that may affect data used by the City, and, if deemed necessary, to improve the quality of the data used by the City.

3.3.3 Groundwater Sustainability

This section discusses management actions taken and planned to help ensure groundwater sustainability in the City service area.

3.3.3.1 Conjunctive Use

The City is solely reliant on groundwater for its municipal supply, and the groundwater supply is dependent on regional-scale conjunctive use in the Santa Ynez River watershed and the Santa Ynez River Valley Groundwater Basin, which includes the Lompoc Groundwater Basin. As described in Section 1.4, State Board Order 89-18, the Cachuma Project Settlement Agreement and the current NMFS BO define the institutional and regulatory framework for conjunctive use. The Lompoc Groundwater Basin is not in overdraft. The historical long-term groundwater levels are not declining, and the long-term groundwater quality is not deteriorating. Furthermore, the expected future pumping by the City, MHCSD, and VVCSD will not cause overdraft (West Yost, 2012). However, the future absence of overdraft is dependent on the continuation of the current pattern of Santa Ynez

River stream flow at the Narrows and the corresponding stream flow quality. The stream flow pattern and water quality at the Narrows results from the operation of Cachuma Reservoir under constraints imposed by State Board Order 89-18, the Cachuma Project Settlement Agreement, and the current NMFS BO. A change in those constraints could impair the Lompoc Groundwater Basin water-supply reliability and quality.

Action: The City will continue to participate in the USGS Lompoc Groundwater Basin Monitoring Program and the USGS stream flow cooperative agreement and implement the monitoring program described in Section 3.3.2 of this GWMP.

3.3.3.2 Water Recycling

The City owns the Lompoc Regional Wastewater Reclamation Plant (LRWRP). The LRWRP utilizes advanced secondary and tertiary treatment technology. The LRWRP uses recycled water, where appropriate, for on-site dust control and irrigation. The City has evaluated expansion of the use of recycled water to offset nonpotable water demands currently met with drinking water sources (Stetson Engineers, 2011).

Action: The City will continue to evaluate recycled water supplies that could offset nonpotable demands currently met with drinking water sources.

3.3.3.3 Water Conservation

The City is committed to maintaining a sustainable, reliable, high-quality groundwater supply in the Lompoc Groundwater Basin and has been implementing water conservation measures since the 1980s. As documented in its 2010 UWMP, the City is implementing 13 of the 14 demand management measures (DMMs) listed in Section 10631 of the CWC (Stetson Engineers, 2011). The single DMM that the City is not implementing, Wholesale Agency Programs, is not applicable because the City is not a water wholesaler. The City is implementing the 13 applicable DMMs through a series of water conservation resolutions and ordinances with adoption dates ranging from the 1980s through the present (Stetson Engineers, 2011).

The City's conservation resolutions and ordinances have been effective. Per capita consumption decreased from a maximum of almost 155 gallons per day per capita (gpcd) in the late 1980s to a baseline of 124 gpcd calculated as the maximum 10-year continuous average for the period 1995 through 2010. The City's water demand is projected to meet its 2015 Interim Urban Water Use Target of 121 gpcd and its 2020 Urban Water Use Target of 117 gpcd, as calculated using Method 3 of Section 10608.20(b) of the CWC. These target demands meet the water use reduction requirements of Section 10608.22 of the CWC (Stetson Engineers, 2011).

Action: The City will continue to implement its water conservation resolutions and ordinances as documented in the 2010 UWMP (Stetson Engineers, 2011).

3.3.4 Adaptive Management and Mitigation in Response to Climate Change

The City's commitment to the maintenance of a sustainable water supply will provide opportunities for adaptive management and mitigation in response to climate change. Some of the potential impacts of climate change on water supply are discussed in Section 2.4. However, specific impacts to the City's water supplies cannot be predicted with certainty, and the available data and information on the potential impacts to groundwater are especially limited. However, if climate change impacts were to occur, they most likely will be manifested as changes in Santa Ynez River stream flow or salinity at the Narrows. The City's participation in the NOAA SARP funded climate change study, as discussed in Section 2.4, will help to reduce these uncertainties and provide a basis for developing plans for adaptive management and mitigation in response to climate change. The City will use adaptive management and mitigation approaches to address the potential water-supply-related impacts of climate change and the uncertainty associated with these impacts. The groundwater sustainability measures discussed in the previous section will be important tools in both strategies. Potential adaptive management strategies include:

- Development of groundwater recharge, storage and conjunctive use projects
- Water transfers
- Development of regional water projects and partnerships
- Water conservation
- Optimization of local storage

The City has also embarked on a water conservation program, as described in Section 3.3.3.3. The City's water conservation efforts are expected to result in a 20 percent reduction in demands by 2020, as mandated by the State in Senate Bill 7. In addition to the water supply benefits of this conservation program, energy will be conserved, thereby potentially aiding in the control of greenhouse gas emissions.

Action: The City will continue to participate with MHCSD and VVCSD in the NOAA SARP climate change study. The City will consider the results of the study during development of plans for adaptive management and mitigation in response to climate change. The City will continue to review scientific and policy updates related to climate change as they become available through the IPCC, State, CUWA and other climate change authorities. The City will continue to implement the components of this GWMP and will continue to include adaptive management principals in water supply and infrastructure planning. Finally, the City will support the collection of Santa Ynez River stream flow and salinity data at the Narrows and periodically will analyze that data for the effects of climate change.

3.3.5 Groundwater Protection

This section describes policies and measures planned to help protect groundwater resources within the City service area.

3.3.5.1 Well Construction and Destruction Policies

The need for special well construction and destruction policies has not been identified within the City service area. Therefore, the construction and destruction standards put forth in CWC Section 13700 and detailed in DWR Bulletins 74-81 and 74-90 have been adopted as the applicable standards. These standards are enforced through the well construction and destruction permitting process administrated by the Santa Barbara County Environmental Health Services.

Action: The City will ensure that any well construction or destruction projects that it undertakes will meet the applicable standards. The City will also include information on these standards in its education and outreach activities to private well owners within the City service area. When reviewing or approving land use plans, the City will endeavor to ensure that project proponents identify and properly destroy abandoned wells within the plan area as a condition of development.

3.3.5.2 Wellhead Protection Policies

To date, there is no formally adopted wellhead protection policy applicable to the City service area, except for the well construction and destruction standards described CWC Section 13700, DWR Bulletins 74-81 and 74-90, and the groundwater portion of the California State Drinking Water Source Assessment and Protection Program (DWSAP). The City understands that point and non-point sources of contamination could jeopardize wells within its service area. The City has identified the following actions for minimizing the potential for impacts to the wells.

Action: The City will endeavor to evaluate the potential for proposed projects in the vicinity of its service area to impact existing municipal and private wells and future wells that may be constructed by the City. Any additional wells constructed by the City will be designed to minimize the risk of wellhead contamination and spread of contaminants caused by pumping. The City will continue to coordinate with the Santa Barbara County Planning Department during evaluation of new projects in the vicinity of its service area and the Santa Barbara County Environmental Health Services for permitting of any wells it may construct.

3.3.5.3 Protection of Recharge Areas

To date, there is no formally adopted recharge area protection policy applicable to the City service area. The City understands that point and non-point sources of contamination could jeopardize recharge areas within its service area. The City has identified the following actions for minimizing the potential for impacts to recharge areas.

Action: Any additional wells constructed by the City will be designed to minimize the risk of adverse impacts to recharge areas caused by pumping. Furthermore, the City will site new wells and manage all of its wells to optimize groundwater recharge and recharge salinity with respect to the Santa Ynez River recharge. The City will continue to coordinate with the Santa Barbara County Planning Department during evaluation of new projects that involve recharge, or that could affect recharge, in the vicinity of its service area, and Santa Barbara County Environmental Health Services for permitting of any wells it may construct.

3.3.5.4 Management of Sources of Groundwater Contamination

The City understands that point and non-point sources of contamination could jeopardize wells and recharge areas within its service area. The City has identified the following actions for minimizing the potential for impacts to wells and recharge areas.

Action: The City will continue to coordinate with the Santa Barbara County Environmental Health Services, the Central Coast Regional Water Quality Control Board, and the California Department of Toxic Substances Control for updates on known and suspected point and non-point sources of groundwater contamination.

3.3.5.5 Control of Saline Water Intrusion

Saline water intrusion has not been identified as a problem in the vicinity of the City.

Action: The City will continue to participate in the USGS Lompoc Groundwater Basin Monitoring Program and assess the results for signs of saline water intrusion.

3.3.6 Planning Integration

The City is coordinating planning activities with other local agencies in the Lompoc Groundwater Basin and has endeavored to integrate this GWMP with other relevant planning activities.

3.3.6.1 Existing Integrated Planning Efforts

3.3.6.1.1 Santa Barbara County IRWMP

The County of Santa Barbara adopted its Integrated Regional Water Management Plan (IRWMP) in 2007 and is working on a 2013 update (County of Santa Barbara, 2007). The IRWMP identifies and prioritizes all water related actions for the Santa Barbara County agencies, including the City. The planning framework addressed by the IWRMP is organized into seven categories, including:

- County and City General Plans
- Los Padres National Forest Land Management Plan
- Vandenberg Air Force Base General Plan
- Urban Water Management Plans
- Groundwater Management
- Water Shortage Contingency Plans
- Capital Improvement Plans/Master Plans

This GWMP is integrated with, and supports implementation of the IRWMP. The City adopted the IRWMP in 2007, by action of the City Council.

The City is a Cooperating Partner and is a participating member of the actions described in the IRWMP.

Action: The City will continue to participate in IRWMP development and implementation activities. The City will implement plan policies, programs, and projects identified in the IRWMP for which there are funds. If funds are not available, then the City will consider pursuing funding for implementation of the plan policies, programs, and projects.

3.3.6.1.2 Santa Barbara County Groundwater Management

The 2007 Santa Barbara County IWRMP provides a mechanism for integrated groundwater management planning in Santa Barbara County (County of Santa Barbara, 2007). Adopted GWMPs in the Santa Ynez River Valley Groundwater Basin include one for the Buellton Groundwater Basin.

SBCWA has volunteered to be the CASGEM monitoring entity for the Santa Ynez River Valley Groundwater Basin, including the Lompoc Groundwater Basin. The City will be a cooperating entity. Groundwater data collection and management activities are coordinated through the USGS Lompoc Groundwater Basin Monitoring Program.

Action: The City will continue to be a Cooperating Partner in the development and implementation of the 2007 Santa Barbara County IRWMP and the 2013 Update. The City will continue participating in the USGS Lompoc Groundwater Basin Monitoring Program.

3.3.6.1.3 DWSAP Program

California's DWSAP was initiated by the California DPH in response to the 1996 reauthorization of the federal Safe Drinking Water Act; this included an amendment requiring states to develop a program to assess sources of drinking water and to encourage those states to establish protection programs (DPH, 1999). The drinking water source protection programs entail local, regional, state, and federal agencies cooperating to maintain and protect sources of drinking water. The groundwater portion of the DWSAP serves as the State's wellhead protection program (Bachman, et. al., 2005).

Goals of the DWSAP include:

- Protecting the State's public water systems
- Improving drinking water quality
- Supporting effective water resources management
- Assisting in the refinement of monitoring requirements for drinking water sources
- Informing the public and drinking water system owners/operators of contaminants and activities that may affect drinking water quality

- Encouraging a proactive approach to protecting the State's drinking water sources and enabling protection activities by the public and drinking water system owners/operators
- Focusing cleanup and pollution prevention efforts on the most serious threats to the State's drinking water sources
- Complying with federal regulation for establishing wellhead protection and drinking water source assessment programs
- Assisting in meeting all other regulatory requirements

Action: The City will continue to comply with the drinking water source assessment standards and procedures outlined in the DWSAP. The City will strive to comply with the goals established for the DWSAP.

3.3.6.1.4 City of Lompoc Land Use Planning

The City coordinates with the Santa Barbara County Planning Department to review proposed projects that could potentially impact groundwater quality, as described in preceding sections.

Action: The City will consider the components of this GWMP when reviewing proposed projects within the City limits. The City will continue to monitor and provide input to Santa Barbara County land use planning policies and project proposals potentially impacting the City.

3.3.6.1.5 Santa Barbara County Land Use Planning

The Santa Barbara County Comprehensive Plan Land Use Element was adopted in 1980 and amended in February 2011.

The Land Use Element lays out the general patterns of development throughout the County, including the distribution of real estate, open space and agricultural land, mineral resources, recreational facilities, schools, and waste facilities. The main goals of the land use policies are (Santa Barbara County, 2011):

Environment: Environmental constraints on development shall be respected. Economic and population growth shall proceed at a rate that can be sustained by available resources.

Urbanization: In order for the County to sustain a healthy economy in the urbanized areas and to allow for growth within its resources and within its ability to pay for necessary services, the County shall encourage infill, prevent scattered urban development, and encourage a balance between housing and jobs.

Agriculture: In the rural areas, cultivated agriculture shall be preserved and, where conditions allow, expansion and intensification should be supported. Lands with both prime and non-prime soils shall be reserved for agricultural uses.

Open Lands: Certain areas may be unsuited for agricultural uses due to poor or unstable soil conditions, steep slopes, flooding or lack of adequate water. These open lands have importance as grazing, watershed, wildlife habitat, mineral resources, recreation, and scenic qualities. These lands are usually so located that they are not necessary or desirable for urban uses. There is no basis for the proposition that all land, no matter where situated or whatever the need, must be planned for urban purposes if they cannot be put to some other profitable economic use.

Action: The City will continue to consider the Santa Barbara County land use planning policies and goals in the implementation of this GWMP.

3.3.6.2 Advisory Committee Formation

The Advisory Committee for this GWMP is comprised of the City Utility Commission.

Action: The City Council will continue to designate representatives to the Advisory Committee during implementation of this GWMP.

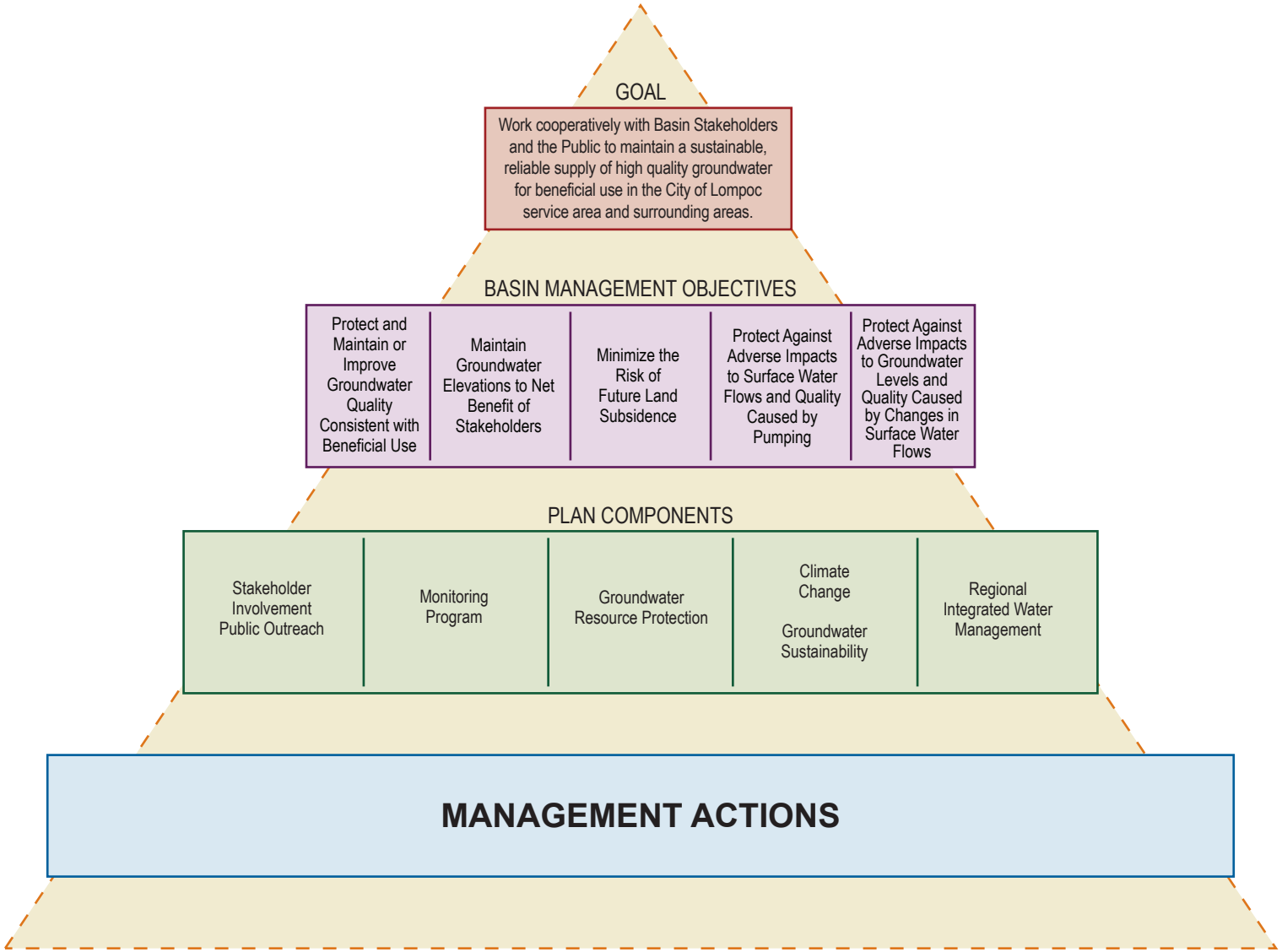


Figure 3-1

City of Lompoc
Groundwater Management Plan

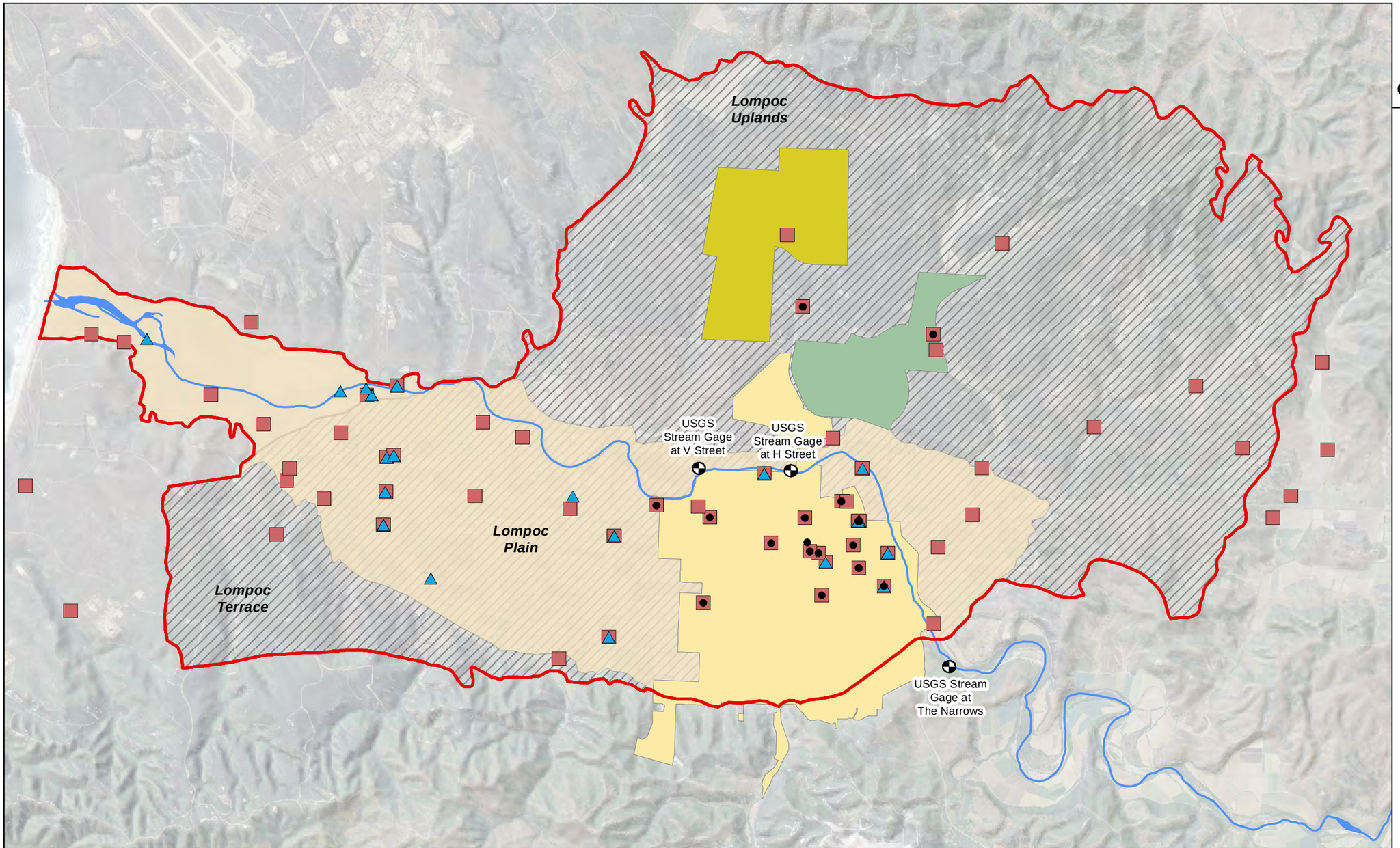
GROUNDWATER MANAGEMENT COMPONENTS

WEST YOST ASSOCIATES

FIGURE 3-2

City of Lompoc Groundwater Management Plan

GROUNDWATER MONITORING WELLS



N

0 3,000 6,000

Scale in Feet

LEGEND

- Groundwater Quality Monitoring Wells Sampled by Cooperating Agencies
- Groundwater Quality Monitoring Wells Sampled by USGS
- Groundwater Level Wells Monitored by Cooperating Agencies
- USGS Stream Gaging Stations
- Santa Ynez River
- Lompoc Groundwater Basin
- Upper Aquifer
- Lower Aquifer
- City of Lompoc Water Service Area
- Mission Hills Community Services District
- Vandenberg Village Community Services District

Notes

1. The names and coordinates of the mapped wells are defined in Joint Funding Agreement (JFA) No. 13WSCA04400 between the Santa Ynez River Water Conservation District and the U.S. Geological Survey (USGS) for the period July 1, 2013 through September 30, 2013 (Appendix C.5).
2. The City of Lompoc is a local cooperator under annual JFAs, including JFA No. 13WSCA04400.
3. Mapped wells used by local cooperating agencies to monitor groundwater levels are listed in Enclosure 1 of the JFA .
4. Mapped wells used by the USGS to monitor expansive groundwater quality parameters are listed in Enclosure 2 of the JFA.
5. Mapped wells used by the local cooperators to monitor limited groundwater quality parameters are listed in Enclosure 3 of the JFA.
6. Wells included in the monitoring network may change over time, as the result of loss of access, well failure or other issues.
7. Mapped well 7N/35W-35A3 in the southwest Lompoc Plain is included in the USGS groundwater quality monitoring program but is not listed in Enclosure 2 of the JFA 13WSCA04400.
8. There are multiple collocated wells at some mapped locations.

WEST YOST ASSOCIATES
Consulting Engineers

4.1 FUTURE GROUNDWATER MANAGEMENT PLAN UPDATES

Periodic GWMP updates may be required as knowledge of the Lompoc Groundwater Basin increases and groundwater management strategies evolve. The City will periodically consider new groundwater management techniques to be incorporated into the GWMP. Over time, BMOs may need to be modified based on changing groundwater conditions, institutional framework, or the development of new groundwater management objectives. If changes must be made, the City will formalize the changes in an updated GWMP.

4.2 FINANCING

The implementation of this GWMP will be funded by the City. Ongoing coordination activities will be performed by City staff using City funds. Most baseline data collection activities will also be funded by the City. The City plans to provide a proportional share of costs for other regional data collection efforts. State or federal funding may be pursued to support implementation of this GWMP.

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APPENDIX A

Public Notification and Outreach Information

APPENDIX A.1

Notice of Intent to Prepare Groundwater Management Plan

Advertising Receipt

Lee Central Coast Newspapers
PO Box 717
Provo, UT 84603-0717

Phone: (877) 605-0383
Fax: (801) 356-3011

CITY OF LOMPOC-LEGALS
STACEY ALVAREZ
PO BOX 8001
LOMPOC , CA 93438-8001

Acct #: 09111545
Ad #: 00178958
Phone: (805)875-8241
Date: 11/01/2011
Ad taker: tc **Salesperson:**

Sort Line: CITY OF LOMPOC NOTICE OF PUBLI **Classification:** 986

Description	Total
01 The Lompoc Record 11/06/2011	59.94
01 The Lompoc Record 11/13/2011	59.94

NOV 15 2011

Util D
APPROVED FOR PAYMENT
BY Sheila Segura
ACCT 51500 - 52170

Ad Text:

CITY OF LOMPOC
NOTICE OF PUBLIC HEARING TO CONSIDER ADOPTING
A RESOLUTION OF INTENT TO PREPARE A GROUNDWATER
MANAGEMENT PLAN
NOTICE IS HEREBY GIVEN that the City Council of the City of Lompoc will
hold a Public Hearing on December 6, 2011 at 7:00 p.m. in the Council Chambers of the City of Lompoc, 100 Civic Center Plaza, Lompoc, CA, for the following purpose:
To consider adoption of a Resolution of Intent to prepare a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Sections 10750 et seq.
The City of Lompoc recognizes the importance of maintaining a

Payment Reference:

Total:	119.88
Tax:	0.00
Net:	119.88
Prepaid:	0.00
Total Due	119.88

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA.

LOMPOC RECORD

- -

STACEY ALVAREZ
CITY OF LOMPOC-LEGALS
ACCOUNTS PAYABLES
PO BOX 8001
LOMPOC, CA 93438-8001

REFERENCE: 09111545
00178958 CITY OF LOMPOC NOTICE O

I AM THE PRINCIPAL CLERK OF THE PRINTER OF THE LOMPOC RECORD, NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED IN THE CITY OF LOMPOC, COUNTY OF SANTA BARBARA, AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, ADJUDICATION #47065.

THAT THE NOTICE OF WHICH THE ANNEXED IS A PRINTED COPY (SET IN TYPE NOT SMALLER THAT NONPAREIL), HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO-WIT:

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURE THAT THE FOREGOING IS TRUE AND CORRECT.

PUBLISHED ON: 11/06/11, 11/13/11

TOTAL AD COST: 119.88

FILED ON: 11/01/2011

- -

DATED AT SANTA MARIA, CA, THIS 14th DAY OF NOV, 20 11

Teresa a Ramirez

SIGNATURE

CITY OF LOMPOC
NOTICE OF PUBLIC HEARING TO CONSIDER ADOPTING A RESOLUTION OF INTENT TO PREPARE A GROUNDWATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that the City Council of the City of Lompoc will hold a Public Hearing on December 6, 2011 at 7:00 p.m. in the Council Chambers of the City of Lompoc, 100 Civic Center Plaza, Lompoc, CA, for the following purpose:

To consider adoption of a Resolution of Intent to prepare a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Sections 10750 et seq.

The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Adoption of a Groundwater Management Plan will further this goal. The City Council will hold a Public Hearing as indicated above to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt a Resolution of Intent to prepare a Groundwater Management Plan. The City Council will consider adopting, and may adopt, a Resolution of Intent to prepare a Groundwater Management Plan immediately following the Public Hearing.

All interested persons may attend the Public Meeting and be heard. Additional information and a copy of the proposed Resolution of Intent to prepare a Groundwater Management Plan may be obtained by contacting Susan Segovia, Senior Administrative Analyst, Utility Department at (805) 875-8297 or at s_segovia@ci.lompoc.ca.us.

Legal #178958
Pub dates: Nov 6, 13, 2011

Lompoc City Council Agenda Item

Council Meeting Date: December 6, 2011

TO: Laurel M. Barcelona, City Administrator

FROM: Susan Segovia, Senior Administrative Analyst
s_segovia@ci.lompoc.ca.us

SUBJECT: Resolution of Intent to Prepare a Groundwater Management Plan

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RECOMMENDATION:

1. Staff recommends that the City Council adopt Resolution No. 5751(11), which notifies interested parties of the City's intent to prepare a Groundwater Management Plan.

BACKGROUND:

The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Adoption of a Groundwater Management Plan (GWMP) will further this goal. California Water Code Sections (CWC) 10750 *et seq.* contains the requirements for development of a GWMP. One of those requirements is for the City to hold a public hearing to consider the preparation of a Groundwater Management Plan. The public hearing provides interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt a resolution concerning the City's intention to prepare a Groundwater Management Plan. Local agencies are required to develop a GWMP to be eligible for funding for construction and groundwater projects administered by the California Department of Water Resources (DWR).

The CWC Sections 10750 *et seq.* require local agencies to:

1. Make available to the public a written statement describing the manner in which interested parties may participate in development of a GWMP.
2. Prepare and implement a GWMP that includes Basin Management Objectives (BMOs) for the groundwater basin that is subject to the plan.
3. Include components relating to the monitoring and management of groundwater levels within the groundwater basin, groundwater quality degradation, inelastic land subsidence (aquifer compaction resulting from groundwater withdrawal), and changes in surface water flow and quality that directly affect groundwater levels or quality that are caused by groundwater pumping in the basin.
4. Prepare a GWMP that involves other agencies and enables the local agency to work cooperatively with other public entities whose service areas or boundaries overlie the groundwater basin.
5. Adopt monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic subsidence in basins for which subsidence has been identified as a potential problem and flow and quality of surface water that directly affect groundwater levels or quality, or are caused by groundwater pumping in the basin. The goal of these protocols is to generate information that promotes efficient and effective groundwater management and supports the attainment of the BMOs.
6. Prepare a map that details the areas of the groundwater basin, as defined in DWR Bulletin 118, the areas that will be subject to the plan, and the boundaries of the local agencies overlying the basin.

City staff is recommending that the GWMP be limited to the City's geographic boundaries within the Lompoc Plain portion of the Lompoc Groundwater Basin. City staff reviewed six proposals in response to Request for Proposal No. 2600 (Consultant Services for Groundwater Basin Management Plan). West Yost Associates received the highest combined score of the 6 proposals received and was recommended by staff to the City Administrator for the preparation of the Groundwater Plan. The cost proposals ranged from $49,830 to $79,740. Attachment A summarizes the bids received and the proposals. West Yost has extensive experience with groundwater management basins and Tim Durbin of West Yost developed the City's hydrology model and has worked with the City on many water related issues for approximately twenty years.

Staff prepared Resolution No. 5751(11), which concerns the City's intention to prepare a Groundwater Management Plan. If the Council approves Resolution No. 5751(11) staff will award the Groundwater Management contract, under the City Administrator's authority, to West Yost Associates for a not to exceed amount of $58,169.00. The development of a Groundwater Management Plan will not affect water rates for City water customers.

FISCAL IMPACT:

There is no fiscal impact to hold the Public Hearing for the preparation of the Groundwater Management Plan.

CONCLUSION:

Resolution No. 5751(11), concerning the City's intent to prepare a Groundwater Management Plan must be approved by the City Council in order to proceed with the development of a Groundwater Management Plan.

Susan Segovia
Senior Administrative Analyst

APPROVED:

Ronald V. Stassi
Utilities Director

APPROVED FOR SUBMITTAL TO THE CITY COUNCIL:

Laurel M. Barcelona
City Administrator

Attachments:

Attachment A, Evaluation of Groundwater Management Plan Proposals
Attachment B, Resolution No. 5751(11), Intent to Prepare a Groundwater Management Plan

ATTACHMENT A

Groundwater Basin Management Plan Evaluation Scores

Company	Combined Score	Project Team	Understanding & Approach	Similar Experience	Resource Allocation	Schedule	Fee Score	Charge
West Yost Associates	253	30	45	40	27	58	53	$58,169
Cleath-Harris Geologists, Inc.	245	29	38	36	29	48	65	$51,900
Kear Groundwater	229	22	30	30	22	51	74	$51,900
Stetson Engineers, Inc.	227	26	30	35	26	52	58	$57,763
Luhdorff & Scalmanini	185	26	32	36	22	40	29	$79,740
Pegasus Geoscience	157	21	27	21	19	38	31	$79,686

The following is a description of the evaluation categories and the percentage of the total evaluation score:

Project Team-Similar experience, references, and qualifications of the Project Manager and other individual project team members (10%)

Understanding and Approach-Clear understanding of the City's requested Scope of Services and a general approach to the work that is organized, efficient, and promotes the highest quality product possible for the City (15%)

Similar Experience-Demonstrated previous project experience, qualification, and references relevant to the type of project being considered (15%)

Resource Allocation-Adequate resources and the ability to provide experienced professional services in an efficient manner (10%)

Schedule-Demonstrated ability to perform all required work within the desired project schedule (20%)

Fee Score-Acceptable cost estimate, fee summary and rate schedule to accomplish all required work (30%)

Charge-Proposed fee for the development of the Groundwater Plan

Three City staff members reviewed the six proposals (ranging from $49,830 to $79,740) from the companies listed in the evaluation table in response to the Request for Proposal for the Groundwater Basin Management Plan (GWMP). City staff recommended that the City award the consultant services for the GWMP to West Yost Associates for the following reasons:

1. West Yost received the highest combined score of the six proposals received.
2. West Yost has extensive experience with groundwater management plans and Tim Durbin of West Yost, who is part of West Yost's consultant team, developed the City's hydrology model and has worked with the City on many water related issues for approximately twenty years.

RESOLUTION NO. 5751(11)

A Resolution of The Council of The City of Lompoc, County of Santa Barbara, State of California, Intent to Prepare A Groundwater Management Plan

WHEREAS, the California Legislature enacted Assembly Bill 3030 to provide local public agencies increased management authority over their groundwater resources and subsequently Senate Bill 1938 to expand the authority under AB 3030 by requiring a Groundwater Management Plan (the Plan) to provide for eligibility for grant funds for groundwater related projects (California Water Code Section 10750 *et. seq.*); and

WHEREAS, the State of California has emphasized that local agencies develop integrated regional solutions for water management and coordinating conjunctive management of surface and groundwater to improve the regional supply, reliability and quality of water; and

WHEREAS, the City of Lompoc (the City) is an urban supplier of water providing water to approximately 40,000 citizens; and

WHEREAS, the Plan will meet the State requirements in compliance with the California Water Code and will be coordinated with other local water districts and water users in the Lompoc Groundwater Basin; and

WHEREAS, the Plan shall be periodically reviewed and the City shall make any amendments or changes to its Plan, which are indicated by the review; and

WHEREAS, the City's current Urban Water Management Plan adopted in 2010 addresses the current water supply; the Plan will address maintaining a long-term, sustainable, and reliable supply of high quality groundwater for the beneficial use of water customers in the City service area; and

WHEREAS, the City will file the Plan with the California Department of Water Resources upon adoption of the final Plan by the City Council.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LOMPOC, CALIFORNIA, HEREBY RESOLVES:

Section 1. The City Council adopts this Resolution and directs staff to proceed with the development of a Groundwater Management Plan in accordance with the provisions of Senate Bill 1938 and California Water Code Sections 10750 *et seq.* and to pursue future grant funds.

The above and foregoing Resolution was proposed by Councilmember _____, seconded by Councilmember _____, and was duly passed and adopted by the Council of the City of Lompoc at its regular meeting of December 6, 2011, by the following vote:

AYES: Councilmember:

NOES: Councilmember:

ABSENT: Councilmember:

John H. Linn, Mayor
City of Lompoc

ATTEST:

Stacey Alvarez
City Clerk, City of Lompoc

COUNCIL/REDEVELOPMENT AGENCY REQUESTS AND ANNOUNCEMENTS:
(cont'd) Item No. 13

Council Member Lingl declared this City Council is holding LHCDC to higher standards and asking questions previous Council have not done, the presented report is a good beginning, and then proclaimed it is his belief that the Council's first priority is to ensure the public is protected, the second goal is to protect the City's liabilities and the third goal is to hold any criminally negligent individuals or companies accountable for their actions.

Mayor Linn requested Council provide a list of specific information it wants to be included on a revised report.

After some discussion, Mayor Linn motioned to direct Staff to present a list to Council at the December 20, 2011 City Council Meeting to include the following information:

How long have properties been out of compliance with affordability covenant(s) which includes compliance with tenant income reporting and compliance with rental limits; How long have properties been out of compliance with property maintenance; What covenants are on each property (*i.e.*, Federal, State, County, City, Redevelopment Agency (RDA)); When was the covenant recorded on a property; How long is each covenant requirement; Termination date of the covenant; All Federal and State loans controlled by the City that were ever provided to LHCDC and the time sequence on when loans were provided to a property, and other subsequent loans made to the property which paid off earlier loans. The source of any payoff funds; The inclusion of all loans made to the T Street, College Park Apartments and K Street properties on the chart provided to Council on December; Will HUD accept the RDA's covenant as meeting the Federal requirements for affordability compliance; A listing of all properties that received Federal and State loans controlled by the City that were ever provided to LHCDC which have been refinanced and whether public funds were used in the refinancing of properties and if equity was taken out by LHCDC, if so the amount of equity taken out, and if known, what was the equity used for and were those refinancings allowable under Federal regulations; Actions the City can take to prevent the potential repayment to HUD of Federal funds expended on the Lompoc Theater acquisition; The potential amount of City-controlled and Agency-controlled loan funds that will be lost in foreclosure actions by private lenders; The potential amount of Federal funds that may be required to be repaid to HUD due to noncompliance.

The motion was seconded by Council Member Martner and carried by Council Member Starbuck.

PUBLIC HEARING:

CITY 10. **Resolution of Intent to Prepare a Groundwater Management Plan.**

Senior Administrative Analyst Susan Segovia presented the Staff report and recommendations.

Council Member Starbuck asked Staff to confirm that this plan is a requirement to be eligible for funding and grants from the California Department of Water Resources (DWR) and that those funds are in excess of the cost of the consultant that will prepare this plan. Ms. Segovia answered yes, this is a requirement to receive funding from the California DWR and she believes the grants offered will more than cover the cost of the consultant.

Council Member Costa thanked Staff for this report, asked if the cost of the consultant was a budgeted amount and if the City has the expertise to compose this Plan in house. Ms. Segovia stated the expenditure listed for the consultant was an approved budgeted item approved by Council in the 2011/13 FY Budget and confirmed the preparation of a Groundwater Management Plan is very complex and the City does not currently have an employee with the expertise to successfully complete this Plan.

Public Comment: None

ACTION: Motion/Second: Starbuck/Costa. By a 5-0 vote Council adopted Resolution No. 5751(11), which notifies interested parties of the City's intent to prepare a Groundwater Management Plan.

APPENDIX A.2

Notice of Public Participation

Advertising Receipt

Lee Central Coast Newspapers
PO Box 717
Provo, UT 84603-0717

Phone: (877) 605-0383
Fax: (801) 356-3011

CITY OF LOMPOC-LEGALS
STACEY ALVAREZ
PO BOX 8001
LOMPOC , CA 93438-8001

Acct #: 09111545
Ad #: 00187729
Phone: (805)875-8241
Date: 05/07/2012
Ad taker: tc **Salesperson:**

Sort Line: Participation groundwater **Classification:** 986

Description	Total
01 The Lompoc Record 05/10/2012	86.58
01 The Lompoc Record 05/17/2012	86.58

RECEIVED
MAY 18 2012
ACCOUNTS PAYABLE

Util D
APPROVED FOR PAYMENT
BY_____
ACCT_____

Payment Reference:

Ad Text:

CITY OF LOMPOC
NOTICE OF ADOPTED
RESOLUTION OF INTENT TO PREPARE A GROUNDWATER
MANAGEMENT PLAN WITH
PUBLIC PARTICIPATION

NOTICE IS HEREBY GIVEN that the City of Lompoc adopted a Resolution of Intent to prepare a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 et. seq. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal.

The City Council of the City of Lompoc held a Public Hearing on December

Total:	173.16
Tax:	0.00
Net:	173.16
Prepaid:	0.00
Total Due	173.16

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA.

LOMPOC RECORD

- -

STACEY ALVAREZ
CITY OF LOMPOC-LEGALS
ACCOUNTS PAYABLES
PO BOX 8001
LOMPOC, CA 93438-8001

REFERENCE: 09111545
00187729 PARTICIPATION GROUNDWAT

I AM THE PRINCIPAL CLERK OF THE PRINTER OF THE LOMPOC RECORD, NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED IN THE CITY OF LOMPOC, COUNTY OF SANTA BARBARA, AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, ADJUDICATION #47065.

THAT THE NOTICE OF WHICH THE ANNEXED IS A PRINTED COPY (SET IN TYPE NOT SMALLER THAT NONPAREIL), HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO-WIT:

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURE THAT THE FOREGOING IS TRUE AND CORRECT.

PUBLISHED ON: 05/10/12, 05/17/12

TOTAL AD COST: 173.16

FILED ON: 05/07/2012

- -

DATED AT SANTA MARIA, CA, THIS 17th DAY OF May, 2012

Teresa Ramirez

SIGNATURE

CITY OF LOMPOC
NOTICE OF ADOPTED RESOLUTION OF INTENT TO PREPARE A GROUNDWATER MANAGEMENT PLAN WITH PUBLIC PARTICIPATION

NOTICE IS HEREBY GIVEN that the City of Lompoc adopted a Resolution of Intent to prepare a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 et seq. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal.

The City Council of the City of Lompoc held a Public Hearing on December 6, 2011 in the Council Chambers of the City of Lompoc, 100 Civic Center Plaza, Lompoc, CA to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt a Resolution of Intent to prepare a Groundwater Management Plan. The City Council adopted the Resolution of Intent to prepare a Groundwater Management Plan immediately following the Public Hearing.

Preparation of the Groundwater Management Plan will be discussed periodically at publicly noticed meetings of the Lompoc City Council and the Lompoc Utility Commission. Interested parties may participate in the development of the City of Lompoc's Groundwater Management Plan by attending these meetings and providing comments to members of the City Council and the Utility Commission. Information concerning the Groundwater Management Plan will also be posted on the City of Lompoc's website, www.cityoflompoc.com. At a future date, the City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt the Groundwater Management Plan. The public hearing is tentatively scheduled to be convened as part of the December 4, 2012 City Council meeting.

Additional information and a copy of the adopted Resolution of Intent to prepare a Groundwater Management Plan may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the Utility Department, by email s.segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Dated: May 7, 2012
Susan Segovia
Senior Administrative Analyst
Legal #187729
Pub dates: May 10 & 17, 2012

APPENDIX A.3

November 13, 2012 Stakeholder Meeting to Discuss
Preliminary Draft Basin Management Objectives

Agenda
November 13, 2012

Project:	City of Lompoc Groundwater Management Plan
Subject:	Preliminary Draft Basin Management Objectives
Meeting Date/Time:	November 13, 2012; 1:00 – 3:00 PM
Location:	City of Lompoc Council Chambers, 100 Civic Center Plaza Lompoc, CA 93436

PURPOSE:

The purpose of this meeting is to present and discuss preliminary draft basin management objectives (BMOs) for the City of Lompoc's Groundwater Management Plan, which is under development.

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

BMOs support the City's overall groundwater management goal by identifying and prioritizing the most important issues in meeting water resources needs.

DISCUSSION TOPICS:

1. Introductions
2. Purpose and overall goal of the groundwater management plan
3. Plan development process and schedule for completion and adoption of the plan
4. Hydrologic setting of the groundwater basin
5. Presentation of preliminary draft BMOs
6. Discussion of preliminary draft BMOs

WEST YOST ASSOCIATES
Consulting Engineers

LOMPOC CALIFORNIA
CITY OF ARTS & FLOWERS

City of Lompoc
Stakeholder Meeting
Groundwater Management Plan
Preliminary Draft Basin Management Objectives
November 13, 2012

LIST OF ATTENDEES

Name	Representing	Email	Phone
M.W. Riley	MHCSD	mr@mhcsd.org	733-4366
Sean DeHaviland	MHCSD	SD@MHCSD.ORG	588-2834
MERLE PAUTSCH	VILLAGE COUNTRY CLUB	mgpg41324@verizon.net	733-1253
CHRIS BROOKS	VVCSD	cbrooks@vvcsd.org	7333462
ERIC ERLAND	CITY LOMPOC		875-8704
Gene Mayheim	City of Lompoc	g-mayheim@ci.lompoc.	875-8702
BRUCE WALLS	SYRCWCD	bwalls at syrwcd.com	688-8065
JON PICCINOLO	SYRWCD	brightbank@hotmail.com	
ED TURPIN	FBOP	ETURPIN@BOP.GOV	805-736 5110
Joe Barget	VVCSD	jbarget@vvcsd.org	733-2475
Jere Clements	FBOP	jclements@bop.gov	735-2771 x 3372
Fred T. Hayes	FBOP	FHayes@Bop.gov	735-2771 x 3384
JIM MACKENZIE	MHCSD	JM1313@AOL.COM	733-4366
Steve Wineman } Helen Wineman }	Same		922-5197
Mark Blair	VVCSD	BLAIR@VVCSD.ORG	733-3184

Letters to Stakeholders Announcing November 13, 2012 Meeting
to Discuss Preliminary Draft Basin Management Objectives

CITY OF LOMPOC

November 2, 2012

Warden Richard B. Ives
Federal Correctional Institution
3600 Guard Road
Lompoc, CA 93436

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Warden Richard B. Ives Federal Correctional Institution:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

The City is convening a meeting to discuss development of the Groundwater Management Plan with interested stakeholders at 1:00 pm on Tuesday, November 13, 2012. The meeting will take place at the following location:

City of Lompoc
City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

City staff and consultants will be on hand to describe the hydrologic setting of the groundwater basin, need for the plan, the plan development process and the City's draft Basin Management Objectives (BMOs), which are attached. BMOs support the City's overall groundwater management goal by identifying and prioritizing the most important issues in meeting water resources needs.

Preparation of the Groundwater Management Plan will continue to be discussed periodically at publicly noticed meetings of the Lompoc City Council and the Lompoc Utility Commission. Interested parties may participate in the development of the City of Lompoc's Groundwater Management Plan by attending these meetings and providing comments to members of the City Council and the Utility Commission. Information concerning the Groundwater Management Plan will also be posted on the City of Lompoc's website, www.cityoflompoc.com. At a future date, the City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt the Groundwater Management Plan.

Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

Jesus Espinoza
Big E Produce
P.O. Box 1117
Lompoc, CA 93438

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Jesus Espinoza Big E Produce:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

November 2, 2012

Edward S. Wineman
P.O. Box 109
Santa Maria, CA 93456

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Edward S. Wineman :

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

November 2, 2012

Village County Club
4300 Clubhouse Road
Lompoc, CA 93436

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Village County Club :

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City Council Chambers
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Lompoc CA, 93436

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Preparation of the Groundwater Management Plan will continue to be discussed periodically at publicly noticed meetings of the Lompoc City Council and the Lompoc Utility Commission. Interested parties may participate in the development of the City of Lompoc's Groundwater Management Plan by attending these meetings and providing comments to members of the City Council and the Utility Commission. Information concerning the Groundwater Management Plan will also be posted on the City of Lompoc's website, www.cityoflompoc.com. At a future date, the City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt the Groundwater Management Plan.

Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

November 2, 2012

Bruce Wales
Santa Ynez River Water Cons.Dist.
P.O. Box 719
Santa Ynez, CA 93460

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Bruce Wales Santa Ynez River Water Cons.Dist.:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Lompoc CA, 93436

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Preparation of the Groundwater Management Plan will continue to be discussed periodically at publicly noticed meetings of the Lompoc City Council and the Lompoc Utility Commission. Interested parties may participate in the development of the City of Lompoc's Groundwater Management Plan by attending these meetings and providing comments to members of the City Council and the Utility Commission. Information concerning the Groundwater Management Plan will also be posted on the City of Lompoc's website, www.cityoflompoc.com. At a future date, the City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt the Groundwater Management Plan.

Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

Bill Paxton
Santa Barbara Farms & Ocean View Flowers
1200 Union Sugar Ave.
Lompoc, CA 93436

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Bill Paxton Santa Barbara Farms & Ocean View Flowers:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq.* The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

Campbell Ranches
P.O. Box 625
Lompoc, CA 93438

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Campbell Ranches :

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City Council Chambers
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Lompoc CA, 93436

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Preparation of the Groundwater Management Plan will continue to be discussed periodically at publicly noticed meetings of the Lompoc City Council and the Lompoc Utility Commission. Interested parties may participate in the development of the City of Lompoc's Groundwater Management Plan by attending these meetings and providing comments to members of the City Council and the Utility Commission. Information concerning the Groundwater Management Plan will also be posted on the City of Lompoc's website, www.cityoflompoc.com. At a future date, the City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt the Groundwater Management Plan.

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Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

November 2, 2012

John Bodger & Sons Company
P.O. Box 2709
Lompoc, CA 93438

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear John Bodger & Sons Company :

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

La Purisima Golf Course
3455 Highway 246
Lompoc, CA 93436

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear La Purisima Golf Course :

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

Steve Jordan
Baroda Farms, Inc.
P.O. Box 427
Lompoc, CA 93438

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Steve Jordan Baroda Farms, Inc.:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

Art Hibbits
Hibbits Ranch Company, LLC
1251 East Hwy. 246
Lompoc, CA 93436

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Art Hibbits Hibbits Ranch Company, LLC:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

The City is convening a meeting to discuss development of the Groundwater Management Plan with interested stakeholders at 1:00 pm on Tuesday, November 13, 2012. The meeting will take place at the following location:

City of Lompoc
City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

City staff and consultants will be on hand to describe the hydrologic setting of the groundwater basin, need for the plan, the plan development process and the City's draft Basin Management Objectives (BMOs), which are attached. BMOs support the City's overall groundwater management goal by identifying and prioritizing the most important issues in meeting water resources needs.

Preparation of the Groundwater Management Plan will continue to be discussed periodically at publicly noticed meetings of the Lompoc City Council and the Lompoc Utility Commission. Interested parties may participate in the development of the City of Lompoc's Groundwater Management Plan by attending these meetings and providing comments to members of the City Council and the Utility Commission. Information concerning the Groundwater Management Plan will also be posted on the City of Lompoc's website, www.cityoflompoc.com. At a future date, the City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt the Groundwater Management Plan.

Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the City of Lompoc Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

Base Civil Engineer
730 CES/CEC
1172 Iceland Avenue, Bldg. 11433
Vandenberg AFB, CA 93437-6011

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Base Civil Engineer 730 CES/CEC:

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Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 2, 2012

Matt Naftaly
Santa Barbara County Water Agency
123 E. Anapamu St.
Santa Barbara, CA 93101-2058

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Matt Naftaly Santa Barbara County Water Agency:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 6, 2012

Joe Barget,
General Manager
Vandenberg Village Community Services District
3757 Constellation Road
Lompoc, CA 93436

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Mr. Barget:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

November 6, 2012

Michael W. Riley
General Manager
Mission Hills Community Services District
1550 E. Burton Mesa Blvd.
Lompoc, CA 93436-2100

SUBJECT: City of Lompoc Groundwater Management Plan Stakeholder Meeting, November 13, 2012

Dear Mr. Riley:

The City of Lompoc is preparing a Groundwater Management Plan for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

This section describes the City's overall groundwater management goal, and Basin Management Objectives (BMOs).

3.1 OVERALL GROUNDWATER MANAGEMENT GOAL

The City's overall groundwater management goal is to work cooperatively with basin stakeholders and the public to maintain a sustainable, reliable, high-quality groundwater supply for beneficial use in the City service area and surrounding areas.

3.2 BASIN MANAGEMENT OBJECTIVES

BMOs have been developed to support the City's overall groundwater management goal. BMOs have been established to address the following five areas:

BMO-01 - Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users

BMO-02 - Maintain groundwater elevations that result in a net benefit to basin groundwater users

BMO-03 - Minimize the risk of future significant impact due to inelastic land subsidence

BMO-04 - Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping

BMO-05 - Protect against the risk of impacts to groundwater levels and groundwater quality caused by changes in surface water flows or surface water quality

BMO-01 – Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users. Groundwater quality within the City's service area is affected by both the groundwater recharge that occurs from the Santa Ynez River and impacts from point and nonpoint contaminant sources.

The principal source of recharge to the Lompoc groundwater basin is recharge from the Santa Ynez River streamflow. The river enters the Lompoc Valley at the Narrows, and the streamflow produces recharge from that point downstream. However, recharge occurs mostly within the reach from the Narrows to the V Street. The Santa Ynez River streamflow contains high dissolved solids, and the recharge from streamflow is a significant source of salinity within the Lompoc groundwater basin. While the streamflow salinity occurs mostly from natural processes within the Santa Ynez River watershed, the streamflow salinity at the Narrows is affected by the operation of Cachuma Reservoir. That operation is regulated by State Water Resources Control Board Order 89-18, the Cachuma Project Settlement Agreement, and the National Marine Fisheries Service Biological Opinion. The historical effect of the State Board Order and the Settlement Agreement has been to reduce recharge salinity and to improve groundwater quality. However, the impacts of the Biological Opinion and its possible revision are uncertain. Streamflow salinity and the corresponding recharge salinity can be impacted by

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upstream water-use and wastewater-disposal practices within the Santa Ynez River watershed area between Bradbury Dam and the Narrows.

Groundwater within the City's service area can also be affected by nonpoint sources of nitrate and salinity, and localized point sources of anthropogenic contaminants. Potential nonpoint sources include fertilizers and other chemicals used in landscape maintenance, salinity in irrigation water, and leakage from sanitary sewers. Point sources include chemical releases from underground storage tanks and other sources.

The City supports three water-quality monitoring programs. Firstly, the City cooperates with other local agencies in monitoring Santa Ynez River streamflow salinity at the Narrows, where the USGS collects continuous data on electrical conductivity and temperature. Secondly, the City cooperates with other local agencies in monitoring groundwater quality at selected wells within the Lompoc groundwater basin, where the USGS collects or compiles groundwater salinity data within the Lompoc Plain and Uplands. Thirdly, the City collects and analyzes groundwater-quality samples from its active production wells to comply with applicable standards in Title 22 of the CWC. The Department of Public Health (DPH) Title 22 program specifies the constituents to be tested, the detection limits for these constituents and reporting requirements.

The City's objectives with respect to groundwater quality are to: (1) promote operation of Cachuma Reservoir that produces the optimal streamflow salinity at the Narrows with respect to groundwater recharge from the Santa Ynez River, (2) promote water-use and wastewater-disposal practices throughout the Santa Ynez River watershed that protects Santa Ynez River streamflow quality at the Narrows, and (3) to encourage landscaping practices that minimize discharges of nutrients and other chemicals to the underlying groundwater system. These objectives are to be achieved by: (1) encouraging best management practices, (2) being an active stakeholder regarding water-resources issues throughout the Santa Ynez River watershed, (3) maintaining streamflow and groundwater monitoring within the Lompoc groundwater basin, (4) cooperating with other agencies in maintaining streamflow monitoring throughout the Santa Ynez River watershed, (5) maintaining a database of water-quality information and periodically analyzing the compiled data for adverse trends, and (6) using the compiled data to optimize the City's groundwater pumping with respect to the water-supply salinity.

The City has relative little control over groundwater salinity, because groundwater salinity is dependent on the Santa Ynez River streamflow salinity at the Narrows. Under the implementations of State Water Resources Control Board Order 89-18, the Cachuma Project Settlement Agreement, and the National Marine Fisheries Service Biological Opinion, the groundwater system has been stable with respect to salinity, and that condition is expected to continue provided there are no signicant changes in Cachuma operations. Were groundwater salinity to start showing a sustained upward trend, the City's primary actions would be to: (1) conduct appropriate evaluations to determine the cause, (2) optimize the geographic distribution of City pumping to minimize water-treatment costs, and (3) encourage the optimal utilization of the Below Narrows Account storage within Cachuma Reservoir. Reducing water use during a drought most likely would have little impact on groundwater salinity.

BMO-02 – Maintain groundwater elevations that result in a net benefit to basin groundwater users. Groundwater levels within the Lompoc basin are affected mostly by recharge from the Santa Ynez River, and pumping by the City, agricultural producers, and others.

A dynamic equilibrium exists between recharge and pumping within the Lompoc groundwater basin such that long-term groundwater levels are stable. Groundwater levels fluctuate seasonally due to the seasonalities of recharge and pumping, and they fluctuate from year to year due to the year to year variations in Santa Ynez River streamflow at the Narrows. While long-term groundwater levels are static, significant groundwater level declines can occur during drought periods due to reduced Santa Ynez River streamflow at the Narrows and correspondingly reduced recharge, but groundwater levels historically have recovered after each drought. The streamflow at the Narrows includes both tributary runoff downstream from Bradbury Dam and releases from Cachuma Reservoir. The reservoir releases are regulated by State Water Resources Control Board Order 89-18 and the National Marine Fisheries Service Biological Opinion. The historical effect of the State Board Order has been to produce stable long-term groundwater levels and acceptable groundwater levels during droughts. However, the impacts of the Biological Opinion and its possible revision create uncertainty.

Groundwater levels within the City limits are affected by municipal groundwater pumping by the City and agricultural groundwater pumping within adjacent areas. However, the groundwater pumping by the City and agricultural producers is balanced by recharge from Santa Ynez River streamflow.

The City supports four monitoring programs with respect to water supply. Firstly, the City meters the production from each of its water-supply wells. Secondly, the City monitors groundwater levels within its wells. Thirdly, the City cooperates with other agencies in collecting groundwater level data throughout the Lompoc groundwater basin, including a cooperative program with the USGS. Fourthly, the City cooperates with other agencies to fund USGS monitoring of Santa Ynez River streamflow at the Narrows and two downstream locations.

The City's objectives with respect to groundwater supply are to promote: (1) an operation of Cachuma Reservoir that produces the optimal streamflow at the Narrows with respect to groundwater recharge from the Santa Ynez River, and (2) water-use and wastewater-disposal practices throughout the Santa Ynez River watershed that protect Santa Ynez River streamflow at the Narrows. These objectives are to be achieved by: (1) encouraging best management practices, (2) being an active stakeholder regarding water-resources issues throughout the Santa Ynez River watershed, (3) maintaining streamflow and groundwater monitoring within the Lompoc groundwater basin, (4) cooperating with other agencies in maintaining streamflow monitoring throughout the Santa Ynez River watershed, (5) maintaining a database of streamflow and groundwater-level information and periodically analyzing the compiled data for adverse trends, and (6) using the compiled data to optimize the City's groundwater pumping with respect to groundwater levels.

The City has relative little control over groundwater levels, because groundwater recharge is dependent mostly on the Santa Ynez River streamflow at the Narrows. Under the implementations of State Water Resources Control Board Order 89-18, the Cachuma Project Settlement Agreement, and the National Marine Fisheries Service Biological Opinion, the groundwater system has been stable with respect to groundwater levels, and that condition is expected to continue provided there are no signicant changes in Cachuma operations. Nevertheless, were groundwater levels to start showing a significant downward trend during a drought, the City's primary actions would be to: (1) conduct appropriate evaluations to determine the cause, (2) optimize the geographic distribution of City pumping to maintain the operability of wells, (3) encourage the optimal utilization of the Below Narrows Account storage within Cachuma Reservoir, and (4) reduce water use.

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BMO-03 – Minimize the risk of future significant impact due to inelastic land subsidence. Land subsidence resulting from groundwater-level declines has not been observed within the Lompoc groundwater basin. Furthermore, the risk of future significant impacts is very small because long-term groundwater levels have been static, and the expectation is for that condition to persist into the future under the continuing operation of Cachuma Reservoir under State Water Resources Control Board Order 89-18, the Cachuma Reservoir Settlement Agreement, and the National Marine Fisheries Service Biological Opinion. The threshold for the potential occurrence of land subsidence is for groundwater levels to decline below historical lows measured during the 1987-1992 drought. The City's objective is to prevent or minimize future impacts that may result from land subsidence in and around its service area by being aware of the threshold for the potential occurrence of subsidence.

BMO-04 – Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping. The groundwater system and the Santa Ynez River represent a dynamically connected pair. The recharge from the river is affected by groundwater levels near the river and the groundwater salinity is affected by the streamflow salinity. An objective of the City is to protect the beneficial aspects of those relations. The particulars and approaches to achieving that objective are described above under BMO-01 and BMO-02.

BMO-05 – Protect against the risk of impacts to groundwater levels or groundwater quality caused by changes in surface water flows or surface water quality. Groundwater levels and quality within the City limits are strongly affected by the quantity and salinity of recharge from the Santa Ynez River. A fundamental objective of the City is to protect that recharge. The particulars and approaches to achieving that objective are described above under BMO-01 and BMO-02.

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Stakeholder Meeting

City of Lompoc

Groundwater Management Plan Development

Discussion of Preliminary Draft
Basin Management Objectives

November 13, 2012
City of Lompoc Council Chambers

Outline

- Purpose and Overall Goal
- Plan Development Process and Schedule
- Hydrologic Setting
- Preliminary Draft Basin Management Objectives

Outline

- **Purpose and Overall Goal**
- Plan Development Process and Schedule
- Hydrologic Setting
- Preliminary Draft Basin Management Objectives

Purpose of the Groundwater Management Plan

The City of Lompoc is preparing a Groundwater Management Plan for its service area to support its groundwater management goal and meet requirements of the California Water Code Section (§ 10750 *et. seq.*)

Overall Groundwater Management Goal

Work cooperatively with basin stakeholders and the public to maintain a sustainable, reliable supply of high quality groundwater for beneficial use in the City of Lompoc service area and surrounding areas.

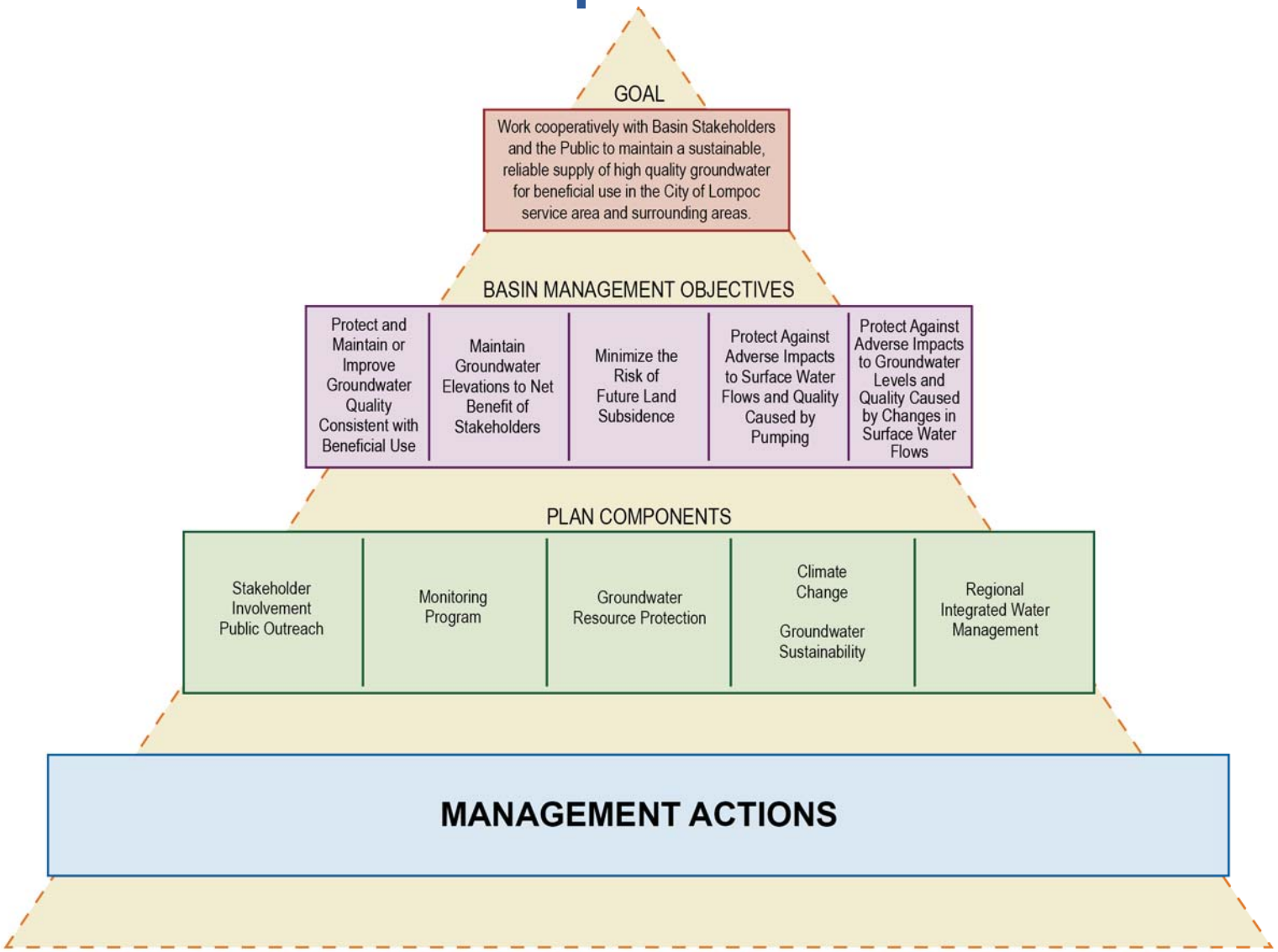
What are Basin Management Objectives (BMOs)?

BMOs support the City's overall groundwater management goal by identifying and prioritizing the most important issues in meeting water resources needs.

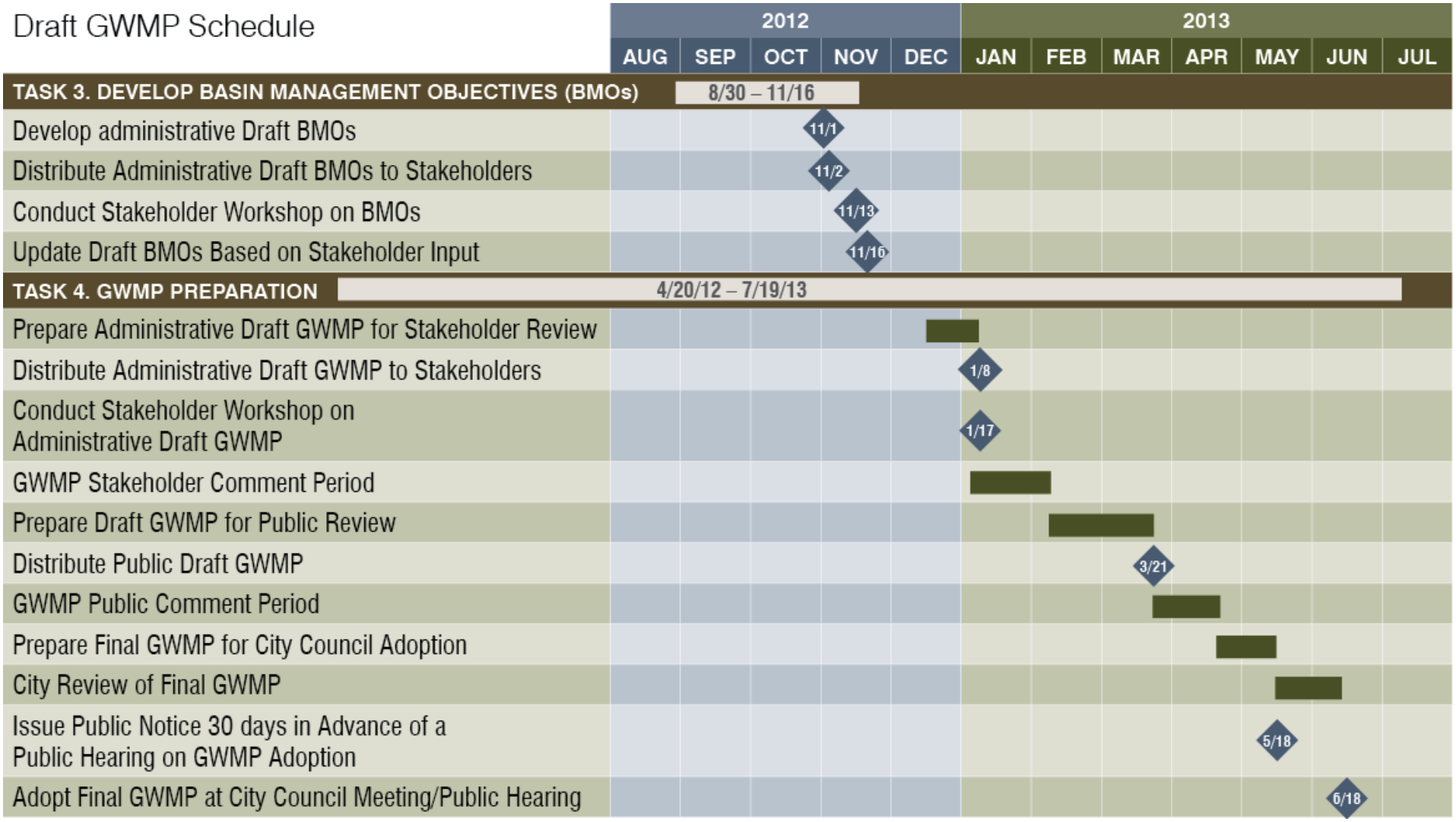
Outline

- Purpose and Overall Goal
- **Plan Development Process and Schedule**
- Hydrologic Setting
- Preliminary Draft Basin Management Objectives

Plan Development Process



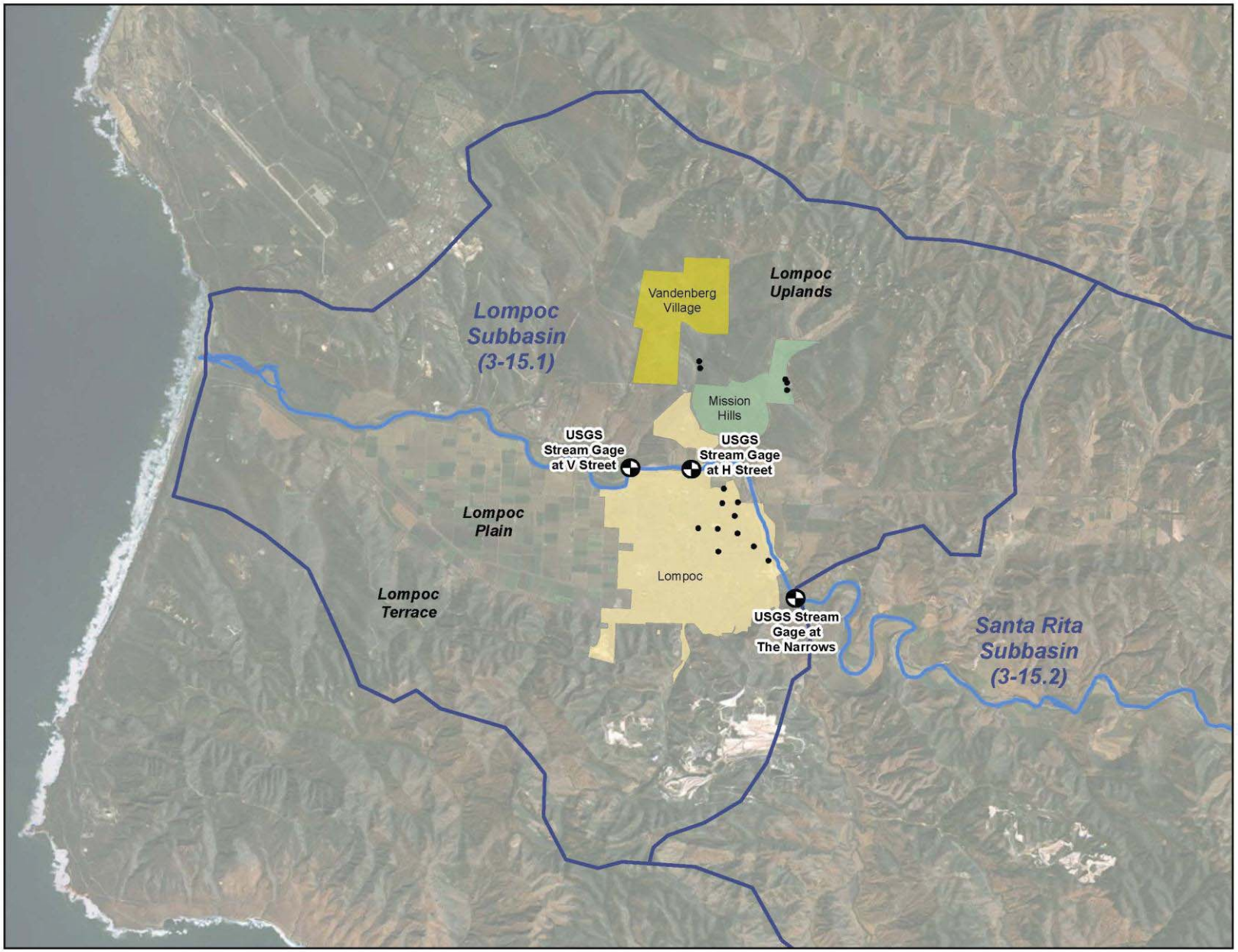
Schedule


Draft GWMP Schedule
2012
2013
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
TASK 3. DEVELOP BASIN MANAGEMENT OBJECTIVES (BMOs)
8/30 – 11/16
Develop administrative Draft BMOs
11/1
Distribute Administrative Draft BMOs to Stakeholders
11/2
Conduct Stakeholder Workshop on BMOs
11/13
Update Draft BMOs Based on Stakeholder Input
11/16
TASK 4. GWMP PREPARATION
4/20/12 – 7/19/13
Prepare Administrative Draft GWMP for Stakeholder Review
Distribute Administrative Draft GWMP to Stakeholders
1/8
Conduct Stakeholder Workshop on Administrative Draft GWMP
1/17
GWMP Stakeholder Comment Period
Prepare Draft GWMP for Public Review
Distribute Public Draft GWMP
3/21
GWMP Public Comment Period
Prepare Final GWMP for City Council Adoption
City Review of Final GWMP
Issue Public Notice 30 days in Advance of a Public Hearing on GWMP Adoption
5/18
Adopt Final GWMP at City Council Meeting/Public Hearing
6/18

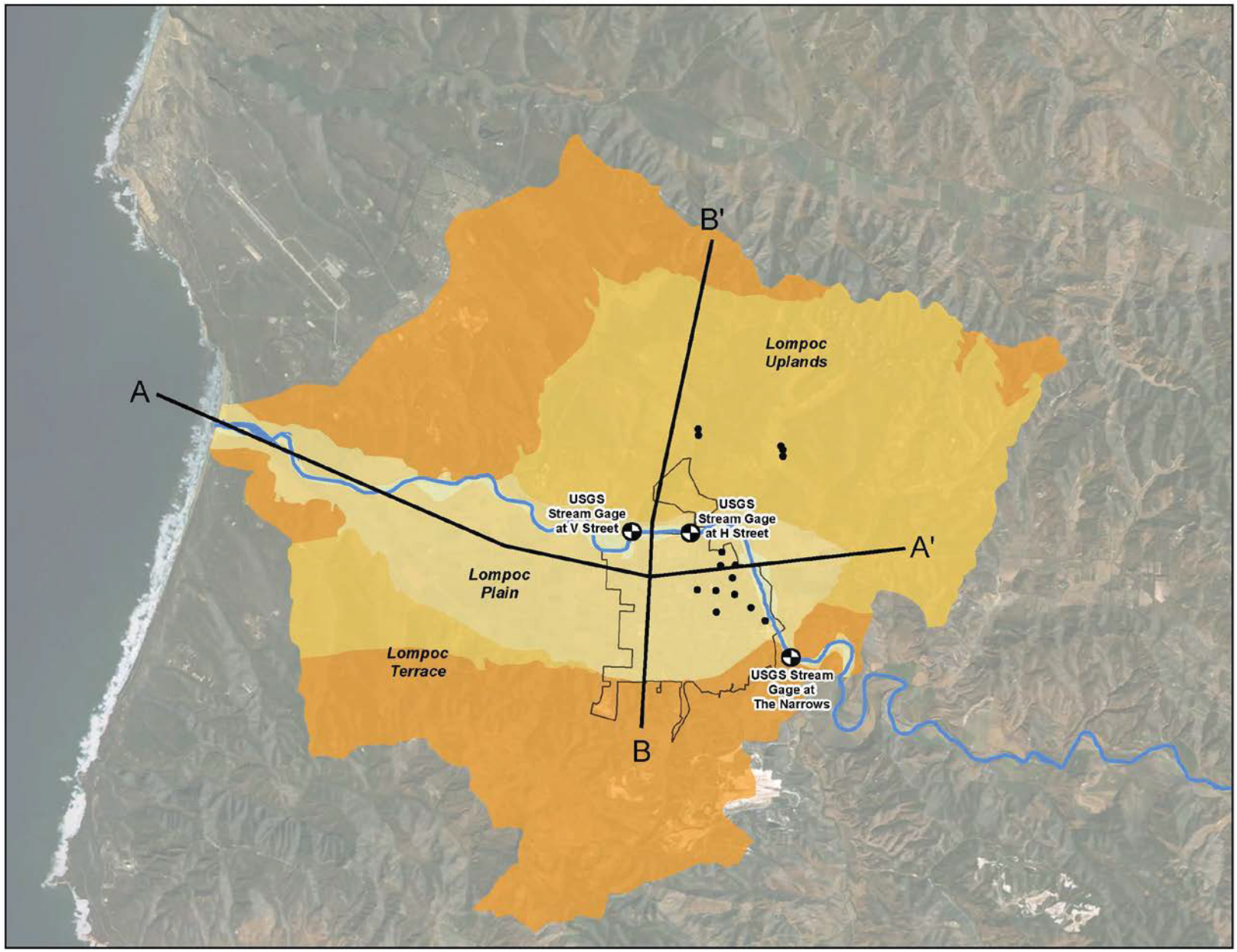
Outline

- Purpose and Overall Goal
- Plan Development Process and Schedule
- **Hydrologic Setting**
- Preliminary Draft Basin Management Objectives

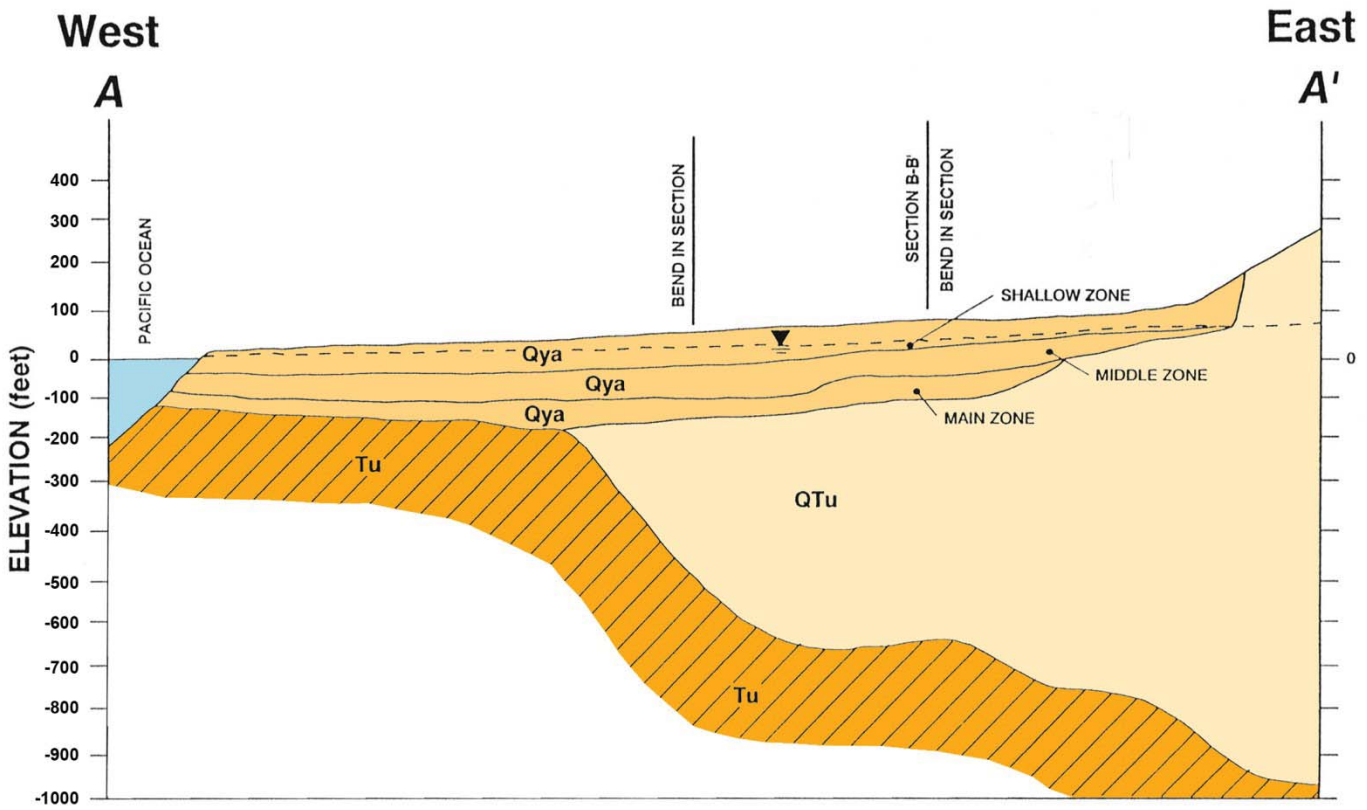
Lompoc Groundwater Subbasin



Cross Section Locations



Cross Section A-A’



EXPLANATION

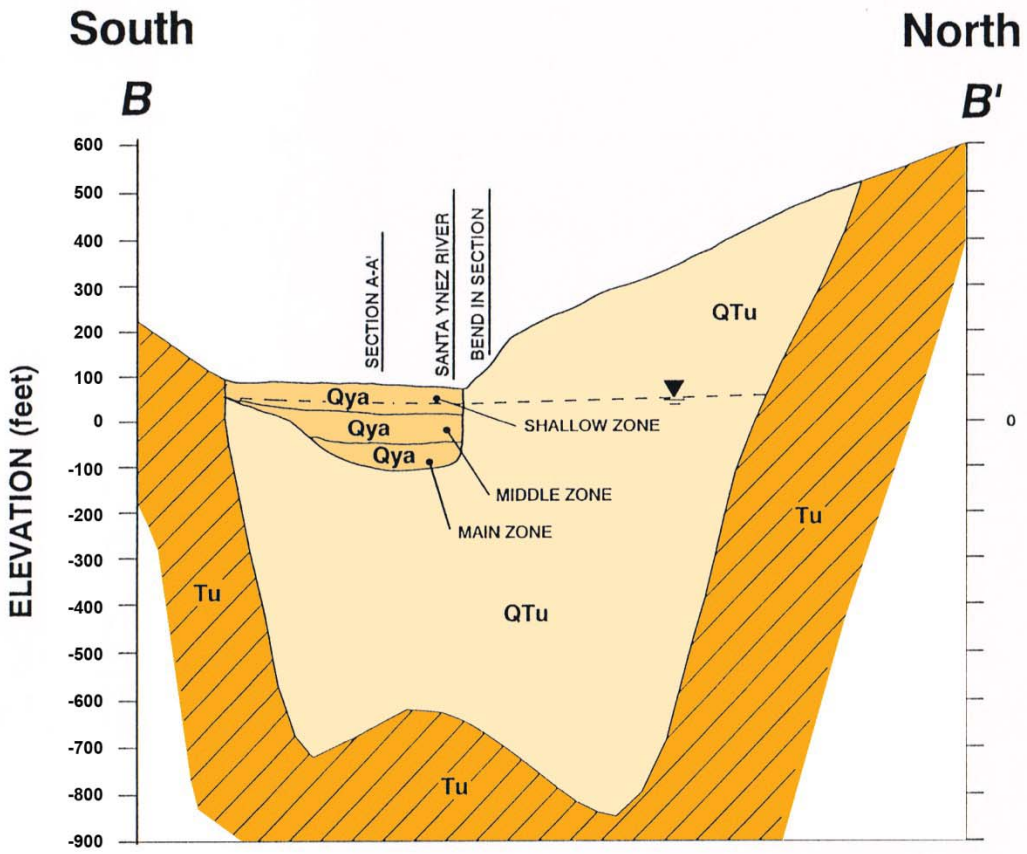
(RIVER-CHANNEL DEPOSITS NOT SHOWN)

Qya	YOUNGER ALLUVIUM
QTu	OLDER CONTINENTAL DEPOSITS
Tu	CONSOLIDATED ROCKS
———	GEOLOGIC CONTACT
– – – –	WATER TABLE

Scale 0 1 2 MILES

GEOLOGY MODIFIED FROM BRIGHT AND OTHERS (1992, PLATE 1) AND UPSON AND THOMASSON (1951)

Cross Section B-B’



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– – – –	WATER TABLE

Scale 0 1 2 MILES

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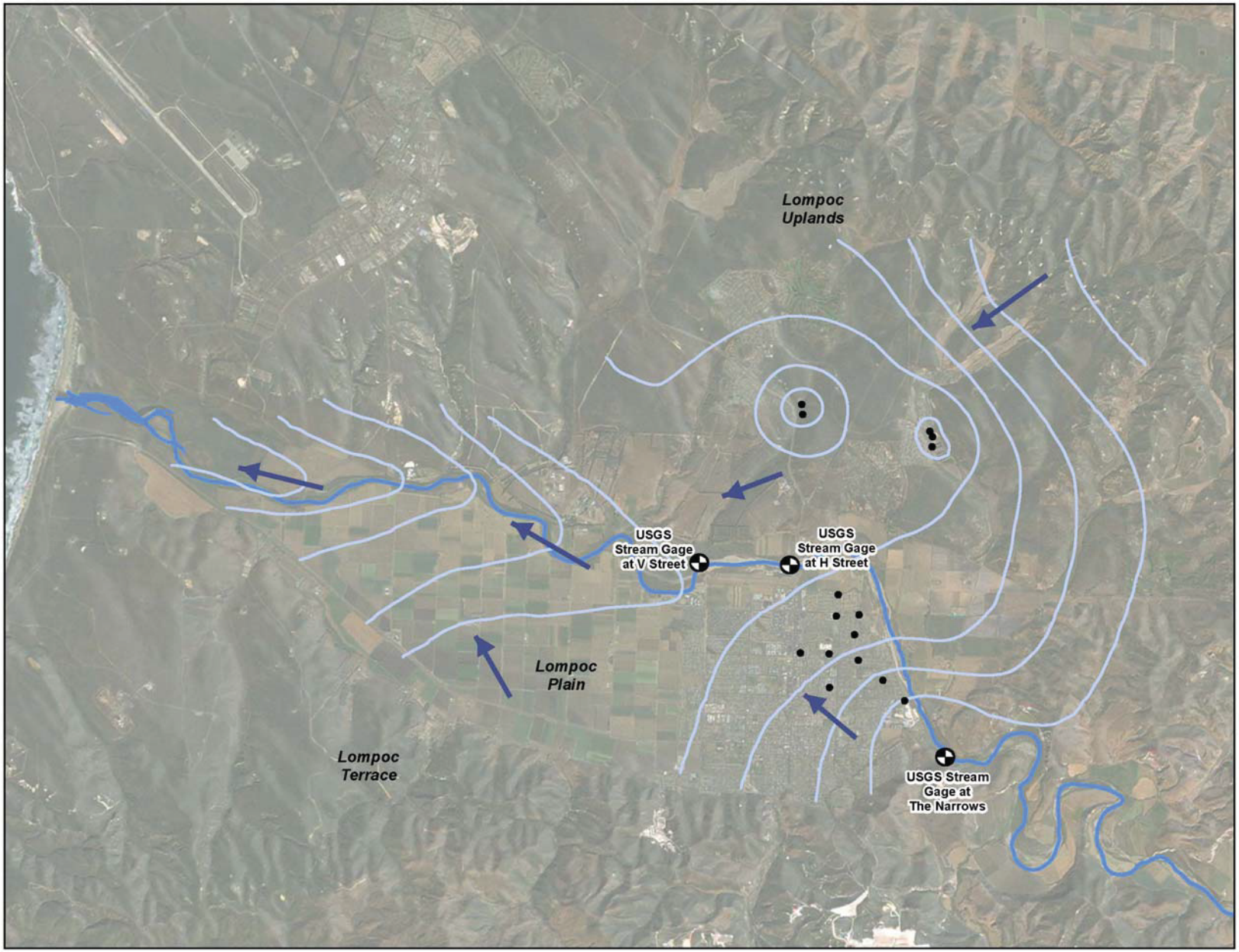
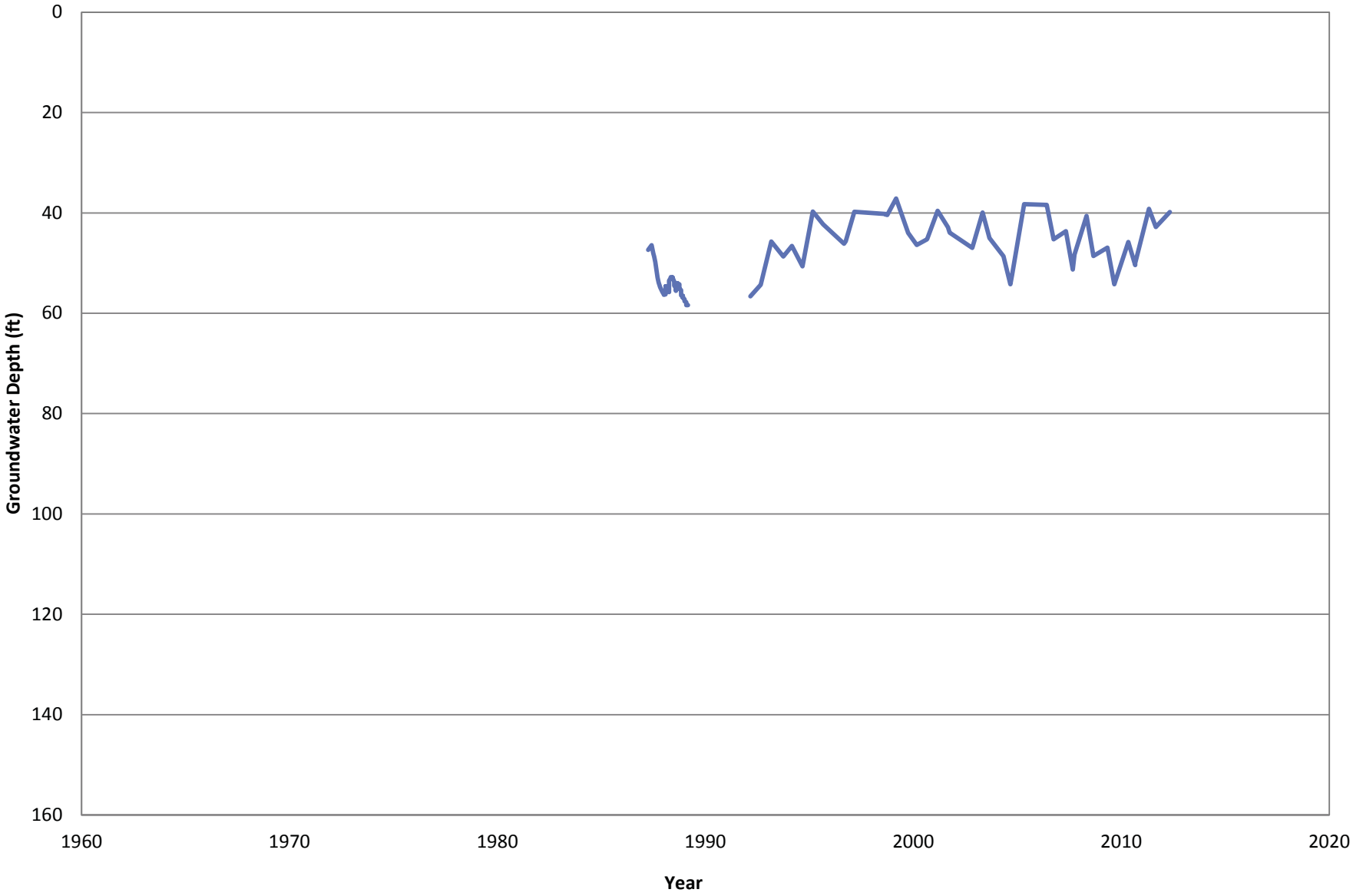
AND UPSON AND THOMASSON (1951)

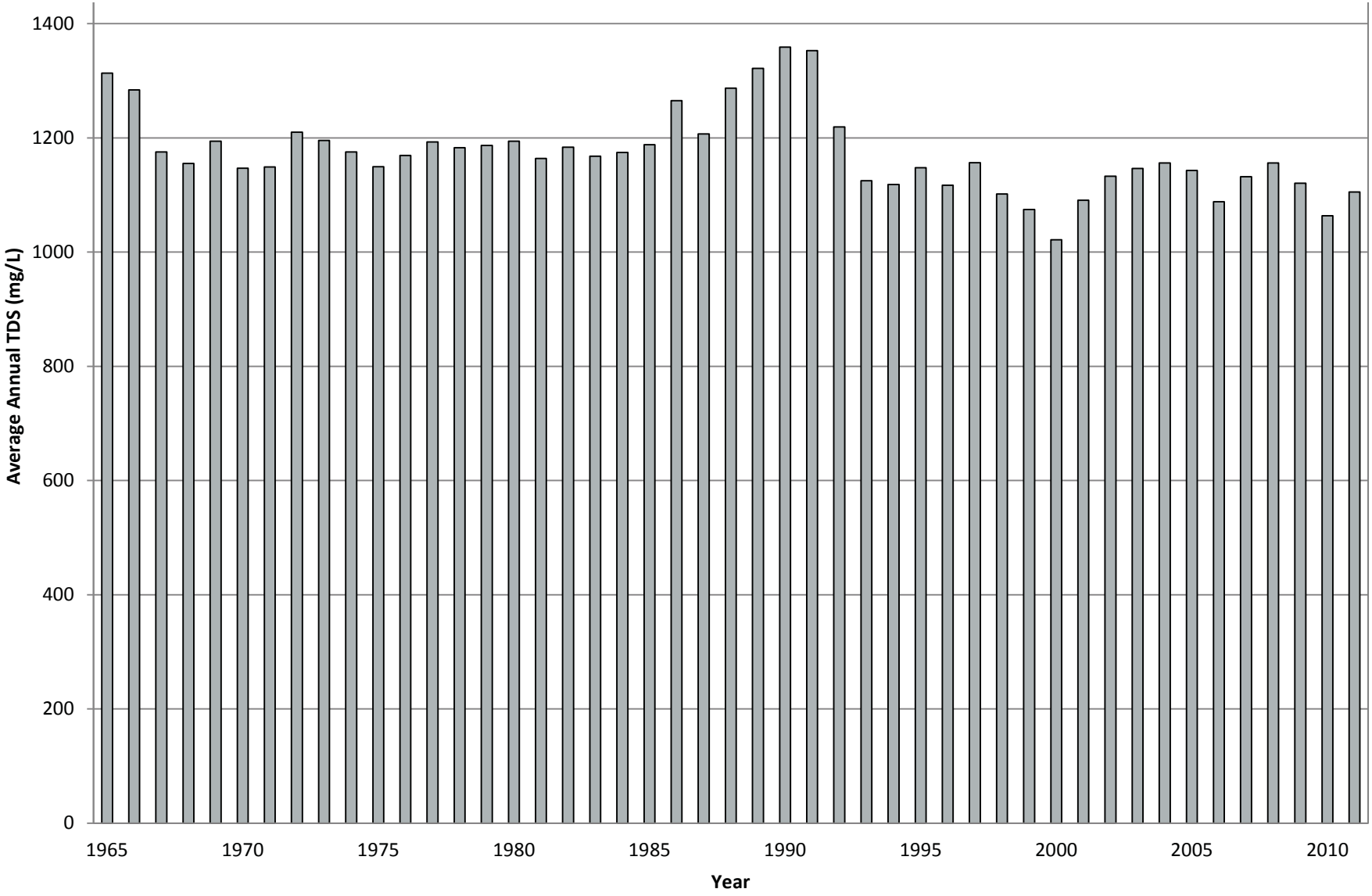
Groundwater Elevation Contours



Groundwater Level Hydrograph



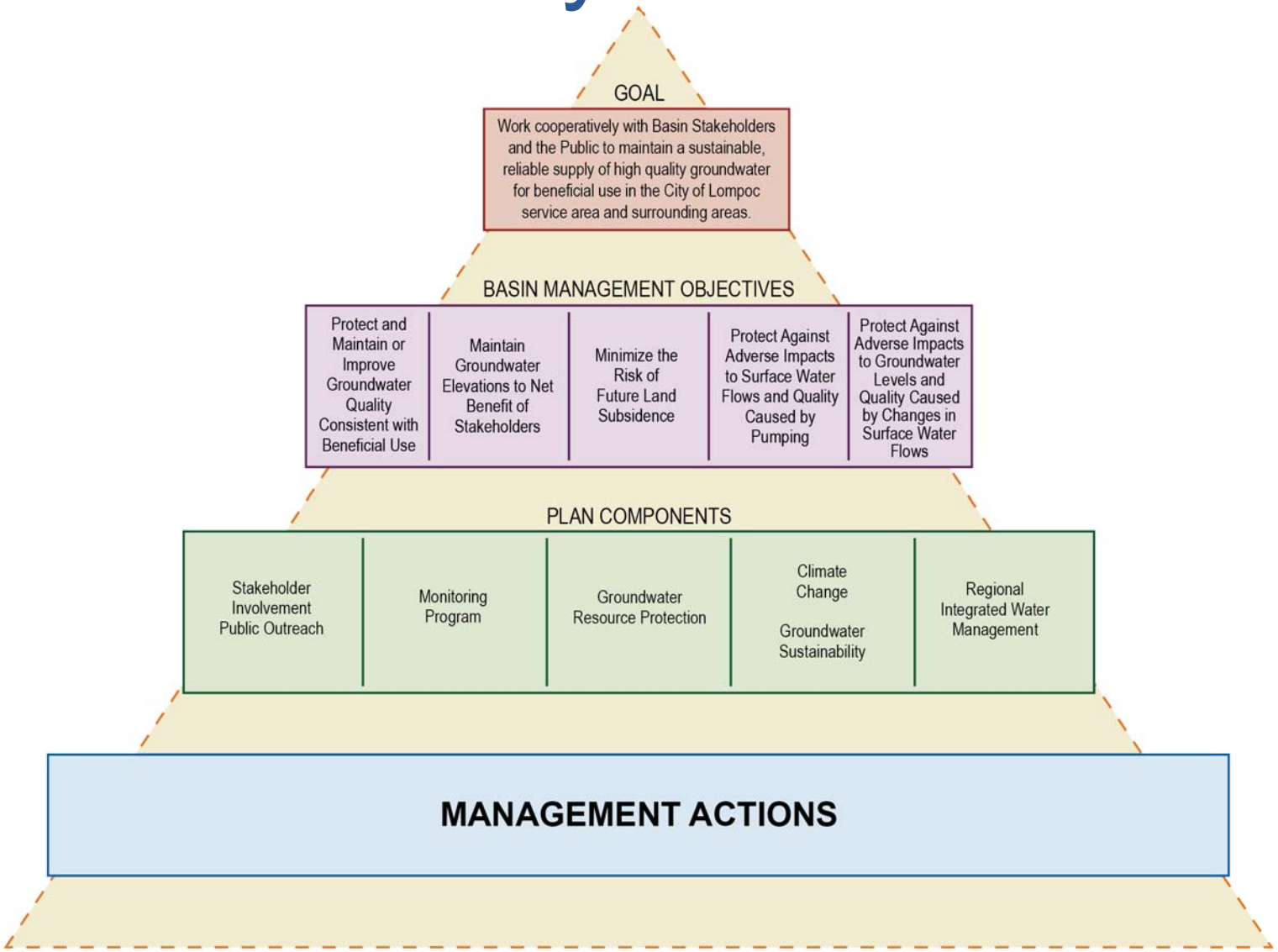
Historical Average Dissolved Solids Delivered to Lompoc Water Treatment Plant



Outline

- Purpose and Overall Goal
- Plan Development Process and Schedule
- Hydrologic Setting
- **Preliminary Draft Basin Management Objectives**

Preliminary Draft BMOs



Institutional Framework

- BMO categories are specified in the water code
- State Board Order 89-18
- Cachuma Project Settlement Agreement
- National Marine Fisheries Service Biological Opinion

Preliminary Draft BMO-01

Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users. Groundwater quality within the City's service area is affected by both the groundwater recharge that occurs from the Santa Ynez River and impacts from point and nonpoint contaminant sources.

Preliminary Draft BMO-02

Maintain groundwater elevations that result in a net benefit to basin groundwater users. Groundwater levels within the Lompoc basin are affected mostly by recharge from the Santa Ynez River, and pumping by the City, agricultural producers, and others.

Preliminary Draft BMO-03

Minimize the risk of future significant impact due to inelastic land subsidence. Land subsidence resulting from groundwater-level declines has not been observed within the Lompoc groundwater basin.

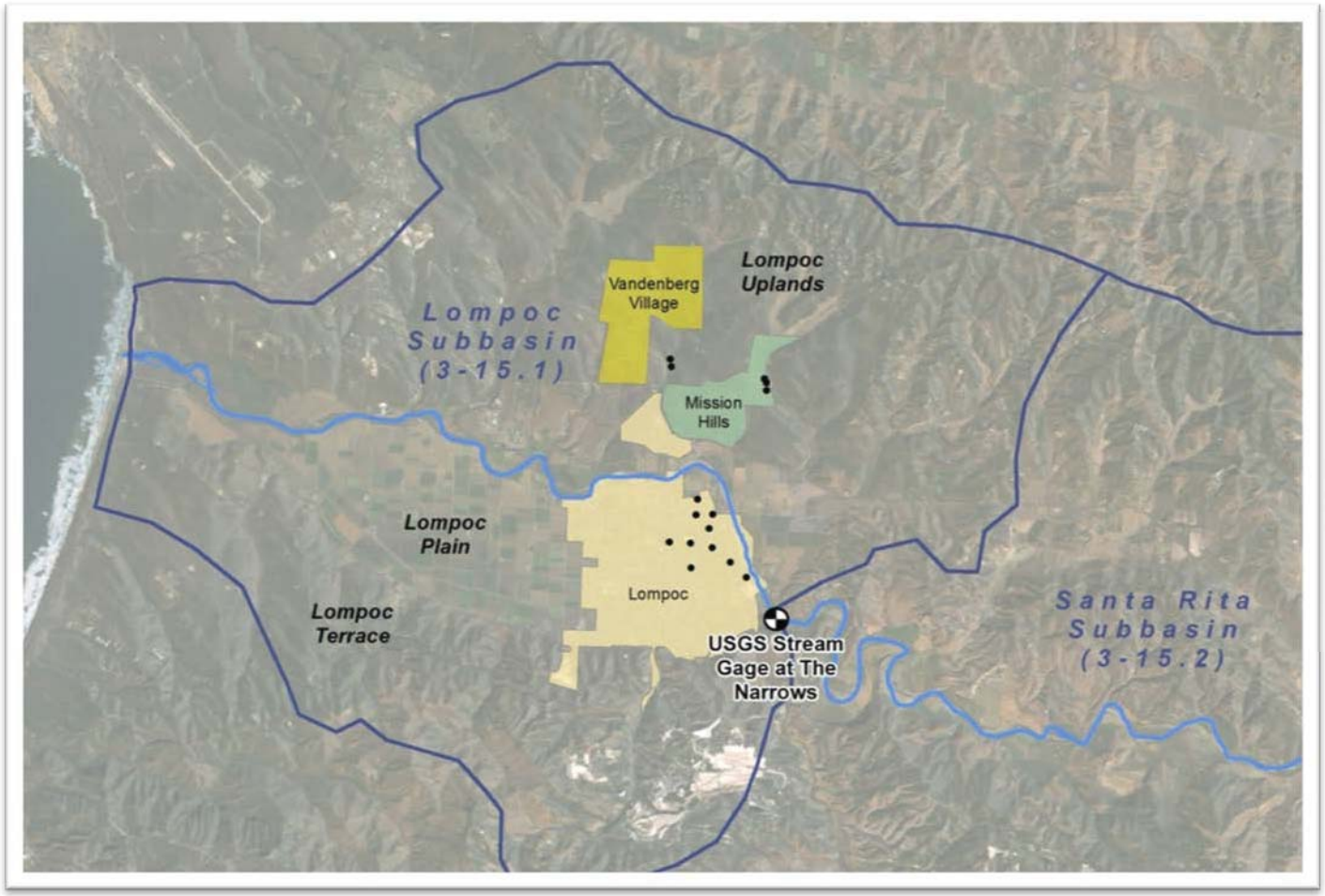
Preliminary Draft BMO-04

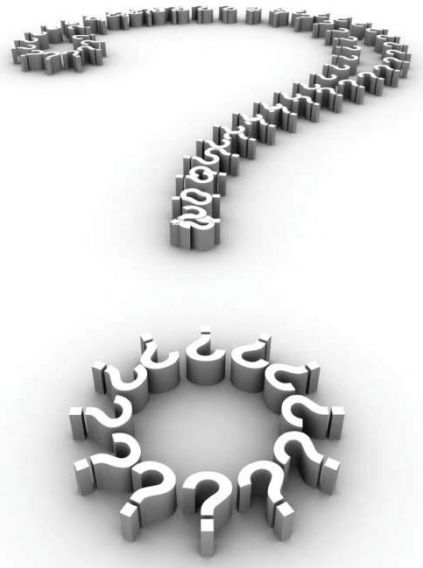
Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping. The groundwater system and the Santa Ynez River represent a dynamically connected pair. The recharge from the river is affected by groundwater levels near the river and the groundwater salinity is affected by the streamflow salinity. An objective of the City is to protect the beneficial aspects of those relations.

Preliminary Draft BMO-05

Protect against the risk of impacts to groundwater levels or groundwater quality caused by changes in surface water flows or surface water quality. Groundwater levels and quality within the City limits are strongly affected by the quantity and salinity of recharge from the Santa Ynez River. A fundamental objective of the City is to protect that recharge.

Questions or Comments?





APPENDIX A.4

July 3, 2013 Stakeholder Meeting to Discuss
the Draft Groundwater Management Plan

Lee Central Coast Newspapers

Santa Maria Times • Lompoc Record
Santa Ynez Valley News • Space Country Times
Five Cities Times Press Recorder • The Adobe Press

FIRST INVOICE

Lee Central Coast Newspapers
Financial Services
PO BOX 717, Provo, UT 84603-0717
805-925-2691
Make checks payable to: Lee Central Coast Newspapers

CITY OF LOMPOC (LEGALS)
FINANCE
PO BOX 8001
LOMPOC CA 93438

Customer Nbr: 60000593
Phone: (805) 875-8241
Date: 07/01/2013
Page: 1

Amount Paid: _____ Card # : _____ Exp Date: ____/____

Check # : _____ Signature: _____

Date: 06/28/2013 **Ref #:** 7313 **Total:** 175.38

Date	Reference #	Type	Description	Lines	Total
06/28/13	7313	INV	NOTICE OF A PUBLIC MEETING CIT	79	175.38

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util D
APPROVED FOR PAYMENT
BY Susan Segovia
ACCT 51000 - 53313

Remarks:

Total Due: 175.38

*** Proof of Publication ***

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA.

LOMPOC RECORD

CITY OF LOMPOC (LEGALS)
PO BOX 8001
LOMPOC, CA 93438

ORDER NUMBER 7313

I AM THE PRINCIPAL CLERK OF THE PRINTER OF THE LOMPOC RECORD, NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED IN THE CITY OF LOMPOC, COUNTY OF SANTA BARBARA, AND WHICH NEWPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATON BY THE SUPERIOR COURT OF THE COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, ADJUDICATION #47065.

THAT THE NOTICE OF WHICH THE ANNEXED IS A PRINTED COPY (SET IN TYPE NOT SMALLER THAT NONPAREIL), HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO-WIT:

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURE THAT THE FOREGOING IS TRUE AN CORRECT.

PUBLISHED ON: 06/21/2013, 06/28/2013

TOTAL AD COST:	175.38
FILED ON:	6/28/2013

DATED AT SANTA MARIA, CA THIS 28th DAY OF June 20 13

Teresa Ramirez
SIGNATURE

NOTICE OF A PUBLIC MEETING
CITY OF LOMPOC DRAFT
GROUNDWATER MANAGEMENT
PLAN (GWMP)

The City of Lompoc (City) has prepared a draft Groundwater Management Plan (GWMP) pursuant to California Water Code (CWC) Section 10750 et. seq: for the portions of its water service area overlying the Lompoc Groundwater Basin. The City recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a GWMP will support this goal and help the City meet requirements in the CWC.

Notice is hereby given that the City is convening a public meeting to discuss the draft GWMP with interested parties at 2:00 pm on July 3, 2013. The meeting will take place at the following location:

City Council Chambers
100 Civic Center Plaza
Lompoc CA 93436

The draft GWMP will continue to be discussed at publicly noticed meetings. Interested parties may participate in the development of the final GWMP by attending these meetings and providing comments to members of the City Council and the Utility Commission. At a future date, the City Council will hold a Public Hearing to provide interested members of the public with an opportunity to express their opinions and hear the City Council's deliberations of whether or not to adopt the GWMP.

Additional information and a copy of the draft GWMP may be viewed at the City's website at http://www.cityoflompoc.com/. Printed copies may be obtained for the cost of reproduction. Printed copies of the draft GWMP can be viewed at the following locations:

City Hall, 100 Civic Center Plaza, Lompoc CA 93438
Lompoc Public Library, 501 E. North Avenue, Lompoc, CA 93436

Interested members of the public may obtain information at the City website at http://www.cityoflompoc.com/ or by contacting Susan Segovia, Senior Administrative Analyst, at the City's Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

Legal #7313
Pub dates: Jun 21 & Jun 28, 2013

WEST YOST ASSOCIATES
Consulting Engineers

LOMPOC CALIFORNIA CITY OF ARTS & FLOWERS

City of Lompoc
Public and Stakeholder Meeting
Draft Groundwater Management Plan
July 3, 2013

LIST OF ATTENDEES

Name	Representing	Email	Phone
Bob Wyckoff	VVCSD	rewyckoff@verizon.net	~~733~~ 1334635
Chris Brooks	VVCSD	cbrooks@sbcea.org	
ED TURPIN	FBOP	ETurpin@Bop.Gov	
KEVIN HAWLEY	FBOP	KHAWLEY@BOP.GOV	
Gene Mayhem	city of Lompoc		
Bob Holloway	Utilities Comm	BhoL@Verizon.net	805-735-3252
Vern Mosby	Utilities Comm	mosbyenterprises@aol.com	801-2362
Ron Bock	Self / LTP	ronbock@verizon.	736-1344
Larry Bean	Lompoc		
ERIC ERLAND	LOMPOC	e_erland@ci.lompoc.ca.us	
Edward Wanner	Same		922 3197
Helen Duncan			922-5197
Fred T. Hayes	FBOP	Fhayes@Bop.Gov	
Susan Segovia	City of Lompoc	s_segovia@ci.lompoc.ca.us	805-875-8247

Letters to Stakeholders Announcing July 3, 2013 Meeting
to Discuss Draft Groundwater Management Plan

CITY OF
LOMPOC

June 14, 2013

Warden Ives
Federal Correctional Institute
3901 Klein Road
Lompoc, CA 93436

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Warden Ives:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

The City is convening a meeting to discuss the draft Groundwater Management Plan with interested stakeholders at 2:00 pm on Wednesday, July 3, 2013. The meeting will take place at the following location:

City of Lompoc
City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

City staff and consultants will be on hand to provide an overview of the draft GWMP and to answer any questions concerning the GWMP.

The draft GWMP will continue to be discussed at publicly noticed meetings of the Lompoc City Utility Commission and will be discussed and proposed for adoption at a Public Hearing during a Lompoc City Council meeting. Interested parties may provide input about the draft GWMP by attending these meetings, providing comments to members of the City Council and the Utility Commission, and by providing comments to Susan Segovia, Senior Administrative Analyst for the City of Lompoc Utilities Department by email, s_segovia@ci.lompoc.ca.us or by telephone (805)875-8297. The draft GWMP will also be posted on the City of Lompoc's website, www.cityoflompoc.com, and hard copies will be available for review at the City of Lompoc's City Hall, 100 Civic Center Plaza and the City of Lompoc's Public Library, 501 East North Avenue in Lompoc.

Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Mr. Espinoza
Big E Produce
PO Box 1117
Lompoc, CA 93438

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Espinoza:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Mr. Wineman
PO Box 109
Santa Maria, CA 93456

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Wineman:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City of Lompoc
City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

City staff and consultants will be on hand to provide an overview of the draft GWMP and to answer any questions concerning the GWMP.

The draft GWMP will continue to be discussed at publicly noticed meetings of the Lompoc City Utility Commission and will be discussed and proposed for adoption at a Public Hearing during a Lompoc City Council meeting. Interested parties may provide input about the draft GWMP by attending these meetings, providing comments to members of the City Council and the Utility Commission, and by providing comments to Susan Segovia, Senior Administrative Analyst for the City of Lompoc Utilities Department by email, s_segovia@ci.lompoc.ca.us or by telephone (805)875-8297. The draft GWMP will also be posted on the City of Lompoc's website, www.cityoflompoc.com, and hard copies will be available for review at the City of Lompoc's City Hall, 100 Civic Center Plaza and the City of Lompoc's Public Library, 501 East North Avenue in Lompoc.

Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Mrs. Luna
Village Country Club
4300 Clubhouse Rd.
Lompoc, CA 93436

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mrs. Luna:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City of Lompoc
City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

City staff and consultants will be on hand to provide an overview of the draft GWMP and to answer any questions concerning the GWMP.

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Mr. Wales
Santa Ynez River Water Cons. District
PO Box 719
3669 Sagunto Ste., 108
Santa Ynez, CA 93460

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Wales:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Mr. Riley
Mission Hills Comm. Servs. District
1550 E. Burton Mesa Blvd.
Lompoc, CA 93436-2100

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Riley:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq.* The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City of Lompoc
City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

June 14, 2013

Mr. Paxton
Santa Barbara Farms/Ocean View Flws.
1200 Union Sugar Ave.
Lompoc, CA 93436

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Paxton:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Lompoc CA, 93436

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

June 14, 2013

Mr. Campbell
Campbell Ranches
P.O. Box 625
Lompoc, CA 93438

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Campbell:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City Council Chambers
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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

John Bodger & Sons Co.
P.O Box 2709
Lompoc, CA 93438

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Bodger:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City Council Chambers
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Lompoc CA, 93436

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Mr. Rudge
La Purisima Golf Course
3455 Highway 246
Lompoc, CA 93436

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Rudge:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City Council Chambers
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Lompoc CA, 93436

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

June 14, 2013

Mr. Barget
Vandenberg Village CS District
3757 Constellation Rd.
Lompoc, CA 93436

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Barget:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Lompoc CA, 93436

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Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

June 14, 2013

Mr. Jordan
Baroda Farms, Inc.
P.O. Box 427
Lompoc, CA 93438

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Jordan:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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City Council Chambers
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Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Mr. Hibbits
Hibbits Ranch Company, LLC
1251 E. Hwy 246
Lompoc, CA 93436

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Hibbits:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

The City is convening a meeting to discuss the draft Groundwater Management Plan with interested stakeholders at 2:00 pm on Wednesday, July 3, 2013. The meeting will take place at the following location:

City of Lompoc
City Council Chambers
100 Civic Center Plaza
Lompoc CA, 93436

City staff and consultants will be on hand to provide an overview of the draft GWMP and to answer any questions concerning the GWMP.

The draft GWMP will continue to be discussed at publicly noticed meetings of the Lompoc City Utility Commission and will be discussed and proposed for adoption at a Public Hearing during a Lompoc City Council meeting. Interested parties may provide input about the draft GWMP by attending these meetings, providing comments to members of the City Council and the Utility Commission, and by providing comments to Susan Segovia, Senior Administrative Analyst for the City of Lompoc Utilities Department by email, s_segovia@ci.lompoc.ca.us or by telephone (805)875-8297. The draft GWMP will also be posted on the City of Lompoc's website, www.cityoflompoc.com, and hard copies will be available for review at the City of Lompoc's City Hall, 100 Civic Center Plaza and the City of Lompoc's Public Library, 501 East North Avenue in Lompoc.

Additional information may be obtained by contacting Susan Segovia, Senior Administrative Analyst, at the contact information listed above.

Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF LOMPOC

June 14, 2013

Base Civil Engineer
730 CES/CEC
1172 Iceland Ave., Bldg 11433
Vandenberg AFB, CA 93437-6011

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Base Civil Engineer:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

CITY OF
LOMPOC

June 14, 2013

Mr. Naftaly
Santa Barbara County Water Agency
123 E. Anapamu St.
Santa Barbara, CA 93101-2058

SUBJECT: City of Lompoc Draft Groundwater Management Plan Public Meeting, July 3, 2013

Dear Mr. Naftaly:

The City of Lompoc has prepared a draft Groundwater Management Plan (GWMP) for the City of Lompoc service area pursuant to California Water Code Section 10750 *et. seq*. The City of Lompoc recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a Groundwater Management Plan will support this goal and help the City meet requirements in the California Water Code.

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Sincerely,

City of Lompoc

Susan Segovia
Senior Administrative Analyst

Stakeholder Meeting

City of Lompoc

Discussion of Draft
Groundwater Management Plan

July 3, 2013
City of Lompoc Council Chambers

Outline

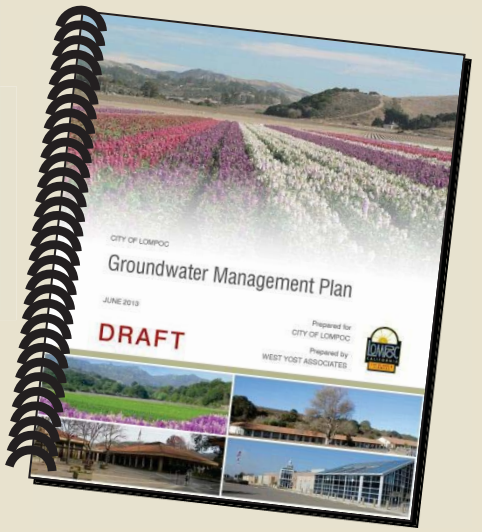
- Purpose, Authority, and Scope
- Plan Development Schedule
- Groundwater Basin Description
- Groundwater Management Goal & Objectives
- Plan Components
- Plan Implementation
- Next Steps

Purpose of the Plan

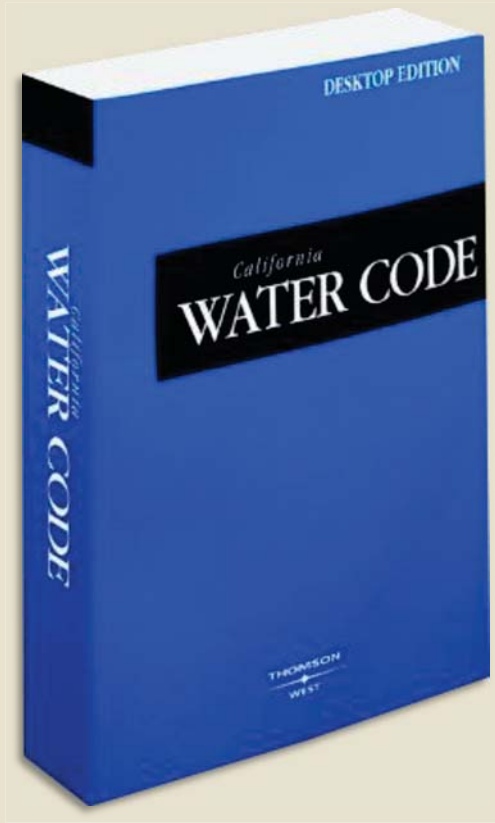
To further the goal of maintaining a "sustainable, reliable, high-quality groundwater supply"

To provide mechanisms for cooperation with other local agencies managing groundwater

Meet requirements of the California Water Code Section (§10750 et. seq.)



Authority and Scope



- CWC 10752 (g): Provides water service within city limits
- CWC 10753 (a): Overlies the Lompoc Groundwater Basin (Part of DWR Basin 3-15)

Outline

- Purpose, Authority, and Scope
- **Plan Development Schedule**
- Groundwater Basin Description
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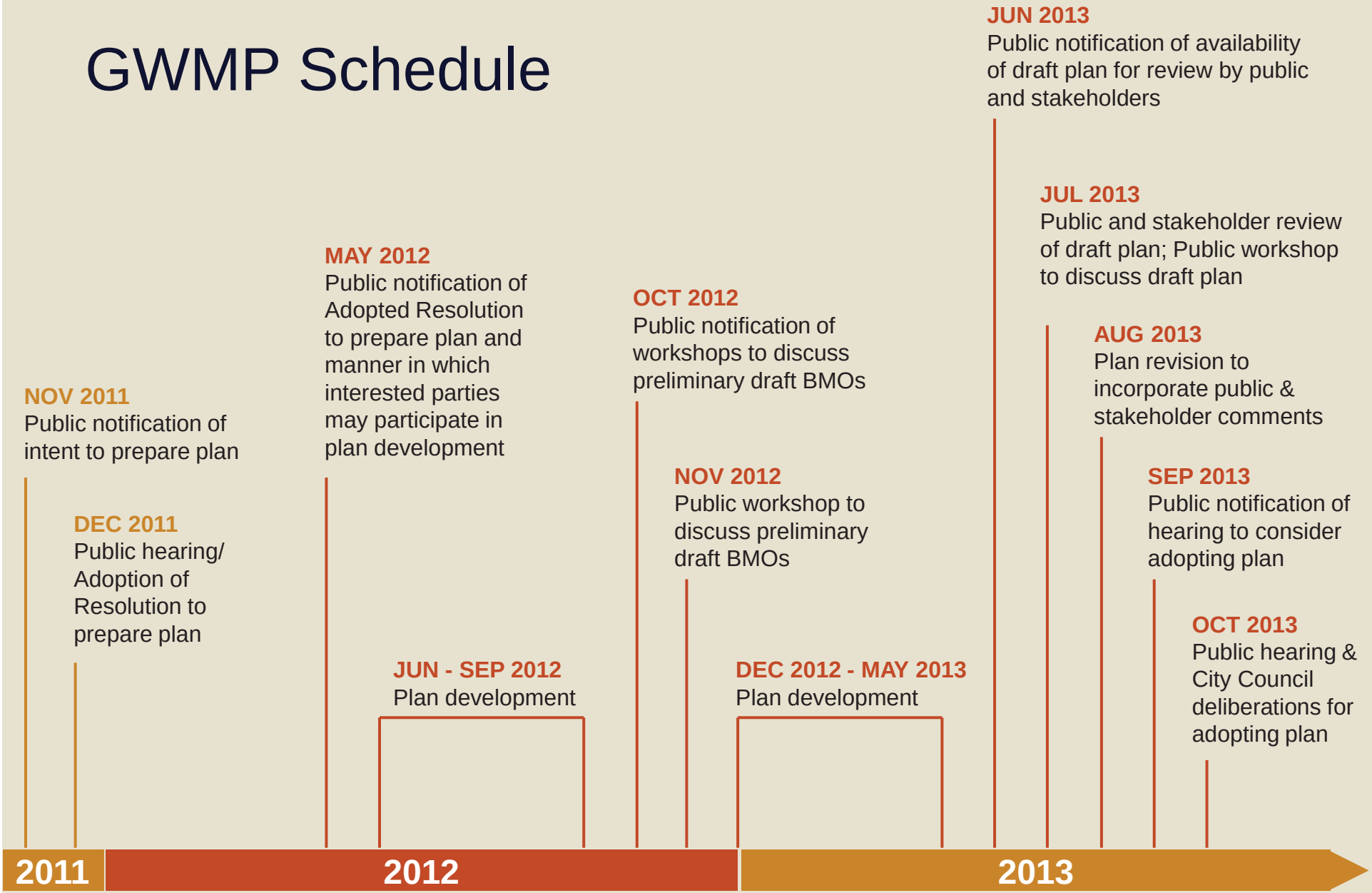
GWMP Schedule



Outline

- Purpose, Authority, and Scope
- Plan Development Schedule
- **Groundwater Basin Description**
- Groundwater Management Goal & Objectives
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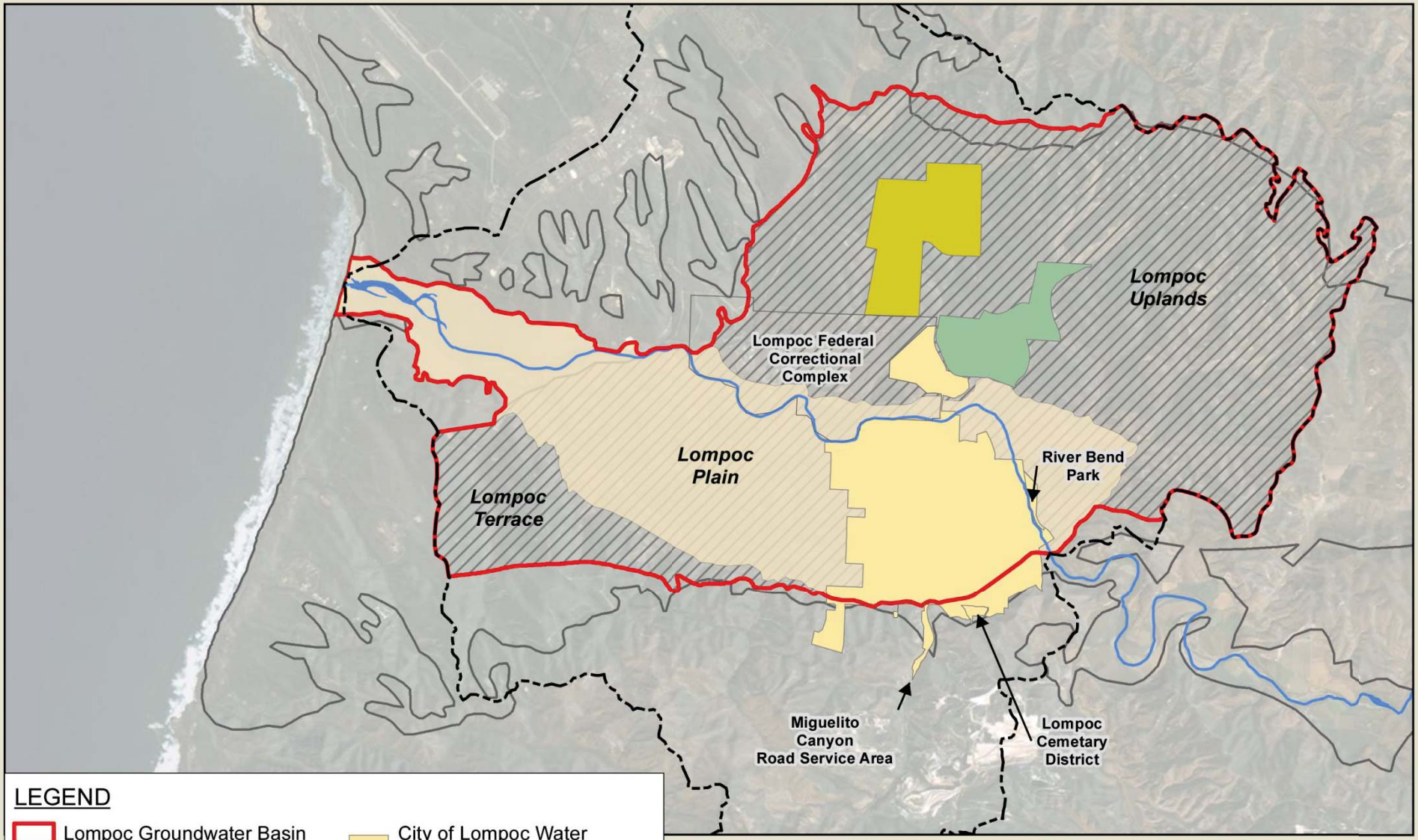
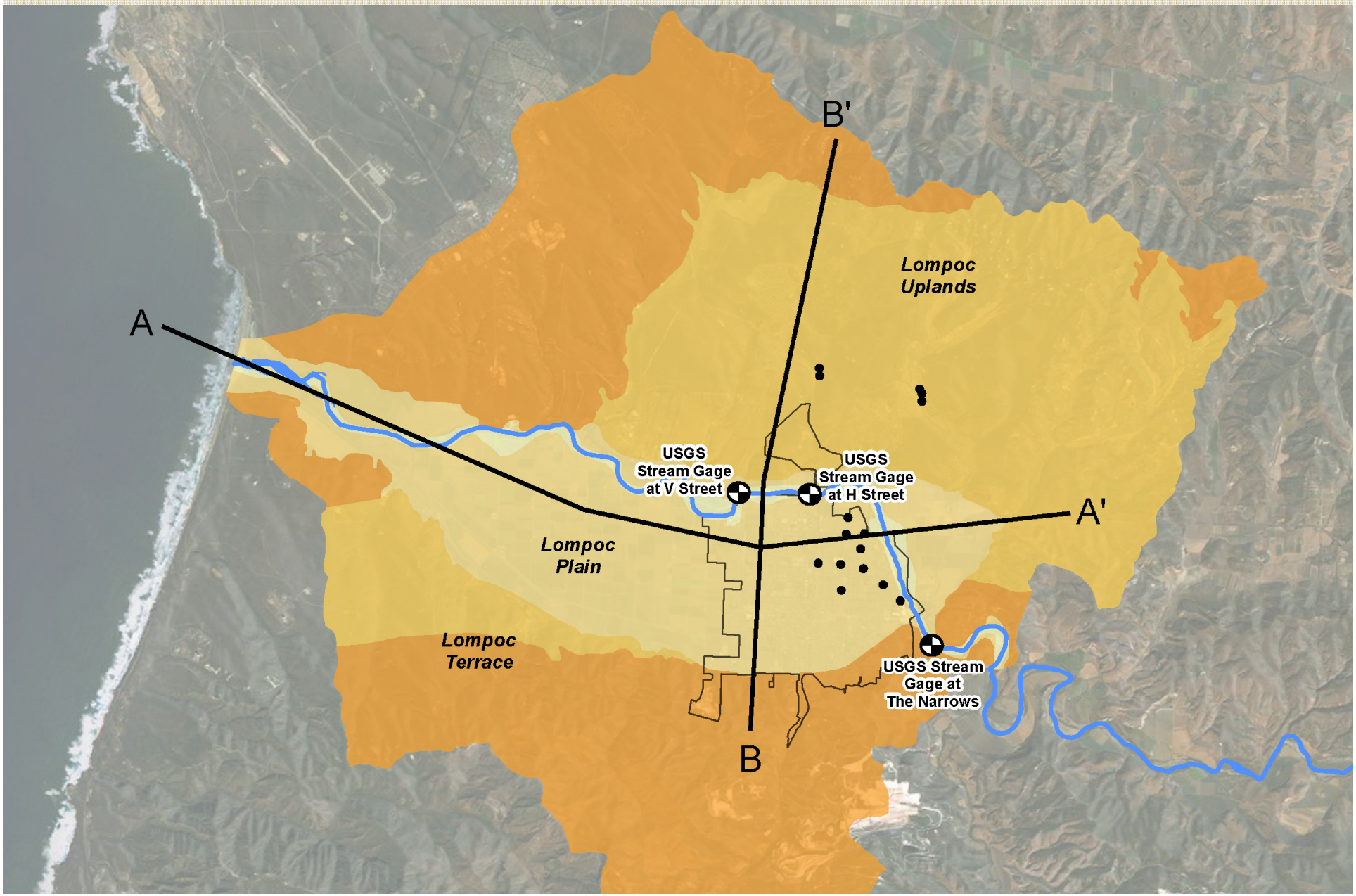
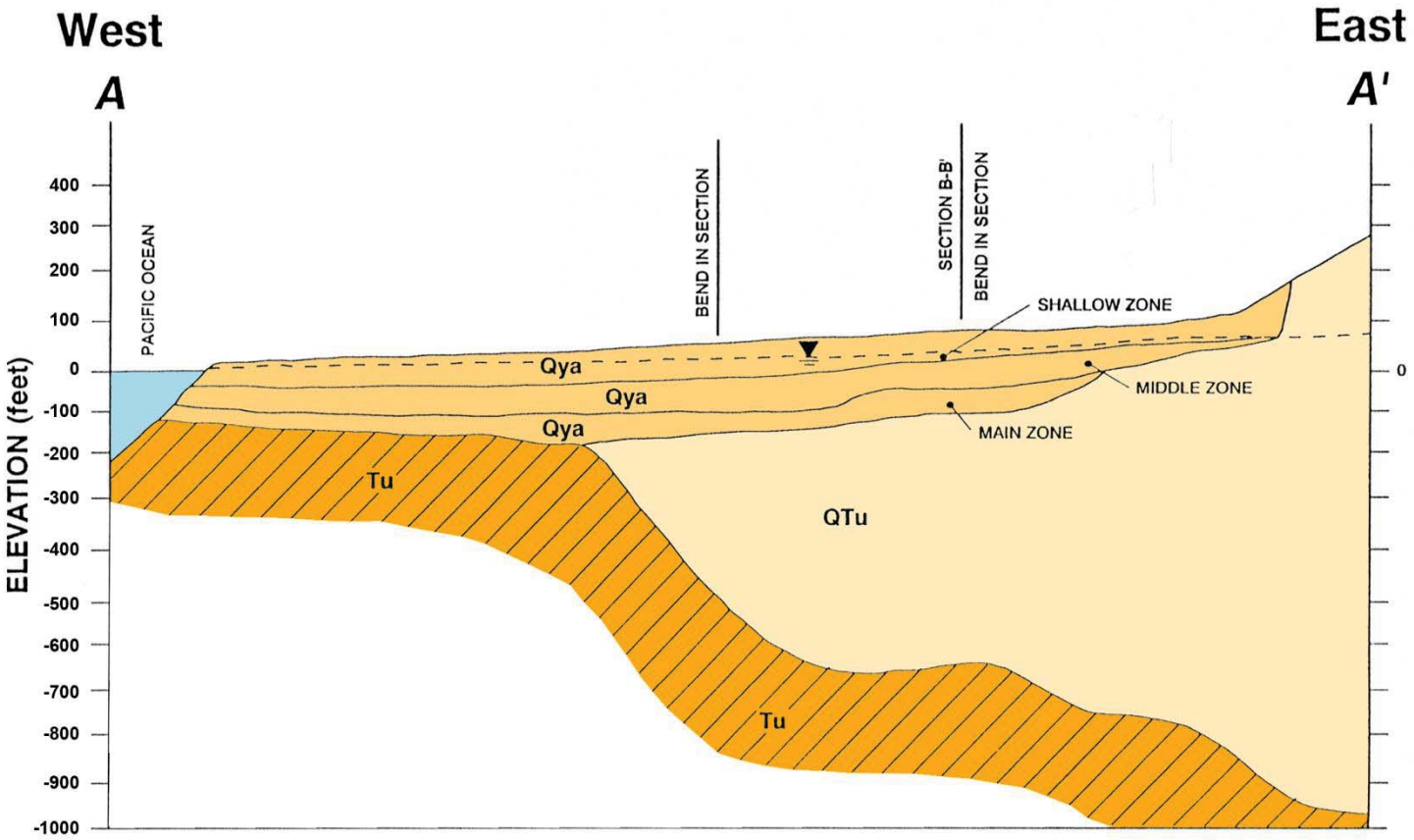


Lompoc Groundwater Subbasin

Cross Section Locations



Cross Section A-A’



EXPLANATION

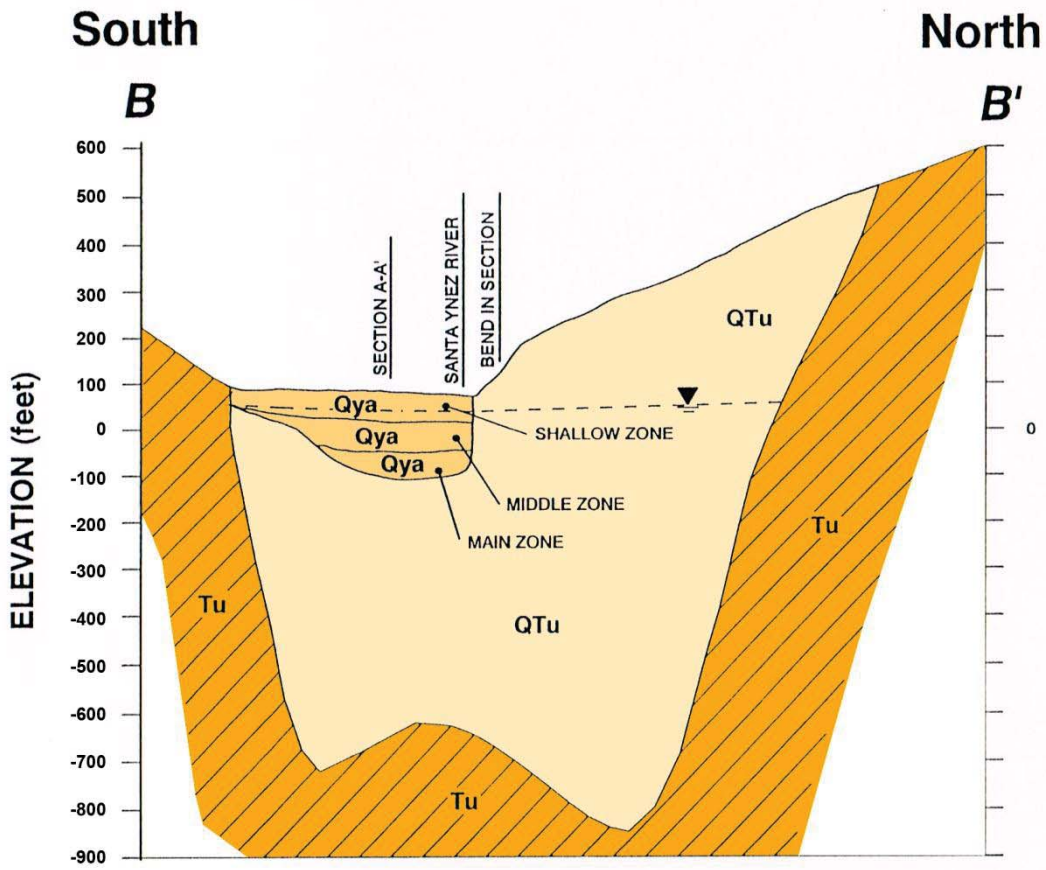
(RIVER-CHANNEL DEPOSITS NOT SHOWN)

- Qya — YOUNGER ALLUVIUM
- QTu — OLDER CONTINENTAL DEPOSITS
- Tu — CONSOLIDATED ROCKS
- GEOLOGIC CONTACT
- WATER TABLE

Scale 0 1 2 MILES

GEOLOGY MODIFIED FROM BRIGHT AND OTHERS (1992, PLATE 1) AND UPSON AND THOMASSON (1951)

Cross Section B-B’



(RIVER-CHANNEL DEPOSITS NOT SHOWN)

Qya	YOUNGER ALLUVIUM
QTu	OLDER CONTINENTAL DEPOSITS
Tu	CONSOLIDATED ROCKS
	GEOLOGIC CONTACT
	WATER TABLE

Scale 0 1 2 MILES

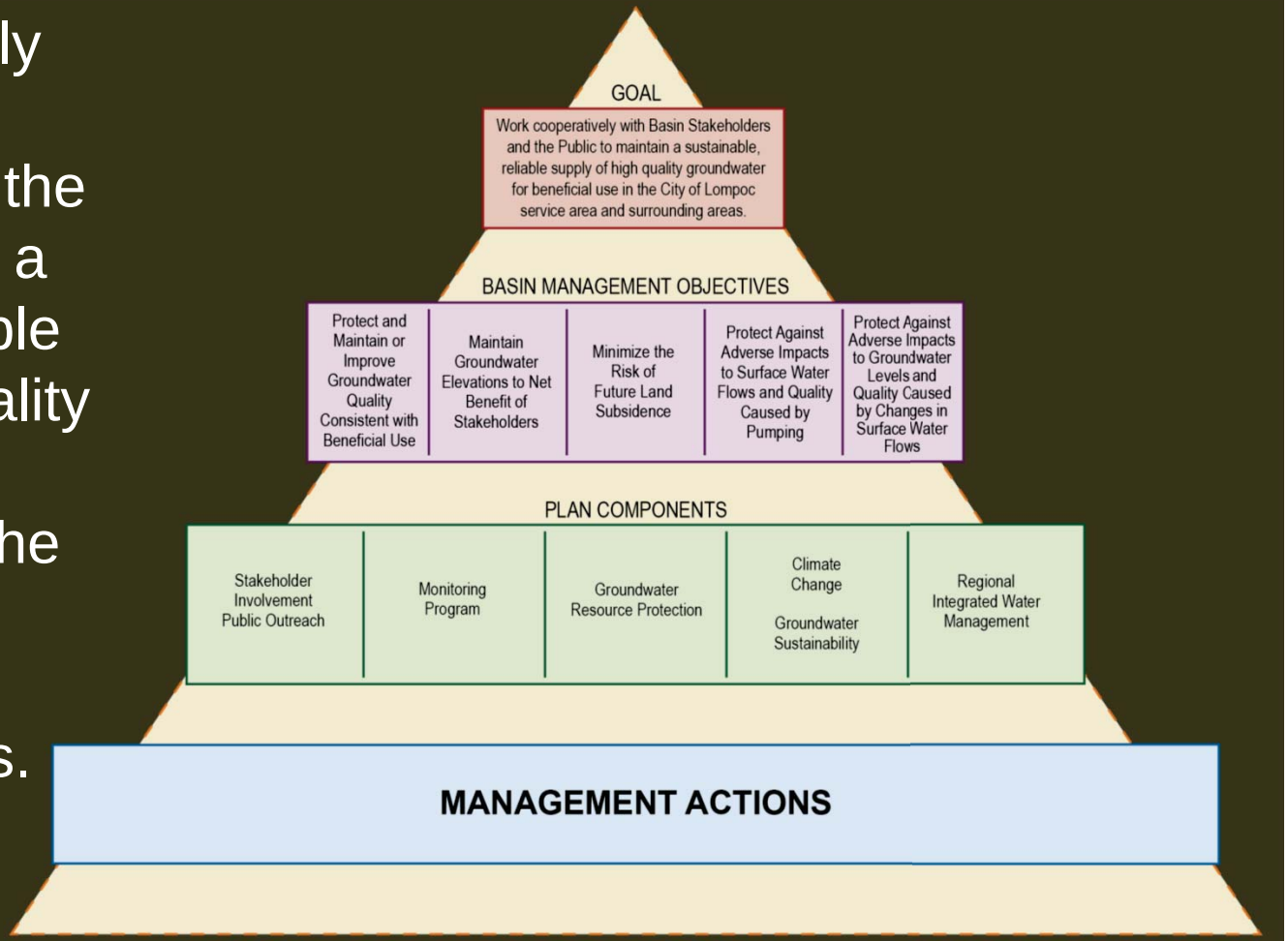
GEOLOGY MODIFIED FROM BRIGHT AND OTHERS (1992, PLATE 1)
AND UPSON AND THOMASSON (1951)

Outline

- Purpose, Authority, and Scope
- Plan Development Schedule
- Groundwater Basin Description
- **Groundwater Management Goal & Objectives**
- Plan Components
- Plan Implementation
- Next Steps

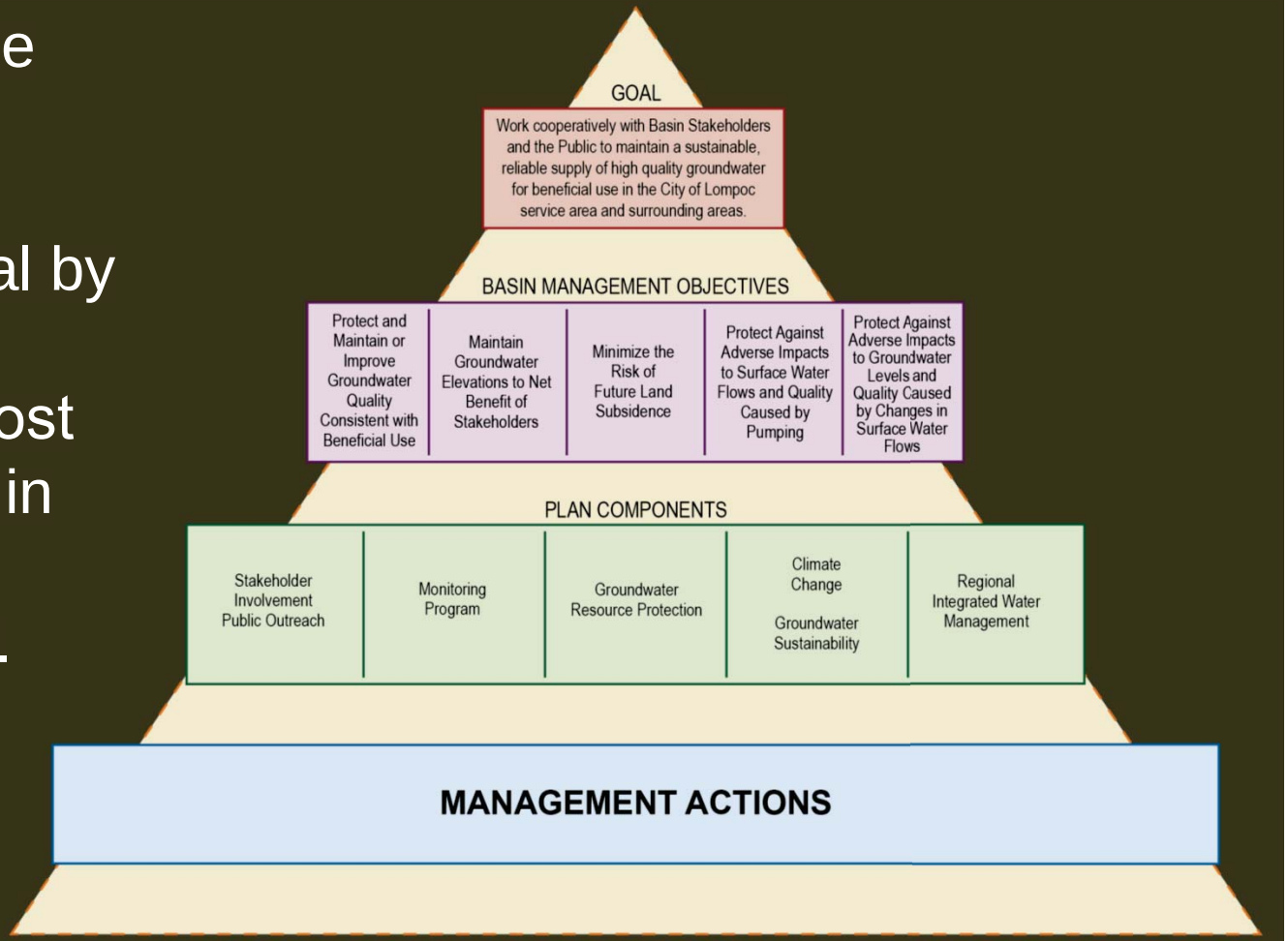
Overall Groundwater Management Goal

Work cooperatively with basin stakeholders and the public to maintain a sustainable, reliable supply of high quality groundwater for beneficial use in the City of Lompoc service area and surrounding areas.



Basin Management Objectives

BMOs support the City's overall groundwater management goal by identifying and prioritizing the most important issues in meeting water resources needs.

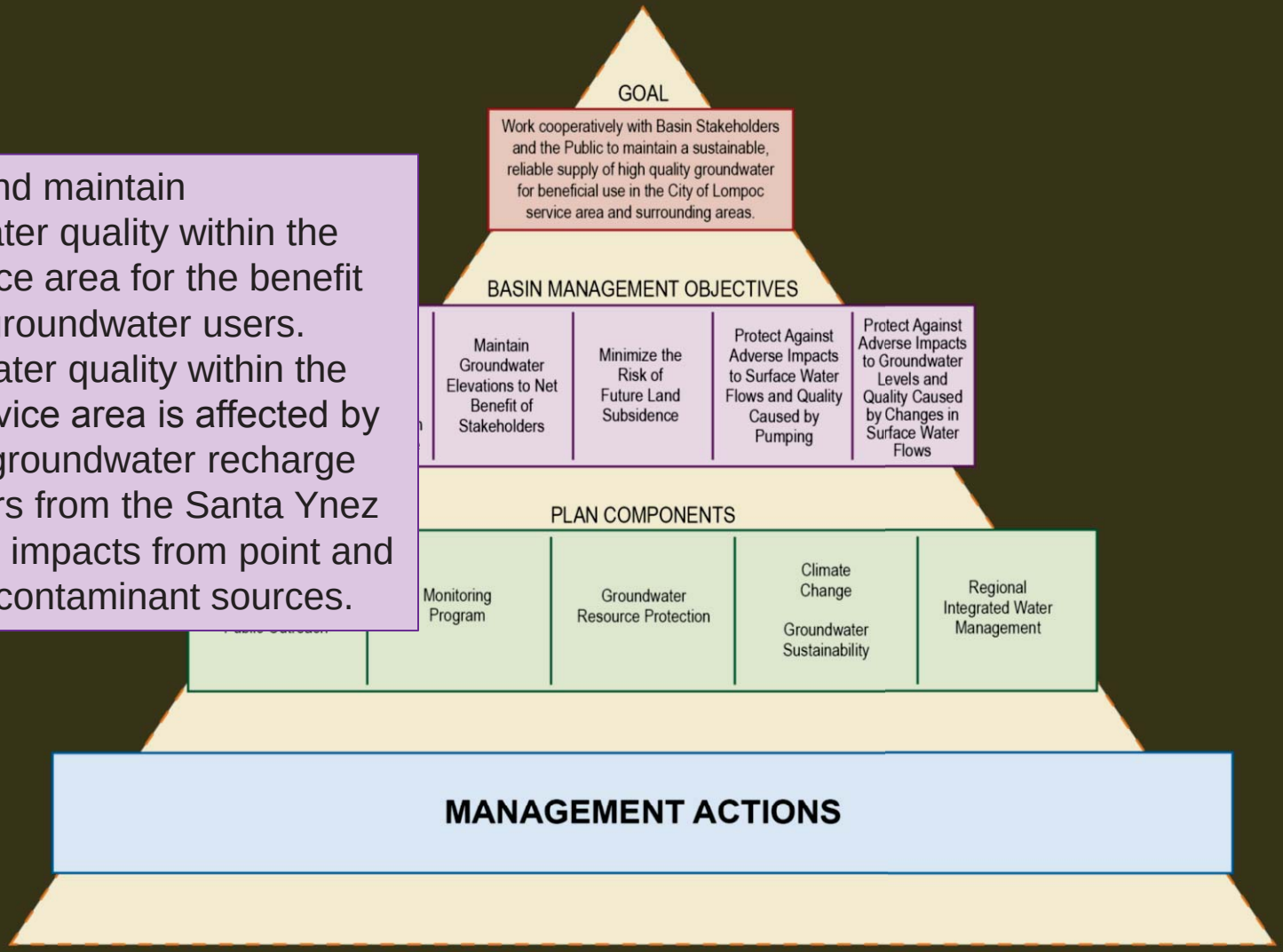


Institutional Framework

- BMO categories are specified in the water code
- State Board Order 89-18
- Cachuma Project Settlement Agreement
- National Marine Fisheries Service Biological Opinion

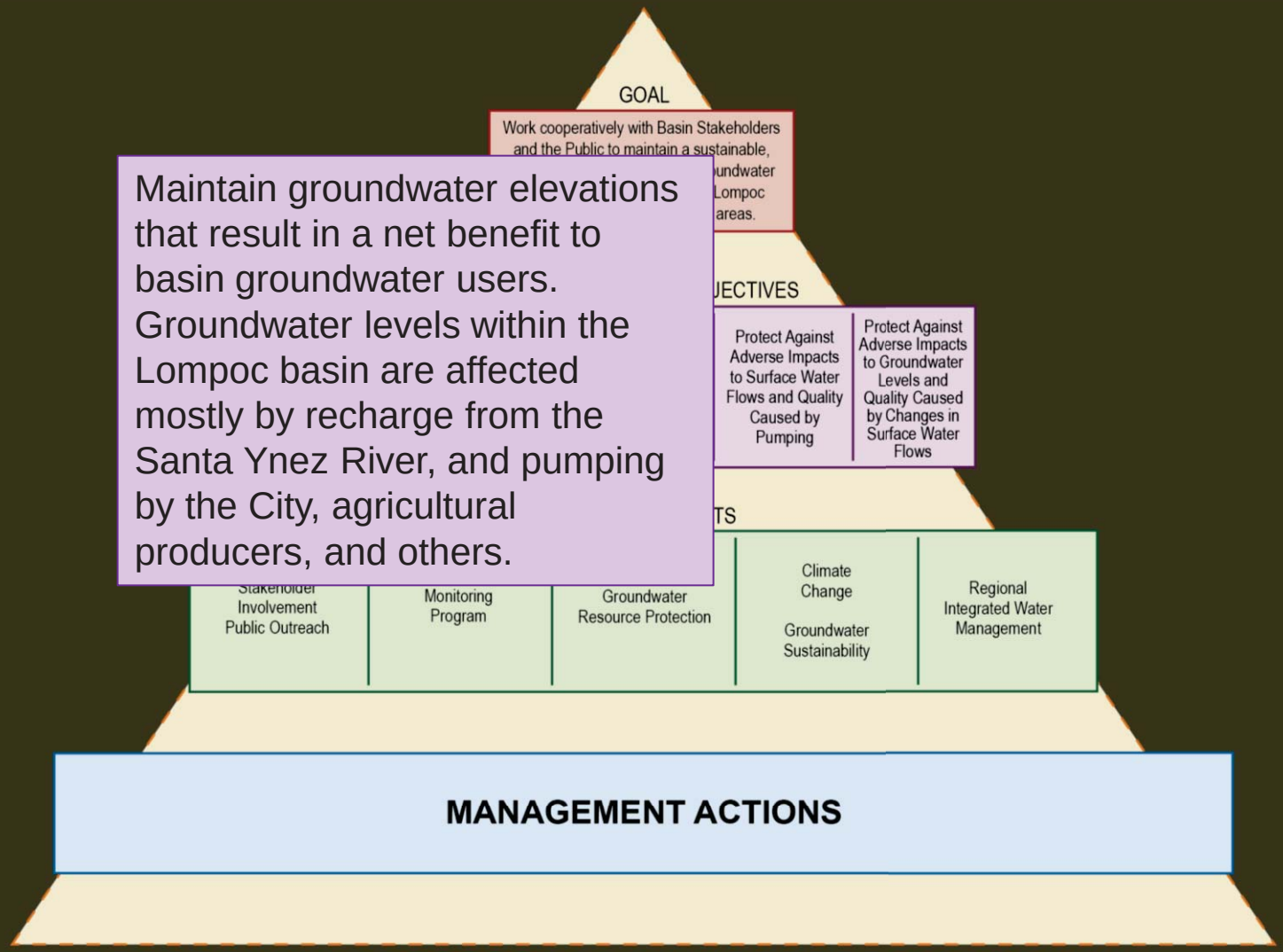
BMO-01

Protect and maintain groundwater quality within the City service area for the benefit of basin groundwater users. Groundwater quality within the City's service area is affected by both the groundwater recharge that occurs from the Santa Ynez River and impacts from point and nonpoint contaminant sources.

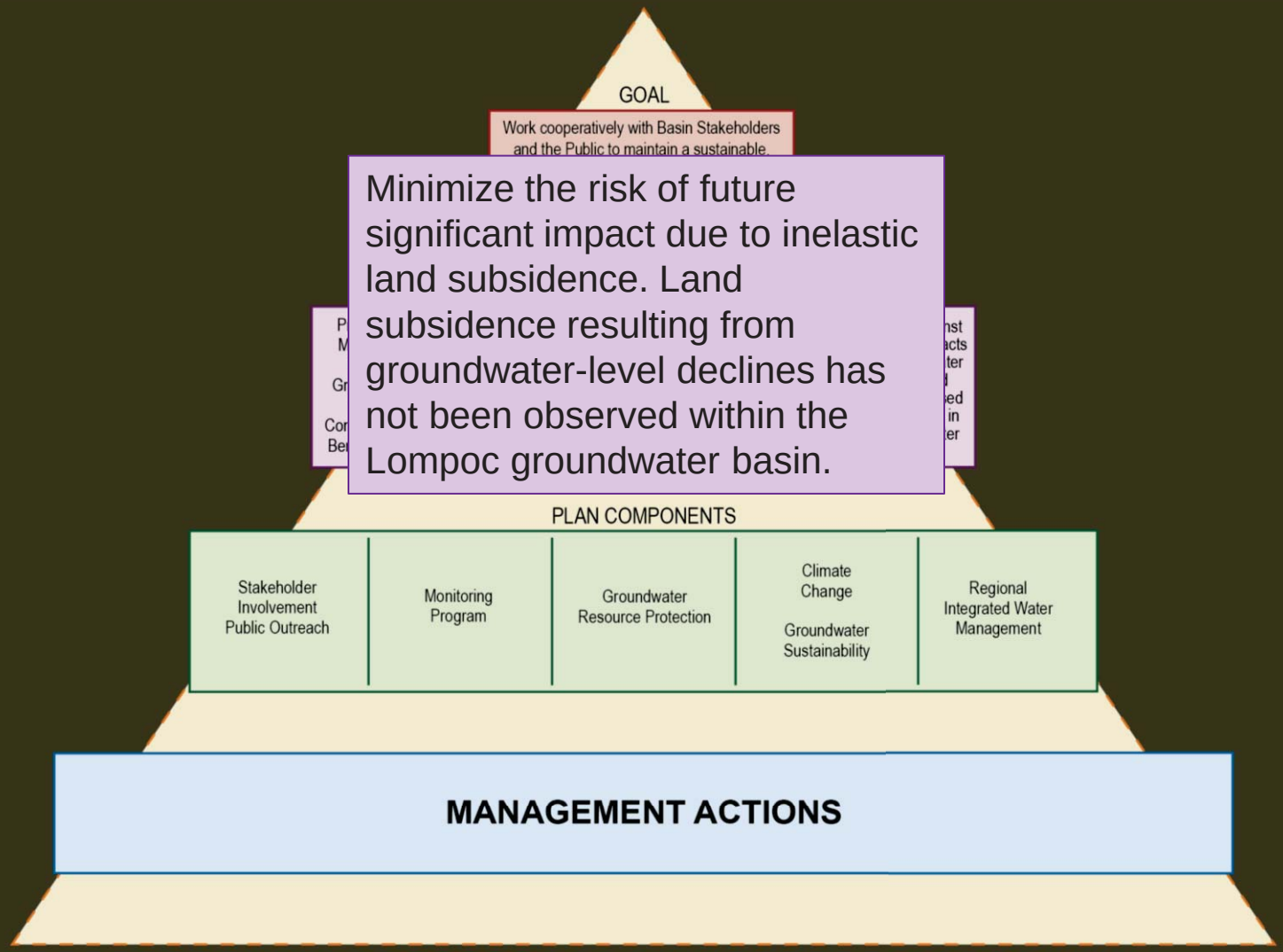


BMO-02

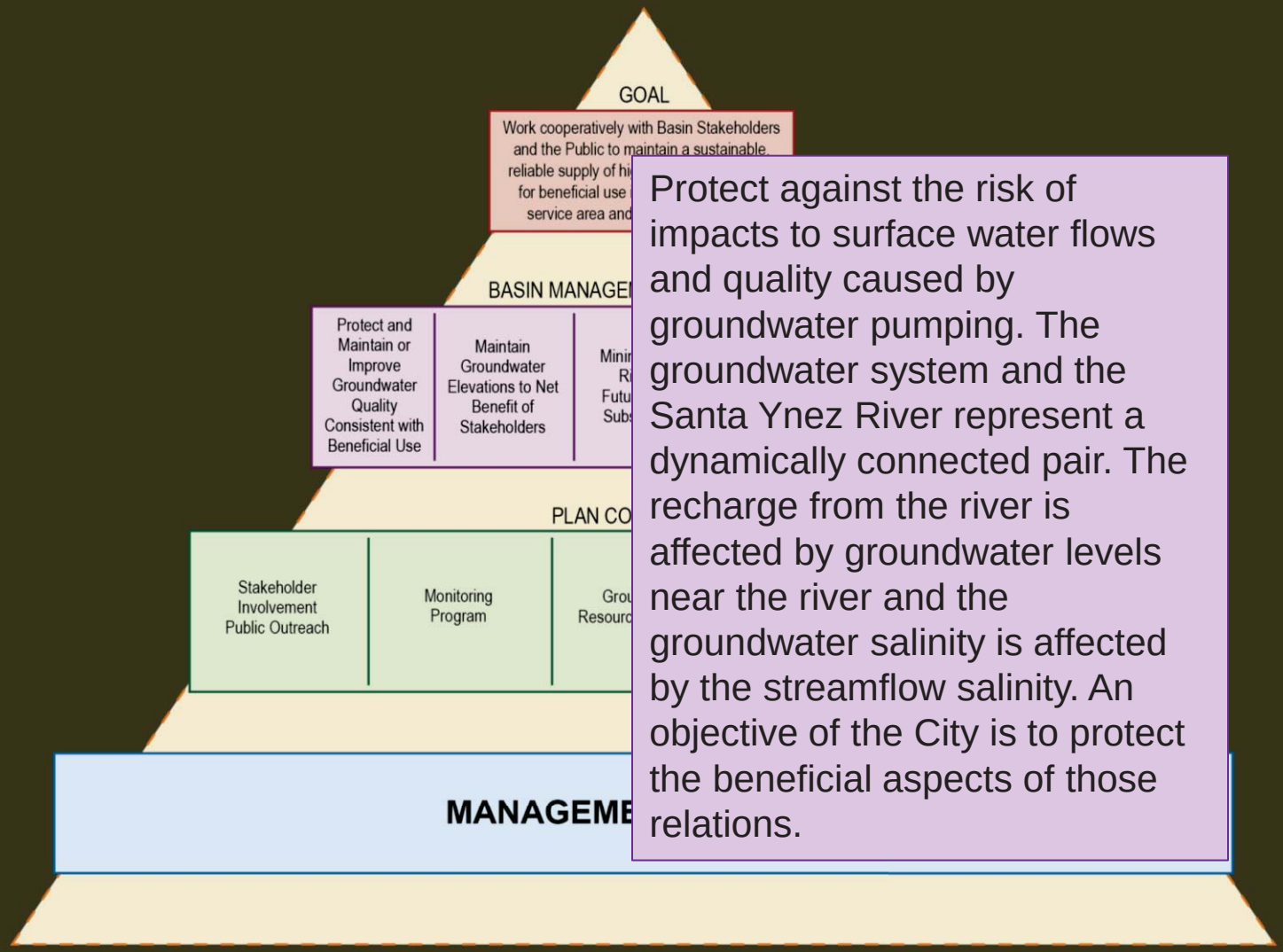
Maintain groundwater elevations that result in a net benefit to basin groundwater users. Groundwater levels within the Lompoc basin are affected mostly by recharge from the Santa Ynez River, and pumping by the City, agricultural producers, and others.



BMO-03

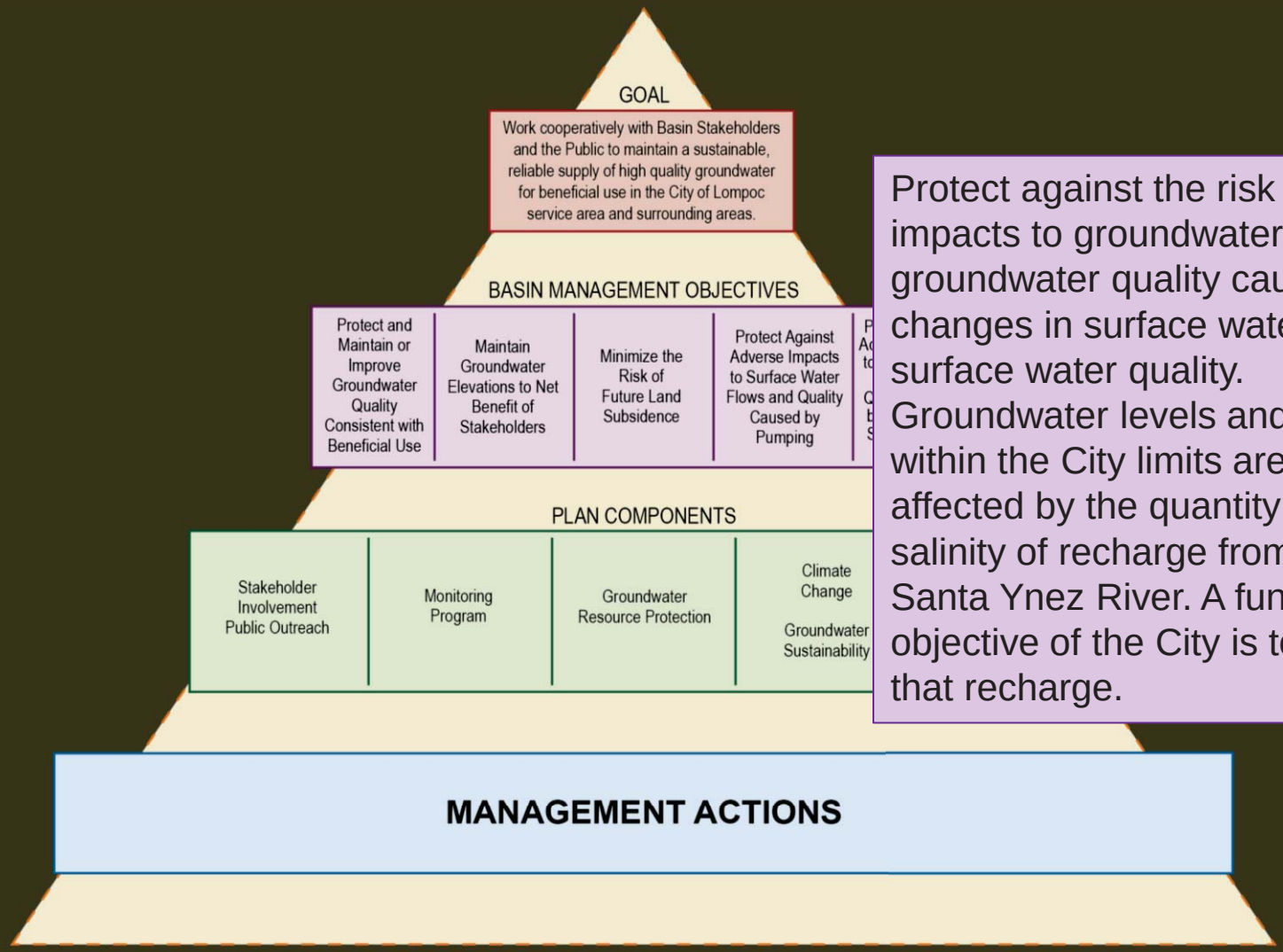

GOAL
Work cooperatively with Basin Stakeholders and the Public to maintain a sustainable.
Minimize the risk of future significant impact due to inelastic land subsidence. Land subsidence resulting from groundwater-level declines has not been observed within the Lompoc groundwater basin.
PLAN COMPONENTS
Stakeholder Involvement Public Outreach
Monitoring Program
Groundwater Resource Protection
Climate Change
Groundwater Sustainability
Regional Integrated Water Management
MANAGEMENT ACTIONS

BMO-04



Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping. The groundwater system and the Santa Ynez River represent a dynamically connected pair. The recharge from the river is affected by groundwater levels near the river and the groundwater salinity is affected by the streamflow salinity. An objective of the City is to protect the beneficial aspects of those relations.

BMO-05

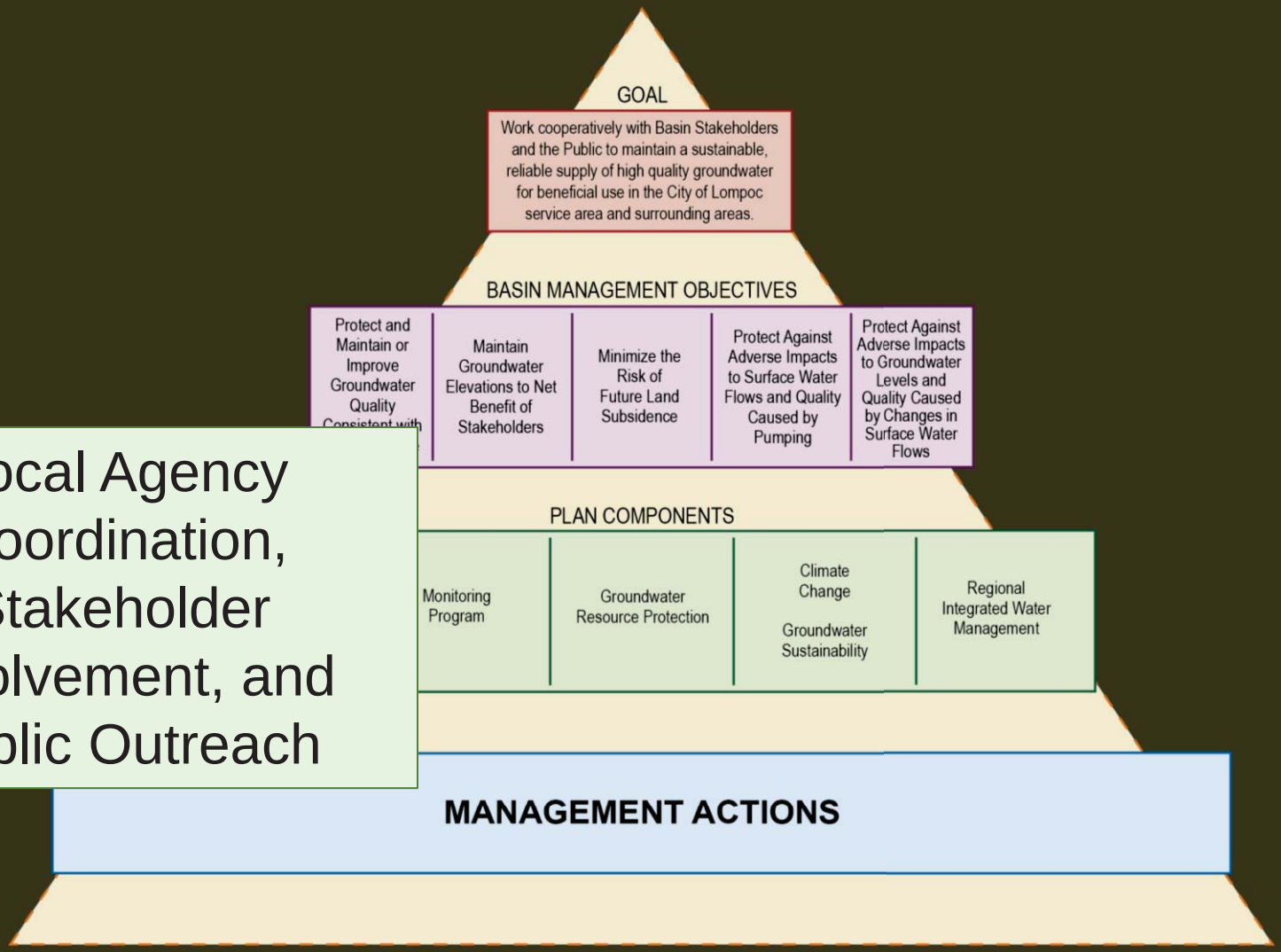


Protect against the risk of impacts to groundwater levels or groundwater quality caused by changes in surface water flows or surface water quality. Groundwater levels and quality within the City limits are strongly affected by the quantity and salinity of recharge from the Santa Ynez River. A fundamental objective of the City is to protect that recharge.

Outline

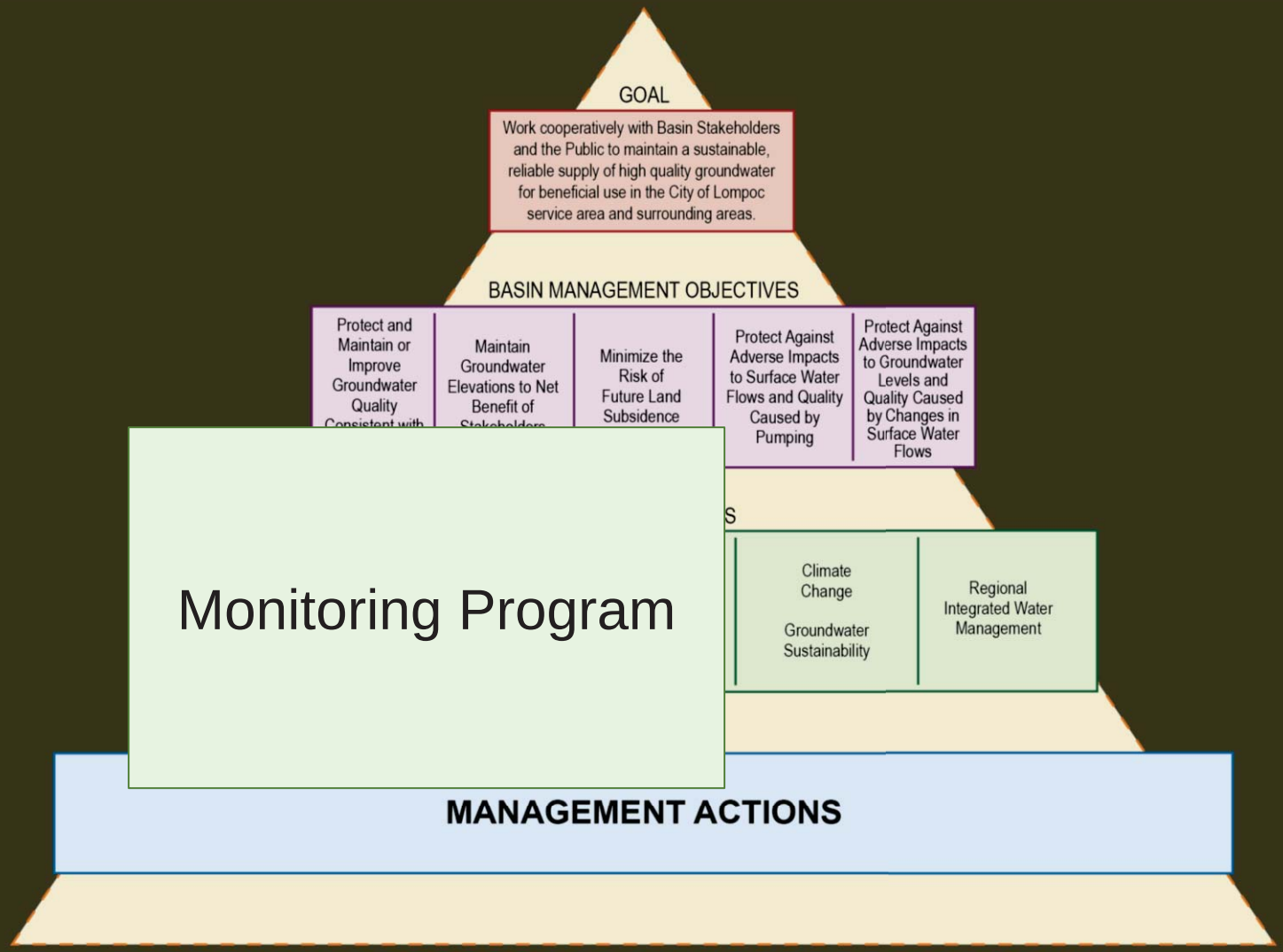
- Purpose, Authority, and Scope
- Plan Development Schedule
- Groundwater Basin Description
- Groundwater Management Goal & Objectives
- **Plan Components**
- Plan Implementation
- Next Steps

Plan Components

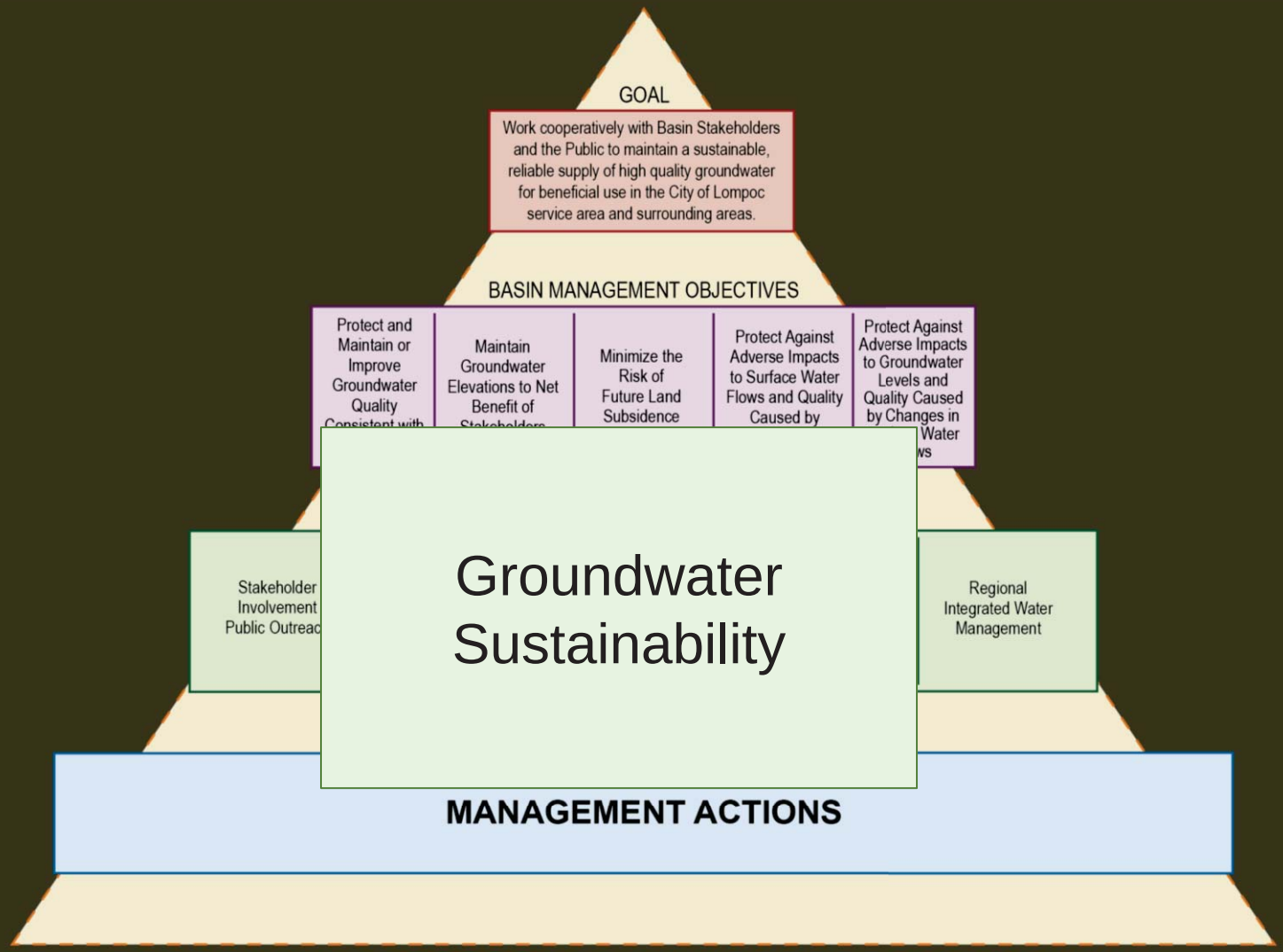


Local Agency Coordination, Stakeholder Involvement, and Public Outreach

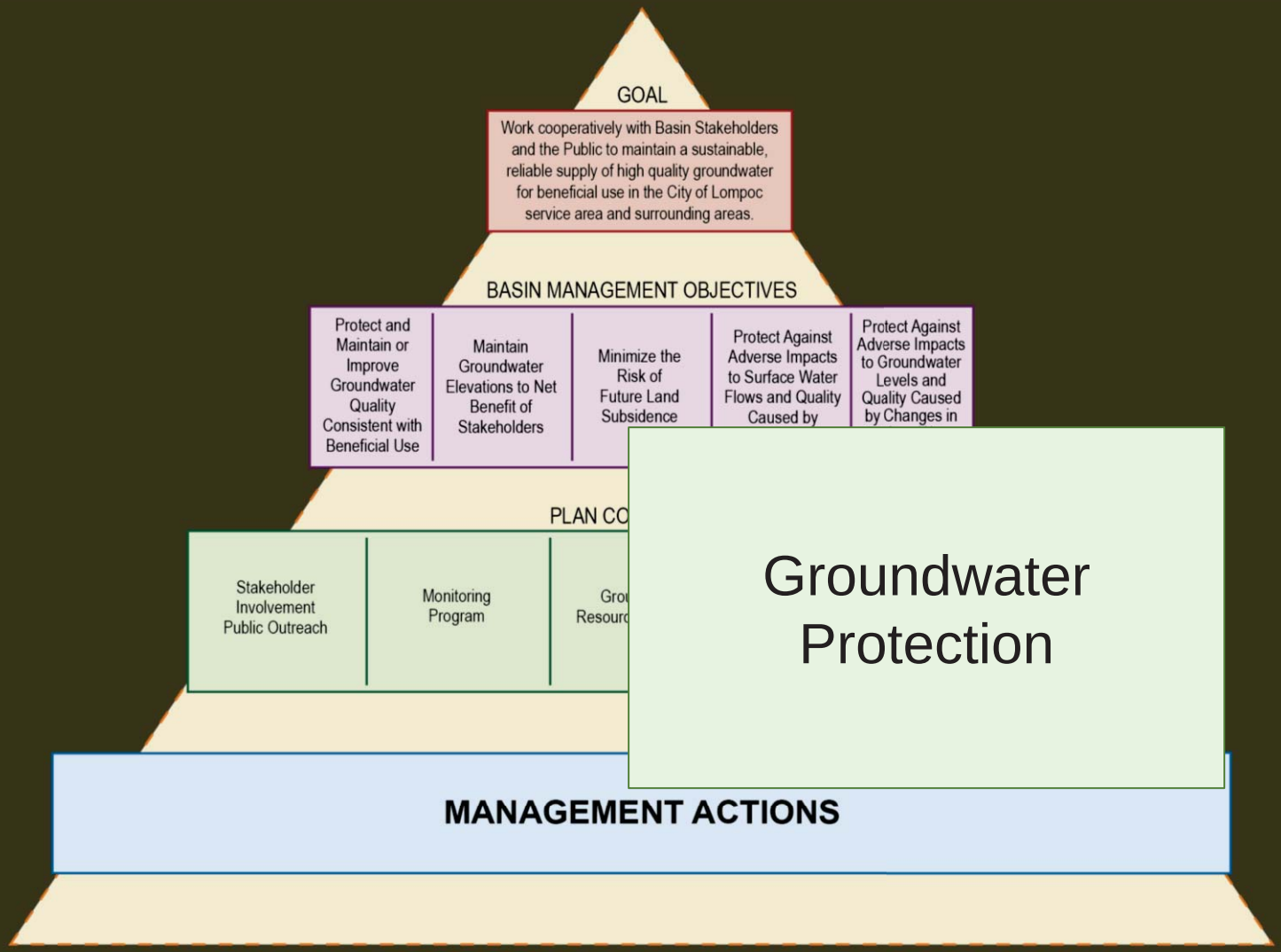
Plan Components



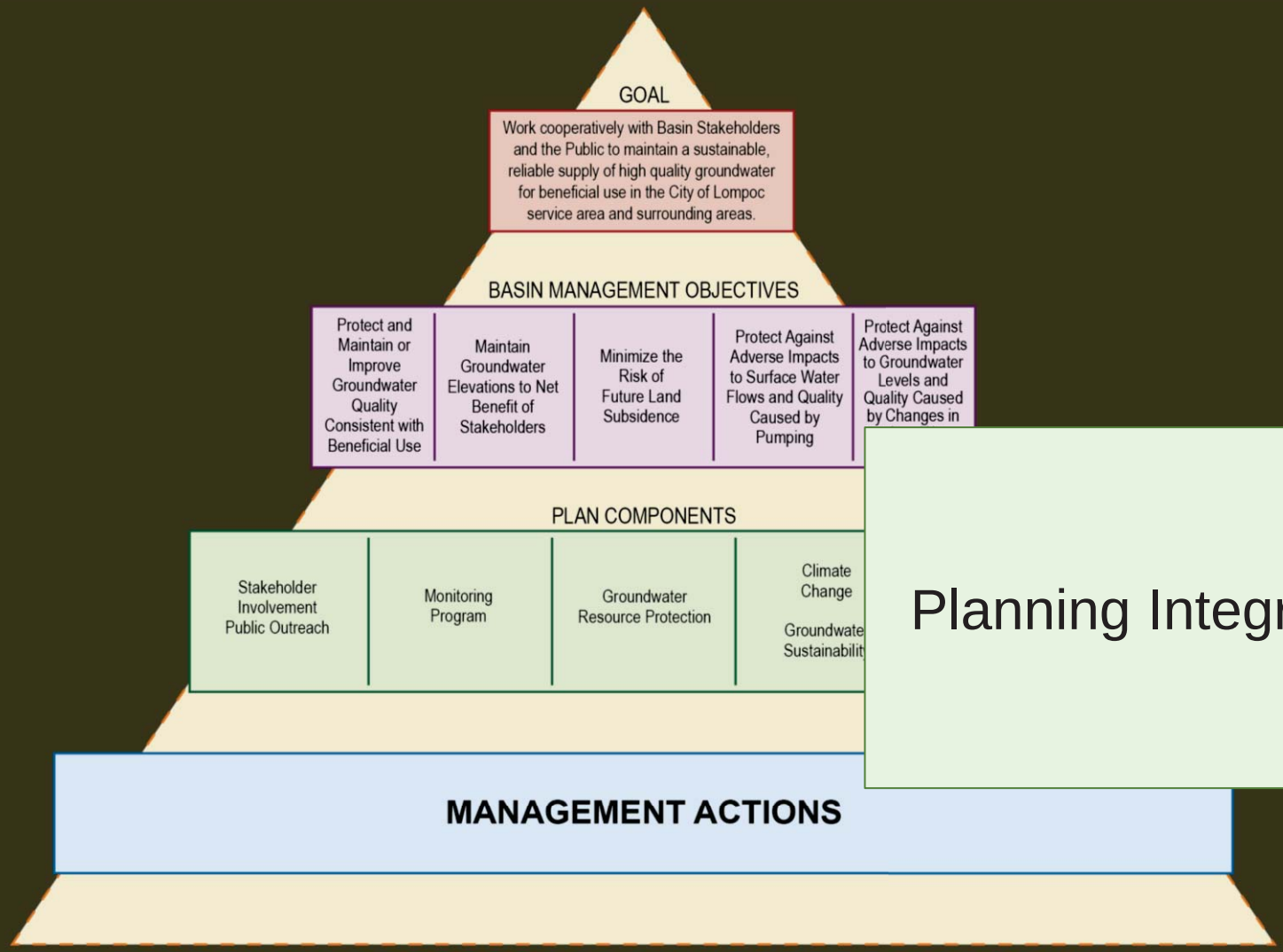
Plan Components



Plan Components



Plan Components



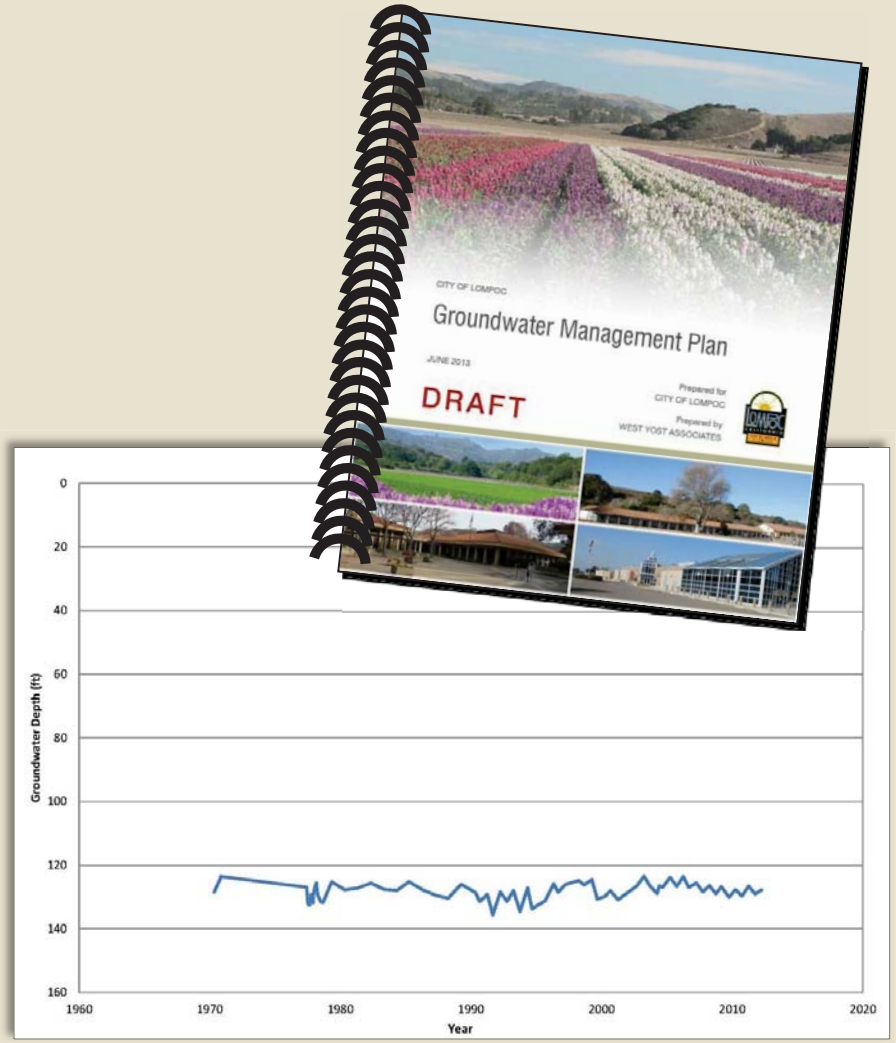
Planning Integration

Outline

- Purpose, Authority, and Scope
- Plan Development Schedule
- Groundwater Basin Description
- Groundwater Management Goal & Objectives
- Plan Components
- **Plan Implementation**
- Next Steps

Plan Implementation

- City staff will implement plan with oversight by an Advisory Committee consisting of members of the City's Utility Commission
- USGS/Stakeholder Monitoring Programs
- Occasional Groundwater Management Plan Updates



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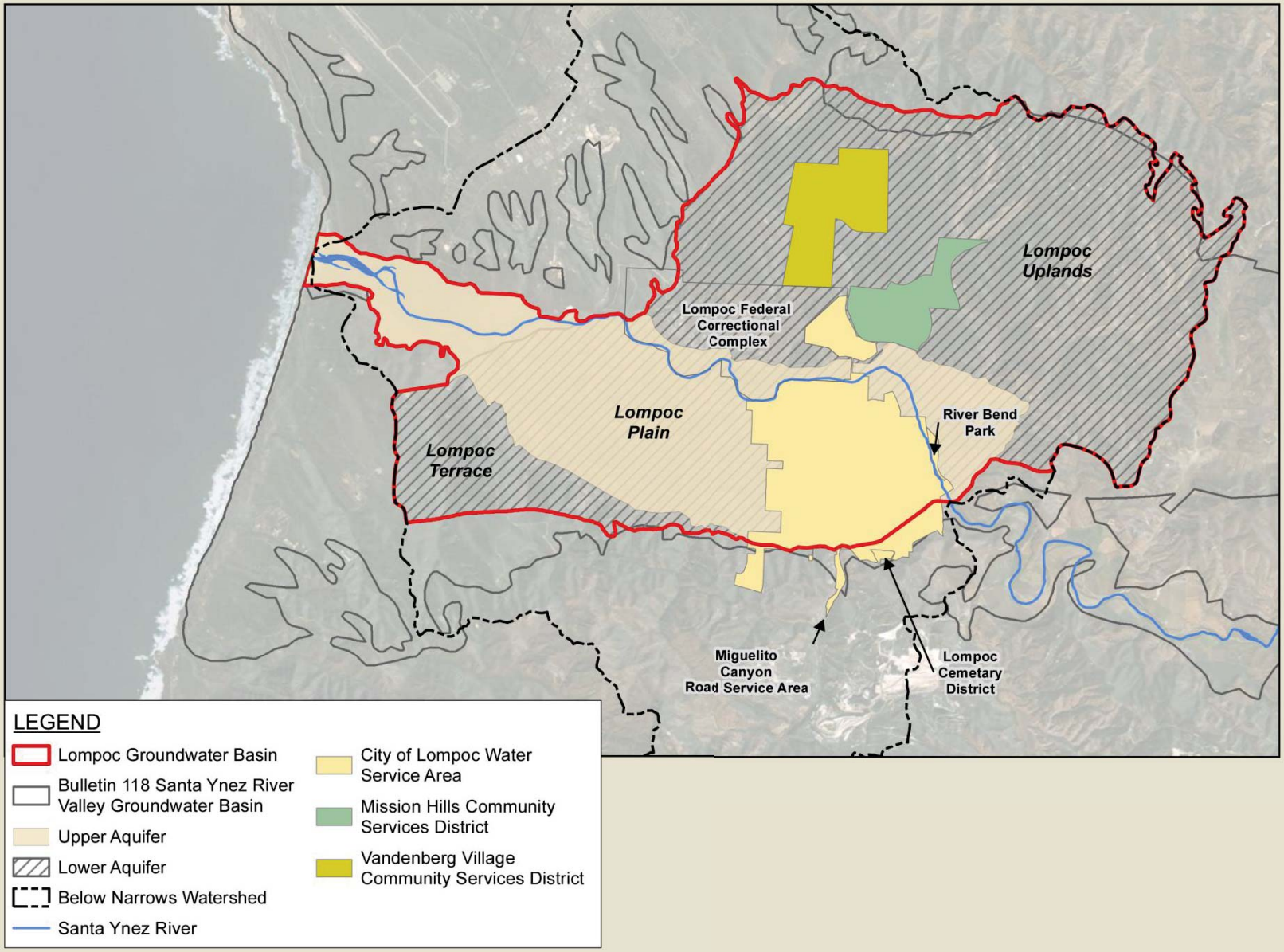
- Plan Components
- Plan Implementation
- **Next Steps**

Next Steps

July 2013	**Public and Stakeholder Review of Draft Plan**
August 2013	**Plan Revision Based on Public and Stakeholder Comments**
September 2013	**Public Notification of Public Hearing to Consider Adoption of the Plan by City Council**
October 2013	**Public Hearing to Consider Adoption of the Plan by City Council**

Questions or Comments?



APPENDIX A.5

Notice of October 1, 2013 Hearing to Consider Adoption of the Groundwater Management Plan

Lee Central Coast Newspapers

Santa Maria Times • Lompoc Record
Santa Ynez Valley News • Space Country Times
Five Cities Times Press Recorder • The Adobe Press

FIRST INVOICE

Lee Central Coast Newspapers
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Make checks payable to: Lee Central Coast Newspapers

CITY OF LOMPOC (LEGALS)
FINANCE
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LOMPOC CA 93438

Customer Nbr: 60000593
Phone: (805) 875-8241
Date: 09/30/2013
Page: 1

Amount Paid: _____ Card # : _____ Exp Date: ____/____

Check # : _____ Signature: _____

Date: 09/24/2013 **Ref #:** 13692 **Total:** 159.84

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You may also send the coupon to a secure fax at 805-739-2151.

Date	Reference #	Type	Description	Lines	Total
09/24/13	13692	INV	NOTICE OF A PUBLIC HEARING FO	72	159.84

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OCT 1, 2013
ACCOUNTS PAYABLE

Util Dept
APPROVED FOR PAYMENT
BY Susan Segura
ACCT 5100-53313

Remarks:

Total Due: 159.84

*** Proof of Publication ***

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA.

LOMPOC RECORD

CITY OF LOMPOC (LEGALS)
PO BOX 8001
LOMPOC, CA 93438

ORDER NUMBER 13692

I AM THE PRINCIPAL CLERK OF THE PRINTER OF THE LOMPOC RECORD, NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED IN THE CITY OF LOMPOC, COUNTY OF SANTA BARBARA, AND WHICH NEWPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATON BY THE SUPERIOR COURT OF THE COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, ADJUDICATION #47065.

THAT THE NOTICE OF WHICH THE ANNEXED IS A PRINTED COPY (SET IN TYPE NOT SMALLER THAT NONPAREIL), HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO-WIT:

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURE THAT THE FOREGOING IS TRUE AN CORRECT.

PUBLISHED ON: 09/17/2013, 09/24/2013

TOTAL AD COST:	159.84
FILED ON:	9/24/2013

DATED AT SANTA MARIA, CA THIS 24th DAY OF Sept, 20 13

Teresa Ramirez
SIGNATURE

NOTICE OF A PUBLIC HEARING FOR ADOPTION OF THE CITY OF LOMPOC GROUNDWATER MANAGEMENT PLAN (GWMP)

NOTICE is HEREBY GIVEN that the City Council of the City of Lompoc is convening a Public Hearing to consider adoption of the City's GWMP at 7:00 p.m. on Tuesday, October 1, 2013 at the regular meeting place of the City Council, which is listed below:

Lompoc City Hall
City Council Chambers
100 Civic Center Plaza
Lompoc CA 93436

The City of Lompoc (City) has prepared a GWMP pursuant to California Water Code (CWC) Section 10750 et. seq. for the portions of its water service area overlying the Lompoc Groundwater Basin. The City recognizes the importance of maintaining a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a GWMP will support this goal and help the City meet requirements in the CWC.

Members of the public are invited to provide comments at the Public Hearing, or in writing, which is received by the City by 5:00 p.m. on Tuesday, October 1, 2013 and to have an opportunity to hear the City Council's deliberations of whether or not to adopt the GWMP. If you desire additional information concerning the GWMP, contact Susan Segovia, Senior Administrative Analyst, at the City's Utility Department, by email s_segovia@ci.lompoc.ca.us or by telephone at (805) 875-8297.

A copy of the GWMP may be viewed at the City's website at http://www.cityoflompoc.com/Notices/index.htm. Printed copies may be obtained for the cost of reproduction. Printed copies of the GWMP can also be viewed at the following locations:

Lompoc City Hall, 100 Civic Center Plaza, Lompoc CA 93436
Lompoc Public Library, 501 E. North Avenue, Lompoc, CA 93436

Legal #13692
Pub dates: Sep 17 & 24, 2013

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SEP 25 2013
ACCOUNTS PAYABLE

Lompoc City Council Agenda Item

City Council Meeting Date: October 1, 2013

TO: Laurel M. Barcelona, City Administrator

FROM: Susan Segovia, Senior Administrative Analyst
s_segovia@ci.lompoc.ca.us

SUBJECT: Adoption of Groundwater Management Plan

Recommendation:

Staff recommends the City Council approve Resolution No. 5874(13), adopting the City's Groundwater Management Plan.

Background:

The proposed Groundwater Management Plan (GWMP) was prepared under the requirements of California Water Code (CWC) Sections 10750 *et. seq.* for the portions of the City's water service area overlying the Lompoc Groundwater Basin. The City recognizes the importance of maintaining a sustainable, reliable, high quality groundwater supply for the long-term benefit of its citizens. Preparation and adoption of a GWMP will support this goal, help the City meet requirements in the CWC, and provide eligibility for groundwater related grants.

The City adopted Resolution No. 5751(11), to prepare the GWMP after convening a public hearing on December 6, 2011, pursuant to CWC Sections 10750 *et. seq.* The City also held a public meeting on November 13, 2012, with groundwater basin stakeholders to discuss preliminary draft Basin Management Objectives (BMOs) and held a public meeting on July 3, 2013, to discuss the draft GWMP.

The City encouraged public participation and sought public input while developing the GWMP. The GWMP was available for public review prior to the scheduled public meetings and the October 1, 2013, Public Hearing; at Lompoc City Hall and the City of Lompoc Library, posted on the City's website, and made available for distribution to interested parties. Notices for the Public Hearings were published in the Lompoc Record.

The GWMP was developed in coordination with local agencies and other basin stakeholders, which meets the State of California's intent for local agencies to develop integrated regional solutions for water management. The GWMP was discussed and reviewed by the City of Lompoc Utility Commission at various meetings and on

August 12, 2013, the Commission unanimously recommended the GWMP be forwarded for approval to the City Council.

Discussion:

The CWC provides the City's authority to adopt a GWMP. The City overlies a portion of the Lompoc Plain of the Santa Ynez River Valley Groundwater Basin (California Department of Water Resources (DWR) Subbasin 3-15) and provides water service within its service area. The City is a local agency pursuant to CWC Subsection 10752(g) and the City is authorized to adopt the GWMP, as provided in CWC Subsection 10753(a). The City relies on groundwater to meet the water demands of its customers. The purposes of the GWMP are to:

1) State the City's overall groundwater management goal;
2) Develop BMOs applicable to the City service area;
3) Establish baseline conditions for the portion of the basin that is subject to the GWMP;
4) Provide a mechanism for the continued collection of groundwater and aquifer information;
5) Establish the framework for assessing potential changes with respect to baseline conditions;
6) Establish management actions, including provisions for updating the plan as conditions change and new information becomes available;
7) Maintain consistency with the CWC and help ensure funding eligibility; and
8) Fulfill the requirement that a GWMP must be attached to the City's updated Urban Water Management Plans (UWMPs).

One of the requirements of CWC Sections 10750 *et. seq.* is for the City to hold public hearings to consider preparation and adoption of the GWMP. A public hearing was held on December 6, 2011, to consider preparation of the GWMP and a public hearing is being held on October 1, 2013, to consider adoption of the GWMP.

The City's primary goal of the GWMP is to work cooperatively with basin stakeholders and the public to maintain a sustainable, reliable, high-quality groundwater supply for beneficial use in the City service area and surrounding areas. Adoption of the City's GWMP will support this goal and help the City meet requirements in the CWC. The GWMP contains BMOs applicable to the City's service area, which support the primary goal of the GWMP. The GWMP BMOs are as follows:

1) Protect and maintain groundwater quality within the City of Lompoc service area for the benefit of basin groundwater users;
2) Maintain groundwater elevations that result in a net benefit to basin groundwater users;
3) Minimize the risk of future significant impact due to inelastic land subsidence;

4) Protect against the risk of impacts to surface water flows and quality caused by groundwater pumping;
5) Protect against the risk of impacts to groundwater levels and groundwater quality caused by changes in water flows or surface water quality.

Groundwater Management Plan Components/Future Groundwater Management Plan updates

The GWMP links the BMOs to management actions that are planned to attain the BMOs and the overall groundwater goal of working cooperatively with basin stakeholders and the public to maintain a sustainable, reliable, high-quality groundwater supply for beneficial use in the City service area and surrounding areas. The management actions are discussed in the GWMP under six components:

- Agency Coordination, Stakeholder Involvement and Public Outreach
- Monitoring Program
- Groundwater Sustainability
- Adaptive Management and Mitigation in Response to Climate Change
- Groundwater Protection
- Planning Integration

Each component of the GWMP addresses related groundwater management subject matter and recommended actions.

Fiscal Impact:

There are no future costs associated with the adoption of the GWMP.

Conclusion:

Adoption of the Groundwater Management Plan supports the City's primary goal of working cooperatively with basin stakeholders and the public to maintain a sustainable, reliable, high-quality groundwater supply for the long-term benefit of its citizens.

Respectfully submitted,

Susan Segovia

Susan Segovia, Senior Administrative Analyst

APPROVED FOR SUBMITTAL TO THE CITY ADMINISTRATOR:

FOR LAB
Larry A. Bean, P.E., Utilities Director

APPROVED FOR SUBMITTAL TO THE CITY COUNCIL:

Laurel M. Barcelona, City Administrator

Attachments:
1) Resolution No. 5874(13), Adoption of Groundwater Management Plan
2) Groundwater Management Plan,

Copy of Groundwater Management Plan available for review at City Clerk's Office, Lompoc Public Library or at http://www.cityoflompoc.com/Notices/index.htm

RESOLUTION NO. 5874 (13)

A Resolution of the Council of the City of Lompoc, County of Santa Barbara, State of California, to Adopt a Groundwater Management Plan

WHEREAS, the California Legislature enacted Assembly Bill 3030 to provide local public agencies increased management authority over their groundwater resources and subsequently, Senate Bill 1938 to expand the authority under AB 3030 by requiring Groundwater Management Plans to provide for eligibility for grant funds for groundwater related projects (California Water Code Sections 10750 *et. seq.*); and

WHEREAS, the State of California has emphasized the development of integrated regional solutions by local agencies for water management and coordinating conjunctive management of surface and groundwater to improve the regional supply, reliability and quality of water; and

WHEREAS, the City is an urban supplier of water, providing water to approximately 40,000 citizens; and

WHEREAS, the City's Groundwater Management Plan, attached hereto as Exhibit A, (the Plan) meets the State requirements in compliance with the California Water Code and was coordinated with other local water districts and water users in the Lompoc Groundwater Basin; and

WHEREAS, the Plan shall be periodically reviewed and the City shall make any amendments or changes to the Plan, which are indicated by the review; and

WHEREAS, the City's current Urban Water Management Plan adopted in 2010, addresses the current water supply, the Groundwater Basin Management Plan addresses maintaining a long-term, sustainable, and reliable supply of high quality groundwater for the beneficial use of water customers in the City of Lompoc service area; and

WHEREAS, the City will file the Plan with the California Department of Water Resources upon adoption of the final Plan by the City Council.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LOMPOC, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The Groundwater Management Plan is hereby adopted and staff is directed to file the Plan with the California Department of Water Resources and to pursue future grant funds.

The above and foregoing Resolution was proposed by Councilmember _____, seconded by Councilmember _____, and was duly passed and adopted by the

Council of the City of Lompoc at its regular meeting of October 1, 2013, by the following vote:

AYES: Councilmember(s):

NOES: Councilmember(s):

ABSENT: Councilmember(s):

_____
John H. Linn, Mayor
City of Lompoc

ATTEST:

_____
Stacey Alvarez, City Clerk
City of Lompoc

APPENDIX A.6

Letter of Support from the Santa Ynez River
Water Conservation District

DIRECTORS:

DIVISION 1
JONATHAN R. MUNDT
Lompoc

DIVISION 2
STEPHEN E. JORDAN
Lompoc

DIVISION 3
JON C. PICCIUOLO, President
Vandenberg Village - Mission Hills

DIVISION 4
ART HIBBITS
Buellton - Lompoc

DIVISION 5
JEFFREY S. NEWTON
Solvang - Santa Ynez

Santa Ynez River
WATER CONSERVATION DISTRICT

P.O. Box 719 - 3669 Sagunto Street, Suite 108
Santa Ynez, California 93460
Telephone: (805) 693-1156

GENERAL MANAGER:
BRUCE A. WALES

SECRETARY:
BRUCE A. WALES

CONSULTANTS:
ERNEST A. CONANT
General Counsel

STETSON ENGINEERS
Engineer

July 31, 2013

Ms. Susan Segovia
Utilities Department
City of Lompoc
100 Civic Center Plaza
Lompoc, CA 93436
S_SEGOVIA@ci.lompoc.ca.us

Re: City of Lompoc - Draft Groundwater Management Plan

Dear Mrs. Segovia:

The Santa Ynez River Water Conservation District has reviewed the City of Lompoc's Draft Groundwater Management Plan and does support the subject plan. Thank you for the opportunity to participate in the development of the plan.

Sincerely,

SANTA YNEZ RIVER
WATER CONSERVATION DISTRICT

Bruce A. Wales
General Manager

BAW/jrf

Copy: Board of Directors, SYRWCD
Larry Bean, City of Lompoc

APPENDIX B

City of Lompoc Resolutions and Supporting Information

APPENDIX B.1

Resolution No. 5751 (11): Intent to Prepare a Groundwater Management Plan

CERTIFIED COPY

RESOLUTION NO. 5751(11)

A Resolution of The Council of The City of Lompoc, County of Santa Barbara, State of California, Intent to Prepare A Groundwater Management Plan

WHEREAS, the California Legislature enacted Assembly Bill 3030 to provide local public agencies increased management authority over their groundwater resources and subsequently Senate Bill 1938 to expand the authority under AB 3030 by requiring a Groundwater Management Plan (the Plan) to provide for eligibility for grant funds for groundwater related projects (California Water Code Section 10750 *et. seq.*); and

WHEREAS, the State of California has emphasized that local agencies develop integrated regional solutions for water management and coordinating conjunctive management of surface and groundwater to improve the regional supply, reliability and quality of water; and

WHEREAS, the City of Lompoc (the City) is an urban supplier of water providing water to approximately 40,000 citizens; and

WHEREAS, the Plan will meet the State requirements in compliance with the California Water Code and will be coordinated with other local water districts and water users in the Lompoc Groundwater Basin; and

WHEREAS, the Plan shall be periodically reviewed and the City shall make any amendments or changes to its Plan, which are indicated by the review; and

WHEREAS, the City's current Urban Water Management Plan adopted in 2010 addresses the current water supply; the Plan will address maintaining a long-term, sustainable, and reliable supply of high quality groundwater for the beneficial use of water customers in the City service area; and

WHEREAS, the City will file the Plan with the California Department of Water Resources upon adoption of the final Plan by the City Council.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LOMPOC, CALIFORNIA, HEREBY RESOLVES:

Section 1. The City Council adopts this Resolution and directs staff to proceed with the development of a Groundwater Management Plan in accordance with the provisions of Senate Bill 1938 and California Water Code Sections 10750 *et seq.* and to pursue future grant funds.

The above and foregoing Resolution was proposed by Council Member Starbuck, seconded by Council Member Costa, and was duly passed and adopted by the Council of the City of Lompoc at its regular meeting of December 6, 2011, by the following vote:

AYES:	Council Member:	Dirk Starbuck, Ashley Costa, Bob Lingl, Cecilia Martner, and Mayor John Linn.
NOES:	Council Member:	None
ABSENT:	Council Member:	None

John H. Linn, Mayor
City of Lompoc

ATTEST:

Stacey Alvarez, City Clerk
City of Lompoc

I HEREBY CERTIFY THAT THE foregoing instrument is a true and correct copy of the original on file in the Lompoc City Clerk's Department.
ATTEST:

APPENDIX B.2

Resolution No. 5874 (13): Resolution to Adopt a Groundwater Management Plan

CERTIFIED COPY

RESOLUTION NO. 5874 (13)

A Resolution of the Council of the City of Lompoc, County of Santa Barbara, State of California, to Adopt a Groundwater Management Plan

WHEREAS, the California Legislature enacted Assembly Bill 3030 to provide local public agencies increased management authority over their groundwater resources and subsequently, Senate Bill 1938 to expand the authority under AB 3030 by requiring Groundwater Management Plans to provide for eligibility for grant funds for groundwater related projects (California Water Code Sections 10750 *et. seq.*); and

WHEREAS, the State of California has emphasized the development of integrated regional solutions by local agencies for water management and coordinating conjunctive management of surface and groundwater to improve the regional supply, reliability and quality of water; and

WHEREAS, the City is an urban supplier of water, providing water to approximately 40,000 citizens; and

WHEREAS, the City's Groundwater Management Plan, attached hereto as Exhibit A, (the Plan) meets the State requirements in compliance with the California Water Code and was coordinated with other local water districts and water users in the Lompoc Groundwater Basin; and

WHEREAS, the Plan shall be periodically reviewed and the City shall make any amendments or changes to the Plan, which are indicated by the review; and

WHEREAS, the City's current Urban Water Management Plan adopted in 2010, addresses the current water supply, the Groundwater Basin Management Plan addresses maintaining a long-term, sustainable, and reliable supply of high quality groundwater for the beneficial use of water customers in the City of Lompoc service area; and

WHEREAS, the City will file the Plan with the California Department of Water Resources upon adoption of the final Plan by the City Council.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LOMPOC, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The Groundwater Management Plan is hereby adopted and staff is directed to file the Plan with the California Department of Water Resources and to pursue future grant funds.

The above and foregoing Resolution was proposed by Council Member Holmdahl, seconded by Council Member Starbuck, and was duly passed and adopted by the Council of the City of Lompoc at its regular meeting of October 1, 2013, by the following vote:

AYES: Council Member(s): DeWayne Holmdahl, Dirk Starbuck, Bob Lingl, Ashley Costa, and Mayor John Linn.

NOES: Council Member(s): None

ABSENT: Council Member(s): None

John H. Linn, Mayor
City of Lompoc

ATTEST:

Stacey Alvarez, City Clerk
City of Lompoc

I HEREBY CERTIFY THAT THE
foregoing instrument is a true and correct copy of the original on file in the Lompoc City Clerk's Department.
ATTEST:

APPENDIX B.3

CEQA Categorical Exemption to Adopt and Implement the Groundwater Management Plan

NOTICE OF EXEMPTION

2013 OCT -9 PM 1:20

COUNTY OF SANTA BARBARA
CLERK OF THE
BOARD OF SUPERVISORS

TO: [x] Clerk of the Board
County of Santa Barbara
105 E. Anapamu Street, Room 407
Santa Barbara, CA 93101

City of Lompoc Groundwater Management Plan ER13-0029
Project Title

City of Lompoc Water Service Area overlying the Lompoc Groundwater Basin.
Project Location

The proposed project is the adoption and implementation of the Lompoc Groundwater Management Plan. The plan is intended to encourage cooperation between Lompoc groundwater basin stakeholders and the public to maintain a sustainable, reliable, high-quality groundwater supply for beneficial use in the City of Lompoc water service area and surrounding areas.

Description of Nature, Purpose, and Beneficiaries of Project

City of Lompoc
Name of Public Agency Approving Project

City of Lompoc Water Division, Utilities Department
Name of Person or Agency Carrying Out Project

Exempt Status:
[x]Categorical Exemption. State type and section number
The proposed project is exempt from CEQA based on its conformity with Section 21084 and Sections 15307 and 15308, of the CEQA guidelines, as the City of Lompoc is a local agency responding to requirements of a state agency in developing this required plan for the purpose of protecting a natural resource and the environment.
Reasons why project is exempt

10/05/13

Stacy L. Lawson, Senior Environmental Coordinator 10/08/13 (805)875-8275

APPENDIX C

Groundwater Management Institutional Framework Documents

APPENDIX C.1

Cachuma Project Settlement Agreement

SETTLEMENT AGREEMENT BETWEEN CACHUMA CONSERVATION RELEASE BOARD, SANTA YNEZ RIVER WATER CONSERVATION DISTRICT, SANTA YNEZ RIVER WATER CONSERVATION DISTRICT IMPROVEMENT DISTRICT NO. 1, AND THE CITY OF LOMPOC, RELATING TO OPERATION OF THE CACHUMA PROJECT

This Agreement is entered into this 17th day of December, 2002, by and between , **CACHUMA CONSERVATION RELEASE BOARD** ("**CCRB**"), a joint powers agency consisting of the City of Santa Barbara, Montecito Water District, Goleta Water District and Carpinteria Valley Water District ("**CCRB Members**"), **SANTA YNEZ RIVER WATER CONSERVATION DISTRICT,** a California water conservation district ("**Santa Ynez**"), **SANTA YNEZ RIVER WATER CONSERVATION DISTRICT, IMPROVEMENT DISTRICT NO. 1,** an improvement district of Santa Ynez ("**ID#1**"), and the **CITY OF LOMPOC**, a general law city ("**Lompoc**").

EXPLANATORY RECITALS:

A. The United States Bureau of Reclamation ("USBR") has constructed and is operating the Cachuma Project as authorized by the Congress of the United States, including Lake Cachuma impounded behind Bradbury Dam, and operates the Cachuma Project pursuant to permits issued by the State Water Resources Control Board ("State Board") and, pursuant to permits and orders of the State Board, is required to, among other things, collect certain data, maintain essential records related to project operations, and to make releases below Bradbury Dam for the protection of downstream water rights; and

B. CCRB Members and ID#1 have contracted with USBR through the Santa Barbara County Water Agency for the yield from the Cachuma Project, and are collectively referred to as "Cachuma Member Units". CCRB is established by that certain "Joint Powers

Agreement Creating Cachuma Conservation-Release Board" dated February 11, 1974, for specific purposes, including to represent the CCRB Members in promoting their common objective to maximize for beneficial use the water supply made available from the Cachuma Project; and

C. Santa Ynez, among other things, acts to represent and protect holders of water rights downstream of Bradbury Dam so that the Cachuma Project does not interfere with downstream water rights nor adversely affect water quality of the Santa Ynez River; and

D. ID#1, located downstream of Bradbury Dam and within Santa Ynez, among other things, acts to help ensure sufficient water is released so as to protect its downstream water rights, and as a Member Unit of the Cachuma Project, seeks to maximize the yield of the Cachuma Project for beneficial use within its boundaries; and

E. Lompoc, located downstream of Bradbury Dam and within Santa Ynez, acts to, among other things, help ensure that sufficient water is released so that the Cachuma Project does not interfere with its downstream water rights nor adversely affect the quality of water recharged from the Santa Ynez River; and

F. In furtherance of Order WR 94-5, by Notice dated September 25, 2000, the State Board noticed hearings concerning "Hearing to Review the US Bureau of Reclamation Water Right Permits 11308 and 11310 (Applications 11331 and 11332) to Determine Whether any Modifications in Permit Terms and Conditions are Necessary to Protect Public Trust Values and Downstream Water Rights on the Santa Ynez River below Bradbury Dam (Cachuma Reservoir) and to Consider Change Petitions for Water Rights Permits 11308 and 11310"; the first phase of which hearing concerning proposed Change in Place and Purpose of Use Petitions was conducted on November 6, 2000; and a second phase of said hearing is anticipated in the Spring of 2003 will consider whether changes in said Permit terms and conditions are necessary

to protect public trust resources and downstream water rights (said hearings herein being collectively referred to as "94-5 Hearings"); and

G. The parties to this Agreement along with others, including the California Department of Fish and Game and the United States Fish and Wildlife Service, have entered into a series of Memoranda of Understanding, the last effective December 1, 2000 ("Fish MOU"), in order to develop a consensus process to address public trust resource issues affected by the Cachuma Project. Further purposes of the Fish MOU are to implement the Lower Santa Ynez River Fish Management Plan ("FMP") and the Terms and Conditions of the United States National Marine Fisheries Service Biological Opinion ("NMFS BO") entitled "U. S. Bureau of Reclamation operation and maintenance of the Cachuma Project on the Santa Ynez River in Santa Barbara County, California", dated September 11, 2000 pursuant to Section 7 of the Endangered Species Act. Among other things, the parties to this Agreement intend by this Agreement to jointly advocate for the State Board to issue orders for the future operation of the Cachuma Project as provided at Paragraph 4 hereof; and

H. It is the desire of the parties to this Agreement to resolve actual and potential disputes which exist among them relative to the obligation of USBR to make releases from Bradbury Dam for protection of downstream water rights such that entering into Phase 2 of the 94-5 Hearings, the parties to this Agreement are in agreement that, subject to potential termination as provided at Paragraph 5 hereof, the downstream water rights holders are protected and that the State Board need not take any additional actions in protection of downstream water rights holders at this time; and

I. The parties to this Agreement, all of which have been involved in the consensus process leading to the Fish MOU to protect public trust resources, desire to coordinate the protection of public trust resources and downstream water right releases so as to provide for

protection of such public trust resources and maximize the beneficial use of water from the Santa Ynez River, all in a manner consistent with the FMP and the Terms and Conditions of the NMFS BO; and

J. In conjunction with the 94-5 Hearings, the State Board is expected to consider and certify an Environmental Impact Report which will consider the environmental effects of any changes in the terms and conditions of the Cachuma Project permits, including certain modified operations set forth in this Agreement.

EXECUTORY AGREEMENTS:

NOW, THEREFORE, in consideration of the above recitals and the mutual promises made herein, the parties to this Agreement agree as follows:

1. **Downstream Water Rights Releases**

1.1 **Support of WR 89-18.**

The parties to this Agreement agree that releases pursuant to State Board Order WR 73-37 as modified by WR 89-18 (herein collectively called "WR 89-18") and modified as provided in this Agreement will adequately protect downstream water rights and will not significantly adversely affect water quality otherwise available to downstream water right holders and collectively agree to support WR 89-18 and the modifications as provided in this Agreement before the State Board, as the appropriate mechanism for administering downstream water rights releases. The parties to this Agreement agree to advocate for, to be bound by, to comply with, and not to seek judicial challenge, of a State Board order to operate the Cachuma Project according to WR 89-18, modified as provided in this Agreement.

1.2 **Conjunctive Operation with Fish Releases.**

For purposes of operating downstream water rights releases in conjunction with releases required under the NMFS BO in a manner to reduce the impacts on

the Cachuma Project water supply, while meeting the target rearing flows required by the NMFS BO, which is an obligation of the Cachuma Project, Santa Ynez shall order downstream water rights releases pursuant to Condition 5 of WR 89-18 (modifying condition No. 5 of Permits 11308 and 11310) consistent with Exhibit "A" hereto.

1.3 **Conjunctive Operation of Below Narrows Account.**

In order to resolve a dispute which may exist between all or some of the parties to this Agreement as to whether and under what conditions "Curve B" may apply in lieu of "Curve A" insofar as determining Below Narrows Account ("BNA") credits as provided in Paragraph 2.2.1 of Condition 5 of WR 89-18, the parties to this Agreement agree that BNA credits shall be computed as set forth in Exhibit "B" hereto. This arrangement shall include, under circumstances described in Exhibit B, the availability of "Accumulated Drought Water Credits" from the BNA for the benefit of the Cachuma Member Units under conditions therein described.

1.4 **Technical Amendments to WR 89-18.**

In order to accommodate changed circumstances and in furtherance of implementation of paragraphs 1.2 and 1.3 of this Agreement, the parties to this Agreement shall jointly support the technical amendments set forth at Exhibit "C" hereto as modifications to be made to WR 89-18.

1.5 **Deliveries During Releases.**

The parties to this Agreement will, as provided in Exhibit D, make best efforts to maximize the delivery by the Central Coast Water Authority ("CCWA") of State Water Project (SWP) water with lower concentrations of total dissolved solids ("TDS") into the outlet works at Bradbury Dam during WR 89-18 water rights releases consistent with the NMFS BO. This will be accomplished through the commingling of SWP water with WR 89-18 water rights releases in

the outlet works of Bradbury Dam when downstream water rights releases are being made. Generally, SWP deliveries by CCWA are of lower TDS concentrations compared to water released from Lake Cachuma under WR 89-18. The objective of such commingling operations is to maximize the delivery of SWP Water to lower the TDS in the lower Santa Ynez River and at the Narrows. Such coordinated program shall be carried out as set forth in Exhibit "D" hereto.

1.6 **Subsequent Review of Conjunctive Operations.**

The conjunctive operation provisions of Paragraph 1.2, 1.3 and 1.5 will be reviewed and evaluated at the end of a ten (10) year period following this Agreement becoming effective and may thereafter be revised upon mutual agreement of Santa Ynez, ID #1, Lompoc and CCRB, with the concurrence of USBR and State Board when applicable. If a party requests a revision of this Agreement following such review, and cannot reach agreement with the other parties within 180 days of the request, the matter will then be submitted to a mediator mutually agreeable to the parties to this Agreement. If after ninety (90) days the mediation effort is unsuccessful or the parties cannot agree on a mediator, any party may then request that the State Board review the matter in the manner provided by law. In order to seek a revision, a party must demonstrate by substantial evidence that the objectives of Paragraph 1.2, 1.3 or 1.5 are not being met.

2. **Modified Winter Storm Operations.**

The parties to this Agreement support USBR's adoption and continued use of "Modified Winter Storm Operations" as described in USBR Technical Memorandum No. WR-8130-RA-TM-00-2, entitled "Risk Based Evaluation, Modified Storm Operations-Bradbury Dam", dated February, 2000 and the Santa Barbara County Water Agency report entitled "Report of Modified Storm Operations, Bradbury Dam, Cachuma Project, Santa Barbara County, California", dated December 29, 1998.

3. **Resolution of Litigation and Claims by City of Lompoc.**

3.1 Lompoc hereby waives and forever discharges USBR and the parties to this Agreement from all of its existing financial damage claims relative to impacts of the operation of the Cachuma Project upon Lompoc water rights and upon TDS of water quality in the Lompoc groundwater basin based upon: (a) alleged injury prior to the date of this Agreement, and (b) alleged injury after the date of this Agreement during such times as this Agreement is in effect and during such time as a matter related to Paragraph 1.5 has not been referred to the State Board pursuant to Paragraph 1.6.

3.2 Lompoc hereby withdraws its protest to the Cachuma Project Change in Place and Purpose of Use presented in connection with Phase 1 of the 94-5 hearings.

4. **Protection of Public Trust Resources.**

The parties to this Agreement will mutually support before the State Board in Phase 2 of the 94-5 Hearings the Terms and Conditions of the NMFS BO and the FMP as the preferred operational program for the Cachuma Project in order to address public trust resource issues.

5. **Effective Date and Termination.**

5.1 This Agreement shall be deemed effective upon the date first stated above, provided that Paragraphs 1.2, 1.3 and 1.4 shall not become effective until the State Board issues an order or adopts a decision amending the terms and conditions of the USBR's water right permits confirming that downstream water rights releases will continue to be made consistent with WR 89-18, as modified by the technical changes enumerated at Exhibit "C" hereto, without any material change.

5.2 This Agreement shall terminate and shall be of no further force and effect if (i) the State Board, following the completion of the hearing required by Order WR 94-5,

issues an order that does not require that downstream water rights releases continue to be made consistent with WR 89-18, as modified by this Agreement, without any material change, and (ii) within 90 days of finalizing any State Board order under (i), any party provides written notice to the other parties of invoking this Paragraph 5.2.

6. **Standard Provisions.**

6.1 **Notices.**

Notices may be given to the parties to this Agreement and interested entities by mailing written notice, with first class postage prepaid, as follows (except as a party may provide written notice to all of the parties to this Agreement of a change of address):

To: United States Bureau of Reclamation
Attention: Regional Water Rights Officer
2800 Cottage Way, Room E-2903, MP440
Sacramento, CA 95825

Cachuma Conservation Release Board
Attention: Manager
3301 Laurel Canyon Road
Santa Barbara, CA 93105

Santa Ynez River Water Conservation District
Attention: General Manager
P. O. Box 719
Santa Ynez, CA 93460-0719

Santa Ynez River Water Conservation District,
Improvement District No. 1
Attention: District Manager
P. O. Box 157
Santa Ynez, CA 93460

City of Lompoc
Attention: City Administrator
City Hall, 100 Civic Center Plaza
Lompoc, CA 93436

6.2 **Headings.**

The titles and headings of this Agreement are for purposes of convenience only, and shall be given no substantive meaning in interpreting this Agreement.

6.3 **Counterparts.**

This Agreement may be executed in counterparts and as so executed shall constitute one agreement which shall be binding on all parties to this Agreement notwithstanding that all parties to this Agreement are not signatory to the original or the same counterpart.

6.4 **California Law Applies.**

This Agreement shall be construed pursuant to the laws of the State of California.

CACHUMA CONSERVATION RELEASE BOARD

By: _____

APPROVED AS TO FORM

By: _____

SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

By: _____

APPROVED AS TO FORM

By: _____

SANTA YNEZ RIVER WATER CONSERVATION DISTRICT, IMPROVEMENT DISTRICT NO. 1

By: _____

6.2 **Headings.**

The titles and headings of this Agreement are for purposes of convenience only, and shall be given no substantive meaning in interpreting this Agreement.

6.3 **Counterparts.**

This Agreement may be executed in counterparts and as so executed shall constitute one agreement which shall be binding on all parties to this Agreement notwithstanding that all parties to this Agreement are not signatory to the original or the same counterpart.

6.4 **California Law Applies.**

This Agreement shall be construed pursuant to the laws of the State of California.

CACHUMA CONSERVATION RELEASE BOARD

By:_____

APPROVED AS TO FORM

By:_____

SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

By:_____

APPROVED AS TO FORM

By:_____

6.2 **Headings.**

The titles and headings of this Agreement are for purposes of convenience only, and shall be given no substantive meaning in interpreting this Agreement.

6.3 **Counterparts.**

This Agreement may be executed in counterparts and as so executed shall constitute one agreement which shall be binding on all parties to this Agreement notwithstanding that all parties to this Agreement are not signatory to the original or the same counterpart.

6.4 **California Law Applies.**

This Agreement shall be construed pursuant to the laws of the State of California.

CACHUMA CONSERVATION RELEASE BOARD

By:_____

APPROVED AS TO FORM

By:_____

SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

By:_____

APPROVED AS TO FORM

By:_____

SANTA YNEZ RIVER WATER CONSERVATION DISTRICT, IMPROVEMENT DISTRICT NO. 1

By: Harlan J. Burchardi

APPROVED AS TO FORM

By: Gregory K. Wilkinson

CITY OF LOMPOC

By:_____

APPROVED AS TO FORM

By:_____

APPROVED AS TO FORM

By:_____

CITY OF LOMPOC

By:_____

APPROVED AS TO FORM

By:_____

Exhibit A

PROCEDURES FOR CONJUNCTIVE OPERATION WITH FISH RELEASES

The purpose of operating the downstream water right releases in conjunction with the fish water releases is to reduce the impacts on the Cachuma Project water supply while meeting the target rearing flows described by the United States National Marine Fisheries Service Biological Opinion ("NMFS BO".).

The downstream water right releases contributing to the conjunctive use operations consist of either releases from the Above Narrows Account or combined releases from the Above and Below Narrows Accounts. To assure that the downstream water right releases in the future (including with the Lake Cachuma surcharge) are similar to the historical practices, the following criteria are adopted:

1. Santa Ynez will cause downstream water right releases to be made that will also meet the target rearing flows in the mainstream of Santa Ynez River as required by the NMFS BO for an average of 65 days per year in years which are Designated for Water Right Releases, as described below in Paragraph 3.
2. The ten-year moving average of 65 days shall be the average of the most recent 10 years Designated for Water Right Releases. For the purpose of calculating the ten-year moving average, the initial year shall start in 1985.
3. For the purpose of the above calculations, all years are "Designated for Water Right Releases" except: (a) a year with a spill from Lake Cachuma exceeding 20,000 acre-feet; (b) a year immediately following the spill year with the spill amount exceeding 100,000 acre-feet; and (c) a year when there is less than 30,000 acre-feet of storage in Lake Cachuma.

4. To the extent water right releases are made in those years that are not Designated for Water Right Releases, then the number of days with water right releases shall be added to the next designated year.

5. In the event the ten-year moving average is calculated to be less than 65 days in a year when the storage in the Lake is less than 100,000 acre-feet (elevation 714.00 feet[1] m.s.l.), additional releases from the Above Narrows Account shall be made to meet the target rearing flows at the Hwy. 154 Bridge for the number of days necessary to raise the calculated ten-year average to 65 days. Such releases shall not be required when the storage in the Lake is more than 100,000 acre-feet (elevation 714.00 feet m.s.l.).

6. In a month when Lake Cachuma inflow is calculated by the USBR to be less than 25 acre-feet and no downstream water right releases are made in that month, releases up to 25 acre-feet from the Above Narrows Account shall be made in the following month to meet the target rearing flows required by the NMFS BO at the Hwy. 154 Bridge or Alisal Bridge, whichever is in effect. Such releases are included in the calculation of the ten-year moving average. Provisions of this paragraph do not apply when the storage in the Lake is less than 30,000 acre-feet.

7. Nothing in this Settlement Agreement or this Exhibit affects or diminishes the provision of Paragraph 1.6 of Condition 5 of SWRCB Order WR 73-37.

[1] Lake Cachuma bathymetric survey of year 2000

Exhibit B

PROCEDURES FOR CONJUNCTIVE OPERATION OF BELOW NARROWS ACCOUNT

1. With respect to calculation of Below Narrows Account (BNA) credits as provided at Paragraph 2.2 of Condition 5 in WR 89-18, BNA credits shall be computed using the Upper Curve (Curve A) at all times and the credits are accrued to the BNA. (Curve A (Upper Curve) and Curve B (Lower Curve) herein referred to are depicted in USBR Exhibit 1, Attachment E, dated December 1, 1988, referenced in said Paragraph 2.2.)

2. When the accumulated flow at the Narrows at the beginning of a month exceeds 50,000 acre-feet for that Water Year (October 1 through September 30), the use of the Lower Curve (Curve B) is triggered for the purpose herein provided. The difference in the credit amount between the Upper and Lower Curves will be calculated in that month and each subsequent month in that Water Year and is referred to as the "Upper Curve Water" ("UCW").

3. Cachuma Member Units shall accumulate a drought water credit equal to one-half of the UCW, except as provided in Paragraph 6. Such accumulated credits shall be called the Accumulated Drought Water Credit (ADWC) and shall not exceed a total of 3,200 acre-feet.

4. The ADWC shall be reduced proportionately when there is a spill reduction in the Below Narrows Account as provided in Paragraph 2.7 of Condition 5 in WR 89-18.

5. When the storage level in Lake Cachuma is less than 100,000 acre-feet (elevation 714.00 feet[1] m.s.l.), any BNA water in Lake Cachuma up to the ADWC shall be

held and made available to the Cachuma Member Units if and when they so notify USBR while the reservoir remains below the 100,000 acre-feet (elevation 714.00 feet m.s.l.) level for the purpose of reducing Project shortages. To the extent such BNA water is used to reduce Project shortages, the ADWC shall be reduced .

6. If the BNA water in the Lake is less than the ADWC when the storage level in Lake Cachuma is less than 100,000 acre-feet (elevation 714.00 feet m.s.l.), one-half of BNA credits created while the Lake remains below the 100,000 acre-feet (elevation 714.00[1] feet m.s.l.) level shall be held and made available to the Cachuma Member Units up to the ADWC and consistent with the provisions of Paragraph 5.

7. Upon the effective date of Paragraph 1.3 of the Settlement Agreement, an amount equal to 1,500 acre-feet of the BNA water shall be credited to the Cachuma Member Units as the initial ADWC. After the effective date of Paragraph 1.3 of the Settlement Agreement, and prior to the occurrence of the first spill from Lake Cachuma the initial ADWC shall be reduced to the extent UCW is accumulated in the ADWC pursuant to Paragraph 3. In any event, with the occurrence of such first spill after the effective date of Paragraph 1.3 of the Settlement Agreement, the amount remaining in the initial ADWC shall be reduced to zero.

8. The amount of deduction from the BNA for the last five years as set forth in Paragraph 2.2.1 of Condition 5 of WR 89-18 and Attachment F of USBR Exhibit 1 referenced in Paragraph 2.2.1 is deemed to be zero.

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[1] Lake Cachuma bathymetric survey of year 2000.

Exhibit C

TECHNICAL AMENDMENTS TO WR 89-18

Explanation of Technical Amendment No. 1

Since 1993, water has been released from Lake Cachuma for the purpose of studying and maintaining fish habitat in the upper part of the Santa Ynez River downstream of Bradbury Dam. As a result of such releases, a flow condition has been created in the Santa Ynez River at the San Lucas Bridge (Highway 154 bridge) and at other downstream locations. In consideration of Paragraph 1.4 of Condition 5 of SWRCB Order WR 89-18 and in consultation with Santa Ynez, the USBR moved the live stream observation in the Santa Ynez River at the San Lucas Bridge (Hwy. 154) to near the Hwy 154 crossing of San Lucas Creek (near Hwy. 154 crossing of the Santa Ynez River) in 1993. San Lucas Creek is the main tributary to the Santa Ynez River immediately upstream of the San Lucas Bridge.

As a result of fish water releases under the United States National Marine Fisheries Service Biological Opinion ("NMFS BO"), the parties have considered the proper application of Paragraph 1.4 of Condition 5 of SWRCB Order WR 89-18. The parties have agreed to the following amendments to WR 89-18:

Technical Amendment No. 1

(1.) Insert the following at the bottom of Paragraph 1.4 of Condition 5 of WR 89-18:

> "In addition, fish water released for maintenance of habitat, adaptive management and passage flows in the Santa Ynez River which is in transit between Bradbury Dam and the Narrows shall not be considered to be surface flow of the Santa Ynez River. When such fish water releases are made and flow measured in San Lucas Creek at the Highway 154 crossing

is less than 0.3 cfs, the live stream in the Santa Ynez River at the San Lucas Bridge (river mile 45.7) is deemed to be non-existent."

"When fish water releases are made and there is a visible stream of water flowing on the surface of the Santa Ynez River bed at the San Lucas Bridge (river mile 45.7), at the Mission Bridge near Solvang (river mile 38), at U.S. Highway 101 Bridge near Buellton (river mile 34.31), at the Santa Rosa damsite (river mile 25.3) and at Robinson Bridge near Lompoc (river mile 12.9), the flow measured at the Narrows Gage is adjusted as provided in Attachment H to USBR Exhibit 1, dated December 1, 1988, entitled "Correlation of Flow at Narrows to Live Stream Conditions Between the Narrows and Floradale Avenue" to meet the criteria for a live stream condition.

(2.) Add a third paragraph on Page 1 of said Attachment H to Exhibit 1 of the USBR to provide as follows:

"When fish water releases are made and there is a visible stream of water flowing on the surface of the Santa Ynez River bed at the San Lucas Bridge (river mile 45.7), at the Mission Bridge near Solvang (river mile 38), at U. S. Highway 101 Bridge near Buellton (river mile 34.31), at the Santa Rosa damsite (river mile 25.3) and at Robinson Bridge near Lompoc (river mile 12.9), the flow measured at the Narrows for the current day is reduced by: (i) an amount equal to one half of fish water released from Lake Cachuma during the same day or (ii) the amount of flow measured near the Mission

Bridge (Solvang) during the same day, whichever is less. If the adjusted measured flow at the Narrows for the current day is less than zero, it is deemed to be zero. The adjusted daily flow measured at the Narrows is used as the measured flow at the Narrows for the current day in the attached tabulation. The accumulated daily flows from October 1 through the preceding day measured at the Narrows and the accumulated daily flows for the preceding ten (10) days measured at the Narrows are not adjusted for the fish releases and they are based on measured flows at the Narrows. The adjustment for the fish releases provided in this paragraph is not applicable if there is a spill from Lake Cachuma during the current day."

(3.) Amend first sentence of item (p) under Condition 6 of WR 89-18 as follows:

"(p) A record of all daily flows and quality (as measured in EC/TDS) passing the Narrows as provided by the United States Geological Survey."

(4.) Establish a measuring station on San Lucas Creek by adding the following item under Condition 6 of WR 89-18:

"(q) A record of flow in San Lucas Creek at the Highway 154 crossing."

(5.) Provide daily flows of Santa Ynez River measured near the Mission Bridge (Solvang) by adding the following item under Condition 6 of WR 89-18:

"(r) A record of all daily flows and quality (as measured in EC/TDS) measured near the Mission Bridge (Solvang) as provided by United States Geological Survey."

Explanation For Technical Amendment No. 2

As described in Paragraph 1.3 of the Settlement Agreement and its Exhibit B, the Conjunctive Operation with the Below Narrows Account is intended to resolve any issue relating to when Curve A or B as described in Paragraph 2.2.1 of Condition 5 in WR 89-18 and Attachment F of USBR Exhibit 1 should be used and the quantity of BNA water to be credited to the Project once a "trigger" for the Lower Curve is established. It is noted that this compromise continues the use of the Upper Curve for purposes of establishing BNA credits, but under certain conditions sets aside a portion of the BNA credits for the Cachuma Member Units to utilize when most needed, that is during dry conditions.

Technical Amendment No. 2

(1) Delete Paragraph 2.2.1 of Condition 5 set forth in WR 89-18 and Attachment F of USBR Exhibit 1 and modify the second paragraph in Attachment E of said USBR Exhibit 1 to provide as follows: "Curve B will not be used for the purpose of calculating the BNA credits".

(2) Add as Paragraph 2.5.1 of Condition 5

> "(2.5.1) Notwithstanding Paragraph 2.5, BNA water in Lake Cachuma up to the Accumulated Drought Water Credit (ADWC) shall be made available to the Cachuma Member Units when and so long as the Lake Cachuma storage level remains below 100,000 acre-feet in accordance with the "Procedures for Conjunctive Operation of Below Narrows Account" depicted on USBR Exhibit _____, dated _____, 2003."

Explanation of Technical Amendment No. 3.

CCWA delivers SWP water to the South Coast through Lake Cachuma and Tecolote Tunnel. Consistent with the measurements performed for the SWP deliveries, the following amendments are provided under Condition 6 of WR 89-18.

Technical Amendment No. 3

(1) Amend item (d) under Condition 6 of WR 89-18 as follows:

"(d) Daily inflow to Lake Cachuma, including underground flows, by proper computations of tunnel diversions, reservoir releases, spills, Central Coast Water Authority (CCWA) deliveries into Lake Cachuma, and change in storage."

(2) Add item under Condition 6 of WR 89-18:

"(s) Continuous records of CCWA deliveries into Lake Cachuma

Exhibit D

PROCEDURES FOR MAXIMIZING DELIVERIES OF CCWA WATER TO LAKE CACHUMA DURING DOWNSTREAM WATER RIGHTS RELEASES

The following procedures will be undertaken:

1. On or about April 10 of each year, Santa Ynez shall provide to the USBR, CCRB, Lompoc and ID#1 a preliminary schedule estimating the number and duration of WR 89-18 water rights releases during the next twelve (12) months and indicating in which months anticipated releases will be made.

2. It is noted that SWP water is delivered to Lake Cachuma from the forebay of the Central Coast Water Authority (CCWA) Santa Ynez Pumping Plant. The pumping plant is equipped with five pumping units; only four units are required to pump the design flow of 22 cfs (5.5 cfs per pump) to Lake Cachuma and one unit is reserved as a standby pump. The present performance of the pumping units (about 7.5 cfs per pump) exceeds the design flow. Variations in the discharge rate from the pumping plant are accommodated through varying the number of pumps in operation.

   CCRB Members shall request deliveries through the CCWA to maximize their deliveries of SWP water into Lake Cachuma during those months when water rights releases are scheduled as provided in Paragraph 1 above. This will be accomplished in the following manner: During the periods when downstream water rights releases are made: (i) CCRB Members through CCWA shall request deliveries of an amount of SWP water to the forebay of the Santa Ynez Pumping Plant at flow rates sufficient to ensure that at least two pumping units at the Santa

Ynez Pumping Plant are capable of delivering water to Lake Cachuma; and (ii) ID #1 shall coordinate with CCWA while preserving its scheduled deliveries of SWP water and Cachuma exchange water so as to facilitate the operation of at least two pumping units at the Santa Ynez Pumping Plant, as provided at Subparagraph (i) above.

3. The delivery of CCWA water to Lake Cachuma during downstream water rights releases, as provided for in Paragraphs 1 and 2 above, shall be subject to the following conditions:

   A. In coordinating deliveries and water rights releases as provided for herein, CCRB Members and ID #1 shall not be required to take actions which are inconsistent with the annual quantities of SWP water and Cachuma exchange water which they otherwise would have ordered.

   B. To the extent there is a failure in the CCWA delivery system, including the SWP facility, which prevents delivery of SWP water to Lake Cachuma, the coordination of deliveries shall not occur during the affected period and will not be made up in later periods.

   C. The parties recognize that there is a limitation in the capacity of the CCWA pipeline to deliver SWP water to Lake Cachuma. To the extent the delivery capacity is increased in the future, such increase will enhance the deliveries of SWP water to the South Coast and at the same time should increase the amount of SWP water available for commingling when downstream water rights releases are made. In this regard, if the delivery capacity of the CCWA pipeline to the Santa Ynez Pumping Plant is

increased in the future, more than two pumping units should be available to be utilized during the WR 89-18 releases.

D. Nothing in this Settlement Agreement or this Exhibit is intended to be inconsistent with the CCWA Water Supply Agreements.

E. The parties recognize that blending restrictions imposed by the NMFS BO may limit the ability to commingle SWP water with downstream water rights releases.

4. The parties agree to periodically review operations under this Exhibit D and, if necessary, CCRB Members and ID#1 will make good faith operational adjustments to maximize SWP water deliveries to Lake Cachuma during WR 89-18 releases, consistent with the purposes of Section 1.5 of the Settlement Agreement and this Exhibit "D."

APPENDIX C.2

State Board Water Right Order 73-37

Files

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Permits 11308 and 11310, Issued on Applications 11331 and 11332, U. S. BUREAU OF RECLAMATION Permittee	ORDER NO. WR 73-37 Source: Santa Ynez River County: Santa Barbara

ORDER AMENDING PERMITS

BY BOARD VICE CHAIRMAN ROBIE:

On February 28, 1958 the former State Water Rights Board adopted Decision 886 approving Application 11331 and 11332 of the U. S. Bureau of Reclamation covering the Cachuma Project. The principal features of the project are Bradbury Dam and Lake Cachuma on Santa Ynez River, Tecolote Tunnel to convey water through the Santa Ynez Mountains to the coastal area of Santa Barbara County, and the South Coast Conduit to distribute water to several county water districts and the City of Santa Barbara in the coastal area. The Board found that while there was sufficient unappropriated water to justify issuance of permits, it was necessary to retain jurisdiction to the extent and for such period of time as may be reasonably necessary for the determination

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of streamflow of the Santa Ynez River required for protection of vested rights without resulting in waste into the ocean. Accordingly, Condition 13 of Decision 886 reserved jurisdiction for 15 years or for such further time prior to issuance of license as the Board may determine upon notice and hearing to be necessary for said purpose. By order of February 15, 1973, the reserved jurisdiction was continued until further order, to be made not later than October 1, 1973.

Hearing having been held on January 26, 1973 in accordance with the continuing jurisdiction and the permittee, with concurrence of representatives of downstream and project water users, having submitted a proposed new plan for operation of Bradbury Dam and Lake Cachuma, the Board finds as follows:

1. By maintaining groundwater storage space in the aquifers downstream from Bradbury Dam, the proposed plan of operation will result in increased percolation and conservation of inflow to Santa Ynez River downstream from the dam.

2. The effects of the proposed plan on wildlife due to changes in riparian vegetation and on water supplies of downstream users can be determined only through actual operation. Therefore, continuing jurisdiction should be reserved during a trial period of actual operation during which the Board upon the request of any party, or on its own motion, may hear, review and make further order as may be required.

3. During the trial period modification may be required of the procedures and criteria for determining releases from Bradbury Dam necessary to

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achieve the objectives of the operating plan. The order should provide for such modifications if proposed by the permittee, and agreed to by Santa Ynez River Water Conservation District and the State Water Resources Control Board.

NOW, THEREFORE, IT IS ORDERED that Condition No. 5, Condition No. 6 (as amended by orders of July 30, 1959, and September 28, 1961), and Condition No. 7 of Permits 11308 and 11310 (Applications 11331 and 11332) be amended to read as follows:

5. Water of the Santa Ynez River shall be stored in and released from Lake Cachuma in such amounts and at such times and rates as (a) will be sufficient, together with inflow from downstream tributary sources, to supply downstream diversions of the surface flow under vested prior rights to the extent water would have been available for such diversions from unregulated flow, (b) will be sufficient, together with inflow from downstream tributary sources, to maintain percolation of water from the stream channel as such percolation would occur from unregulated flow, in order that operation of the project shall not reduce natural recharge of groundwater from the Santa Ynez River, and (c) will enhance percolation of tributary runoff below Bradbury Dam to promote water conservation, more specifically as hereinafter set forth. Because studies and historical operation have shown that percolation rates are different above and below the Lompoc Narrows, the following provisions, to be complied with by permittee, are divided into two categories: (1) above the Narrows; and (2) below the Narrows.

(1) Above the Narrows

An "above Narrows" account shall be established and amounts of water shall be credited to and released from said account as provided below in this section (1).

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(1.1) The volume of dewatered storage in the groundwater basins above the Narrows shall be determined at the end of each calendar month. USBR Exhibit 20, dated March 1, 1973, in the hearing on this matter on January 26, 1973 contains, in Attachment A thereto, a list of indicator wells in 23 storage units comprising these basins which shall be used for this determination and, in Attachment B thereto, a compilation of curves dated March 1, 1973 that relate dewatered storage to water level elevations in the indicator wells.

(1.2) The operating dewatered storage (ODS) for the combined 23 storage units shall be 10,000 acre-feet of dewatered storage.

(1.3) All inflow to Lake Cachuma shall be computed on a daily basis and, except as otherwise specifically provided herein, shall be stored in the lake. Such computed Lake Cachuma inflow shall be deemed to be no less than 25 acre-feet per month.

(1.4) Each month, the inflow to Lake Cachuma stored that month during periods when a live stream did not actually exist in the Santa Ynez River shall be computed. All such stored inflow shall be credited monthly and accumulated in an "above Narrows" account. At the end of each month, the account shall be reduced if necessary, so that it does not exceed the actual amount of dewatered storage in the 23 storage units at that time. (A "live stream", as that term is used herein, shall be deemed to exist in

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the Santa Ynez River whenever there is a visible stream of water flowing on the surface of the River bed at the San Lucas Bridge, at the Mission Bridge near Solvang, at U. S. Highway 101 Bridge near Buellton, at the Santa Rosa Damsite (river mile 25.3), at Robinson Bridge near Lompoc, and at the "H" Street Bridge north of Lompoc, and also there is a surface flow in the River of not less than one (1) cubic foot of water per second at the 13th Street Bridge north of Lompoc.)

(1.5) If, at any time, the total dewatered storage in the basins above the Narrows exceeds the ODS, releases of water in the "above Narrows" account shall be made at such times, amounts and rates of flow as are requested by the Santa Ynez River Water Conservation District (Santa Ynez), but the amount of such releases shall not exceed (i) the quantity required to raise the water levels to the ODS, or(ii) the quantity accumulated in the "above Narrows" account, whichever is smaller. The amounts so released shall be deducted from the "above Narrows" account.

(1.6) Notwithstanding paragraph (1.5) above, for the benefit of water users upstream from San Lucas Bridge, permittee may release water in any month up to the total computed inflow for the two previous months less previous releases of such two months inflow. Of the total amount so released for such users, only an amount not in excess of the two previous months' increase in the "above Narrows" account shall be deducted from that account.

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(1.7) The "above Narrows" account shall not be reduced by Lake Cachuma evaporation.

(1.8) In the event of a spill from Lake Cachuma, water in the "above Narrows" account shall be deemed to be the first water spilled to the extent dewatered storage is reduced during the month spill occurs.

(1.9) The point of delivery of water in the "above Narrows" account shall be at Bradbury Dam.

(2) Below the Narrows

A "below Narrows" account shall be established and amounts of water shall be credited and released from said account as provided below in this section (2).

(2.1) As stated in paragraph (1.3) of section (1) above, all inflow to Lake Cachuma shall be stored in the Lake, except as otherwise specifically provided herein. An approximation of the flow at the Narrows that would have occurred in the absence of the Cachuma Project (hereinafter called "constructive flow") shall be computed monthly as follows (hereinafter, the month for which the computation is made is called the "computation month"):

(2.1.A) For each computation month in which no releases were made from the "below Narrows" account, the Cachuma inflow shall be either (i) increased by the amount by which the "above Narrows" account at the end of the previous computation month exceeded the dewatered storage at the end of the computation month, or (ii) decreased by the amount by which such dewatered storage exceeded the

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previous computation month's "above Narrows" account. From the result shall be subtracted the computation month's releases and spills, if any. The result shall be the increment to be added to the measured flow at the Narrows to determine the constructive flow at the Narrows for the computation month. If that increment is negative, it shall be treated as zero.

(2.1.B) For each computation month in which releases were made from the "below Narrows" account, the computation month releases and spills and the measured flow at the Narrows used in the computation as set forth in subparagraph (2.1.A) of this paragraph (2.1) above shall be decreased by the amount of the "below Narrows" account releases which reached the Narrows during the computation month. Such amount shall be determined as described in subparagraph (2.1.C) of this paragraph (2.1), immediately following.

(2.1.C) The amount of the "below Narrows" account releases which reached the Narrows during a computation month shall be determined as follows: The Salsipuedes Creek contribution to flow at the Narrows during the computation month shall be subtracted from the measured flow at the Narrows for that month. If such measured flow at the Narrows minus such Salsipuedes Creek contribution equals or

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exceeds the quantity released from the "below Narrows" account that month, it shall be deemed that all of the "below Narrows" release reached the Narrows. If such measured flow at the Narrows minus such Salsipuedes Creek contribution is less than the "below Narrows" release, it shall be deemed that only the difference between such measured flow at the Narrows and such Salsipuedes Creek contribution reached the Narrows.

(2.1.D) Water may be released from Lake Cachuma and be in transit above the Narrows at the end of a month and, as a result, computations made as of that date may not accurately reflect pertinent facts. To compensate for such occurrences, appropriate adjustments shall be made to the calculations required by this order.

(2.2) A monthly computation shall be made of the amount of impairment of percolation to the Lompoc Basin due to the Cachuma Project. The amount of such percolation during the computation month shall be determined by means of the "percolation/flows at Narrows" correlation shown in USBR Exhibit 20, Attachment C, dated March 1, 1973, assuming (i) the measured flow at the Narrows and (ii) the constructive flow at the Narrows. The monthly impairment shall be equal to the difference between the two amounts thus determined. For months in which there is a release

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from the "below Narrows" account, measured flow at the Narrows as used pursuant to this paragraph (2.2) shall be decreased in accordance with subparagraph (2.1.B) of paragraph (2.1) of this section (2) above.

(2.3) The amount of percolation impairment shall be credited to the "below Narrows" account. The volume of dewatered storage in the groundwater basin below the Narrows shall be determined at the end of each month. Each month the account shall be reduced, if necessary, so that it does not exceed the actual amount of dewatered storage in the Lompoc Basin at that time. A list of indicator wells in eight storage units in the Lompoc Basin is contained in USBR Exhibit 20, Attachment D, revised March 1, 1973. USBR Exhibit 20, Attachment E, is a compilation of curves dated March 1, 1973 that relate dewatered storage to water level elevations in the indicator wells. Because of uncertainty as to whether the "full" elevations initially shown for the indicator wells in Attachments D and E are correct, such initially shown "full" elevations are tentative only and shall not be used for purposes of reducing the "below Narrows" account unless they are reviewed and are affirmed in accordance with the procedure prescribed in section (a) or section (b) of Condition No. 7 or, if not affirmed, are modified in accordance with said procedure, and in such case they shall then be used as modified.

(2.4) The "below Narrows" account shall not be reduced by Lake Cachuma evaporation.

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(2.5) Releases of water in the "below Narrows" account shall be requested by Santa Ynez as soon after the credit is computed as is reasonably consistent with the goal of optimizing the percolation of a substantial amount of such water into the Lompoc Basin, and in such requests Santa Ynez shall specify the desired amounts and rates of flow of such releases, subject to the limitation described below. Permittee shall make the requested releases. The "below Narrows" account shall be reduced by the amount of water so released which reaches the Narrows, as determined pursuant to subparagraph (2.1.C) of paragraph (2.1) of this section (2) above. The amount of water so released which does not reach the Narrows shall be deducted from the "above Narrows" account. The "above Narrows" account may have a negative balance as a result of releases of water from the "below Narrows" account. In the event of a spill from Lake Cachuma, any such negative balance shall be adjusted to zero. To the extent a negative balance exists in the "above Narrows" account, all inflow to Lake Cachuma shall be credited to that account. For any month the requests for releases of water in the "below Narrows" account shall not exceed the lesser of (i) the "below Narrows" account at the end of the previous month, or (ii) the algebraic sum of the "below Narrows" account at the end of the previous month plus the "above Narrows" account at the end of the previous month plus 2,000 acre-feet.

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(2.6) The point of delivery of waters stored in the "below Narrows" account shall be at Bradbury Dam.

(2.7) As provided in paragraph (1.8) of section (1) above, in the event of a spill from Lake Cachuma, water in the "above Narrows" account shall be deemed to be the first water spilled to the extent dewatered storage is reduced during the month spill occurs. Additional spill shall be deemed to be water in the "below Narrows" account to the extent dewatered storage below the Narrows is reduced during the month spill occurs.

6. Until further order of the Board, permittee shall make or cause to be made suitable field investigations, measurements, and studies, and shall install necessary measuring facilities, to determine the amount, timing, and rate of releases of water into the natural channel of the Santa Ynez River below Bradbury Dam that are required of permittee in order to fully comply with the provision of Condition No. 5 in this permit, and to determine the effects on riparian vegetation of releases in accordance therewith. Permittee shall provide the necessary measuring devices and shall submit to the Board with the annual progress reports, or at such other times as the Board may require, a report of such investigations, measurements, and studies and the results thereof, including but not limited to the following:

(a) A continuous record of Lake Cachuma water surface elevations.

(b) A continuous record of precipitation near Bradbury Dam.

(c) Daily evaporation, wind movement, precipitation, and temperature near Bradbury Dam.

(d) Daily inflow to Lake Cachuma, including underground flows, by

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proper computations of tunnel diversions, reservoir releases, spills, and change in storage.

(e) (Eliminated by Order of September 28, 1961.)

(f) (Eliminated by Order of September 28, 1961.)

(g) Continuous records of outflow from Lake Cachuma, including flows through river outlets at Bradbury Dam, inflows and outflows through Tecolote Tunnel, and overflows at Bradbury Dam spillway. Instruments suitable for accurate measurement of small outflows shall be installed.

(h) Continuing groundwater studies below Bradbury Dam in the Santa Ynez Basin, with monthly observation of representative wells influenced by Santa Ynez River flows at locations as shown on USBR Drawing No. 368-208-499 dated January 9, 1973, (revised February 2, 1973), USBR Exhibit 20, Attachment F.

(i) (Eliminated)

(j) Semiannual water quality analyses of surface and groundwater downstream from Bradbury Dam at locations as shown on USBR Drawing No. 368-208-499 (revised February 2, 1973).

(k) (Eliminated)

(l) (Not used)

(m) Periodic aerial color photographs of the Santa Ynez River channel from Bradbury Dam to its mouth, such photographs to be taken annually or at less frequent intervals with concurrence of California Department of Fish and Game and notification to the Board.

(n) Periodic groundlevel color photographs of representative areas of riparian vegetation along the river, such photographs to be

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taken monthly or at less frequent intervals with concurrence of California Department of Fish and Game and notification to the Board.

(o) A record of monthly quantities of dewatered groundwater storage downstream from Bradbury Dam and of monthly quantities shown in the "above Narrows" and the "below Narrows" accounts, as described in Condition No. 5 of this permit.

Permittee shall make its records of such investigations and measurements available for inspection by the Board and shall allow authorized representatives of the Board, Santa Barbara County Water Agency and member units, City of Lompoc, and United States military installation at Vandenberg Air Force Base, reasonable access to its project works and properties for the purpose of gathering information and data.

7. The Board, either upon the request of any party or on its own motion, may, and shall, prior to the expiration of a 15-year trial period after the date of this Order, hear, review, and make such further and different orders as may be required concerning proper releases of water for downstream use, riparian vegetation, and recharge of groundwater, and concerning the investigations, measurements, and studies to be conducted by permittee, until a final determination and order can be made concerning the amounts, timing and rates of releases of water past Bradbury Dam in satisfaction of downstream rights, and the Board retains continuing jurisdiction for such purposes during said 15-year trial period, or for such further time prior to issuance of license as the Board may determine upon notice and hearing to be reasonably necessary for the aforesaid purposes. During such period, the provisions of Conditions Nos. 5 and 6 above are subject to modification by any of the following procedures:

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(a) The provisions shall be modified as provided by a written proposal of permittee concurred with in writing by Santa Ynez. The modifications provided by such proposal shall go into effect 30 days after a copy of such proposal has been filed with the Board, unless the Board orders to the contrary prior to the expiration of such 30-day period. Should the Board so order, the Board shall, as soon as practicable, schedule, notice, and hold a hearing, and thereafter issue a decision and order, as to whether the modifications proposed by such proposal, or any other modifications, shall go into effect.

(b) Upon written request by permittee or by Santa Ynez, or on its own motion, the Board shall, as soon as practicable, schedule, notice, and hold a hearing, and thereafter issue a decision and order, as to whether modifications as proposed in such request or by the Board, or any other modifications, should be approved by the Board and go into effect.

(c) If any user of groundwater supplied by the Santa Ynez River downstream from Bradbury Dam or Santa Ynez files a verified written claim for damages with permittee (and mails a copy thereof by registered mail to the Board, and, in the case of a user other than Santa Ynez, to Santa Ynez) that, by reason of the storage of water in Lake Cachuma pursuant to this order, said user or Santa Ynez has been damaged, and permittee denies or fails to act on said claim within 60 days after receipt thereof, Santa Ynez may give written notice to the Board (with copies thereof by registered mail to permittee and any claimant) as follows: said written notice shall state that Santa Ynez

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has investigated the claim and believes it to be meritorious, and that because of permittee's failure to approve and pay such claim Santa Ynez elects to modify section (1) of Condition No. 5 of this permit as follows:

(1) In paragraph (1.2) of said section (1) "zero" would be substituted for "10,000".

(2) In the first line of paragraph (1.5) of said section (1), the words "between May 1 and November 1" would be substituted for the words "at any time".

(3) In the third line of said paragraph, the words "between May 1 and November 1 and in such" would be inserted after the words "shall be made at such times".

Said modifications shall become effective immediately. Thereupon, the Board shall, as soon as practicable, schedule, notice, and hold a hearing and thereafter issue a decision and order as to whether the modifications to section (1) of Condition No. 5 described above, or any other modifications, shall remain or go into effect. Notwithstanding the above, the election by Santa Ynez to so modify shall not be construed to adversely affect any rights or remedies which either Santa Ynez or any downstream water user may have against the permittee or any other person or entity by reason of any loss or expense which may occur as a direct result of the release program provided for herein.

RECYCLED PAPER

IT IS FURTHER ORDERED that Condition No. 8 of said permits be deleted.

Dated: July 5, 1973

We Concur:

RONALD B. ROBIE
Ronald B. Robie, Vice Chairman

W. W. ADAMS
W. W. Adams, Chairman

ROY E. DODSON
Roy E. Dodson, Member

MRS. CARL H. (JEAN) AUER
Mrs. Carl H. (Jean) Auer, Member

W. DON MAUGHAN
W. Don Maughan, Member

RECYCLED PAPER

APPENDIX C.3

State Board Water Right Order 89-18

P11310

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Permits 11308 and 11310 Issued pursuant to Applications 11331 and 11332; The United States Bureau of Reclamation, Permittee

Order: WR 89-18

Source: Santa Ynez River

County: Santa Barbara

ORDER CONTINUING RESERVED JURISDICTION
AND ISSUING AMENDED PERMITS

FINDINGS BY THE BOARD:

1. Order paragraph 13 of Decision D 886, adopted on February 28, 1958, reserved jurisdiction over Permits 11308 and 11310 issued pursuant to Applications 11331 and 11332. Jurisdiction was reserved for 15 years or for such further time prior to issuance of license as the Board might determine upon notice and hearing to be reasonably necessary to determine the amounts, timing, and rates of release of water past Bradbury Dam (Cachuma Reservoir) required to satisfy downstream rights.

2. Following a Board hearing on January 26, 1973, Board Order WR 73-9 (February 15, 1973) continued the reserved jurisdiction in D 886 over Permits 11308 and 11310 from February 28, 1973 until further order by the Board, such further order to be made not later than October 1, 1973.

3. Board Order WR 73-37 (July 5, 1973) amended Conditions 5, 6, and 7 of the permits. Amended Condition 7 of the permits provides for extending the initial 15-year trial period for refining Cachuma Reservoir operating procedures for an additional 15 years, thus extending the reservation of jurisdiction to July 5, 1988.

4. Board Order WR 78-10 (July 5, 1978) amended Condition 5.(1.4) of Permits 11308 and 11310 (as amended by Order WR 73-37), to change the method of measurement of water released from Cachuma Reservoir to satisfy downstream rights.

5. Board Order WR 88-2 (January 21, 1988) extended the date for hearing under Permit Condition 7 until July 1, 1989, and continued the Board's reserved jurisdiction for further order pursuant to Permit Condition 7 until December 31, 1989.

6. Permittee, Santa Ynez River Water Conservation District (District), whose boundaries include areas downstream of Cachuma Reservoir, the Cachuma Conservation Release Board, and the City of Lompoc, have jointly reviewed operating procedures for Cachuma Reservoir to determine if the permit terms, as amended by Board Orders WR 73-37 and 78-10, have actually resulted in the required releases of water for satisfaction of downstream rights.

7. Following review, analysis, discussion and negotiation with all parties and discussion of alternatives, permittee and the parties are in agreement that the Board should not commence a hearing until parties have had three new observation wells constructed to provide additional data. By letter dated March 13, 1989, permittee petitioned the Board for an additional ten-year trial period and requested that a hearing not be held on the matter until experience under the new trial operating procedure has been gained.

8. The Department of Fish and Game has requested, and the permittee has agreed, to modify and extend the riparian vegetation monitoring program in Condition

6(m) of Order ,,-37 to provide for continuing mo..coring of riparian vegetation in and along the margins of the Santa Ynez River below Bradbury Dam for at least an additional five years.

9. The California Sportfishing Protection Alliance (CSPA) on November 13, 1987 complained against permittee's operation of the project. CSPA alleges that project construction and operation has severely impacted a pre-project run of steelhead trout in the Santa Ynez River and that such action constitutes a misuse of water within the meaning of Article X, Section 2, California Constitution.

10. It is reasonable and in the public interest to allow permittee and the parties, until July 1, 1994, to resolve mutual concerns about the accounting and measurement of water released from Cachuma Reservoir prior to the required Board hearing. Such allowance will require continuing the period of time during which jurisdiction is reserved to adopt such further order. A five-year continuance to analyze the data from the three new wells, negotiate a new agreement between the parties, and for the Board to hold a hearing and adopt such further order is reasonable.

11. It is reasonable and in the public interest that the Board promptly conduct a hearing on the CSPA complaint in order to determine whether concerns relating to the operation of the project are valid and whether permittee's use of water is reasonable.

12. Conditions 5 and 6 of Permits 11308 and 11310 should be amended to show the new accounting, monitoring and operating procedure.

13. The Board's continuing authority provisions in the permits should be updated to conform to Section 780(a), of the California Code of Regulations.

14. The Board's approval of the proposed continuance of reserved jurisdiction for final hearing and to make permit changes as identified in Findings 8, 10 and 12 above constitutes only a minor alteration to an ongoing project approved prior to November 23, 1970 and is exempt from the requirements of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) under the statutory exemption of ongoing projects and the categorical exemption for minor changes in the operation of existing facilities, 14 CCR 15261 and 15301 respectively.

NOW, THEREFORE, IT IS ORDERED THAT:

1. The reservation of jurisdiction in Condition 7 of the subject permits, as amended by Order WR 73-37 and WR 88-2, is continued to December 31, 1994.

2. The hearing required by said Condition 7 shall be commenced no later than July 1, 1994.

3. Condition 6(m) in the permits shall be amended to read:

> 6. (m) Permittee and the Department of Fish and Game (DFG) shall develop and undertake a study plan and annual monitoring program to determine the extent and condition of the riparian vegetation in and along the margins of the Santa Ynez River below Bradbury Dam. Timing, methodology, and specific criteria to measure impacts to riparian vegetation will be part of the plan and program. A plan agreed to by the permittee and DFG shall be submitted to the Chief Division of Water Rights within one year of adoption of this order.

This program shall be in place for five years at which time the permittee and DFG shall report to the Board the feasibility of continuing such a program. An annual written report shall be prepared by permittee and DFG and submitted to the Board. The Board retains jurisdiction to adopt appropriate mitigation measures, in the event adverse impacts are caused to the riparian vegetation by release schedules or procedures contained within this order.

4. Continuing authority Condition 4 in both of the permits shall be amended to read:

Pursuant to California Water Code Sections 100 and 275, and the common law public trust doctrine, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Resources Control Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use or unreasonable method of diversion of said water.

The continuing authority of the Board may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to: (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the Board also may be exercised by imposing further limitations on the diversion and use of water by the permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Section 2; is consistent with the public interest and is necessary to preserve or restore the uses protected by the public trust.

Amended permits shall be issued including revised Permit Conditions 5, 6 and 7 as proposed by the permittee on March 13, 1989 and agreed to by the downstream users in the basin as modified by the Board and attached to and incorporated herein by reference.

6. Staff is directed to promptly prepare for and schedule a Board hearing on the CSPA complaint as soon as the Board's calendar allows.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 21, 1989.

AYE:	W. Don Maughan Darlene E. Ruiz Edwin H. Finster Eliseo M. Samaniego Danny Walsh
NO:	None
ABSENT:	None
ABSTAIN:	None

Maureen Marche'
Administrative Assistant to the Board

Permittee's March 13, 1989 Submittal
Modified by the Board on September 21, 1989

Proposed Modifications to WR-73-37
Pertaining to Permits 11308 and 11310
(Applications 11331 and 11332)
of the
United States Bureau of Reclamation
for the Cachuma Project, California
as developed by:

United States Bureau of Reclamation
Santa Ynez River Water Conservation District
Cachuma Conservation Release Board
City of Lompoc

5."(1.1) The volume of dewatered storage in the groundwater basins above the Narrows shall be determined at the end of each calendar month. USBR Exhibit 1, dated December 1, 1988, contains, in Attachment A thereto, a list of indicator wells in 23 storage units comprising these basins which shall be used for the determination and, in Attachment B thereto, a compilation of curves dated December 1, 1988 that relate dewatered storage to water level elevations in the indicator wells.

"(1.4) Each month, the inflow to Lake Cachuma stored that month during periods when a live stream did not actually exist in the Santa Ynez River shall be computed. All such stored inflow shall be credited monthly and accumulated in an 'above Narrows' account. At the end of each month, the account shall be reduced, if necessary, so that it does not exceed the actual amount of dewatered storage in the 23 storage units at that time. (A 'live stream', as that term is used herein, shall be deemed to exist in the Santa Ynez River whenever there is a visible stream of water flowing on the surface of the River bed at the San Lucas Bridge [river mile 45.7], at the Mission Bridge near Solvang [river mile 38], at U.S. Highway 101 Bridge near Buellton [river mile 34.31], at the Santa Rosa damsite [river mile 25.3], at Robinson Bridge near Lompoc [river mile 12.9] and the flow measured at the USGS gauge entitled 'Santa Ynez River at Narrows near Lompoc' [Narrows Gauge] meets the criteria for a live stream condition as shown on Attachment H to USBR Exhibit 1, dated December 1, 1988, entitled 'Correlation of Flow at Narrows to Live Stream Conditions Between the Narrows and Floradale Avenue'.) In determining the existence or non-existence of a live stream, water released by permittee from the "above Narrows" account pursuant to paragraph (1.5) of section (1) and from the "below Narrows" account pursuant to paragraph (2.5) of section (2) which is in transit above the Narrows, shall not be considered to be surface flow of the Santa Ynez River.

"(1.10) If it is determined by Santa Ynez that, as a result of the existence of the 10,000 acre foot "operating dewatered storage" provided for in paragraph (1.2) of this section (1), credits have been allocated to the "above Narrows" account based on inflow to Lake Cachuma, which, if released, would have percolated into the basin below the Narrows in the absence of such operating dewatered storage, and this condition has not otherwise been taken into account in allocating credits to the "below-Narrows" account, Santa Ynez may request the release of compensating amounts of "above Narrows" account waters in such a way that it percolates into the "below Narrows" basin. In that event, Santa Ynez shall inform the permittee in advance and the releases shall be deducted from the "above Narrows" account.

"(2.1A) For each computation month when a live stream did not exist at any time in the Santa Ynez River between San Lucas Bridge and the Narrows, the Cachuma inflow shall be either (i) increased by the amount by which the "above Narrows" account at the end of the previous computation month exceeded the "above Narrows" dewatered storage at the end of the computation month, or (ii) decreased by the amount by which such dewatered storage exceeded the previous month's "above Narrows" account. From the result shall be subtracted the computation month's releases and spills, if any. The result shall be the increment to be added to the measured flow at the Narrows to determine the constructive flow at the Narrows for the computation month. If that increment is negative, it shall be treated as zero.

"(2.1.B) For each computation month when a live stream existed at any time in the Santa Ynez River between San Lucas Bridge and the Narrows, the Cachuma inflow shall be decreased by the computation month's releases and spills. The result shall be the increment to be added to the measured flow at the Narrows to determine the constructive flow at the Narrows for the computation month.

"(2.2) A monthly computation shall be made of the amount of impairment of percolation to the Lompoc Basin due to the Cachuma Project. The amount of such percolation during the computation month shall be determined by means of the "Relationship Between Percolation from Santa Ynez River from Narrows through Floradale Avenue and Flow of Santa Ynez River at Narrows" correlation shown in USBR Exhibit 1, Attachment E, dated December 1, 1988, assuming (i) the measured flow at the Narrows and (ii) the constructive flow at the Narrows. The monthly impairment shall be equal to the difference between the two amounts thus determined.

"(2.2.1) For a period of five years, which years shall include a range of surface flow conditions in the Santa Ynez River below the Narrows from high to low, the parties will make additional observations to permit more accurate calculations as to when Curve B, [the lower curve] as depicted on USBR Exhibit 1, Attachment E, dated December 1, 1988 shall be used in lieu of Curve A, [the upper curve] as depicted on said USBR Exhibit 1, Attachment E. During said observation period, Curve A [the upper curve] shall be used at all times. Any party may, after an adequate observation period has ended, seek an amendment of this order to establish the time and circumstances under which Curve B, [the lower curve] shall be used. Upon the effective date of the amendment, the "below narrows" account credits for the five year period immediately preceding the amendment shall be recalculated using Curve B, [the lower curve] whenever appropriate, and adjustments to the "below Narrows" account shall be made. Any reductions in the "below Narrows" account resulting from such adjustments shall be spread equally over the five year period immediately following the effective date of the amendment, or such other period as the parties may agree to at the time.

"(2.3) The amount of percolation impairment shall be credited to the "below Narrows" account. The volume of dewatered storage in the groundwater basin below the Narrows shall be determined at the end of each month. Each month the account shall be reduced, if necessary, so that it does not exceed the actual amount of dewatered storage in the Lompoc Basin at that time. A list of indicator wells showing their "full" elevation in eight storage units in the Lompoc Basin is contained in USBR Exhibit 1, Attachment C, dated December 1, 1988. USBR Exhibit 1, Attachment D, dated December 1, 1988, is a compilation of curves that relate dewatered storage to water level elevations in the indicator wells. Said Attachments C and D shall be used to make the determination required by this paragraph (2.3) of Section (2).

"(2.5) Release of water in the "below Narrows" account shall be requested by Santa Ynez as soon after the credit is computed as is reasonably consistent with the goal of optimizing the percolation of a substantial amount of such water in the Lompoc Basin, and in such requests Santa Ynez shall specify the desired amounts and rates of flow of such releases, subject to the limitation described below. Optimal conditions for such releases include, but are not limited to, periods when a live stream exists at and above the Narrows and releases are being made of "above Narrows" account water. Permittee shall make the reasonably requested releases. The "below Narrows" account shall be reduced by the amount of water so released which reaches the

Narrows, as determined pursuant to subparagraph (2.1.C) of paragraph (2.1) of this section (2). The amount of water so released which does not reach the Narrows shall be deducted from the "above Narrows" account. The "above Narrows" account may have a negative balance as a result of releases of water from the "below Narrows" account. In the event of a spill from Lake Cachuma, any such negative balance shall be adjusted to zero. To the extent a negative balance exists in the "above Narrows" account, all inflow to Lake Cachuma shall be credited to that account. For any month the requests for releases of water in the "below Narrows" account shall not exceed the lesser of (i) the "below Narrows" account at the end of the previous month, or (ii) the algebraic sum of the "below Narrows" account at the end of the previous month plus the "above Narrows" account at the end of the previous month plus 2,000 acre-feet.

"(2.7) As provided in paragraph (1.8) of section (1) above, in the event of a spill from Lake Cachuma, water in the "above Narrows" account shall be deemed to be the first water spilled to the extent dewatered storage is reduced during the month spill occurs. If spills reaching the Narrows are less than the "below Narrows" account credits, additional spill shall be deemed to be water in the "below Narrows" account to the extent dewatered storage below the Narrows is reduced, prorated according to the relationship that spills reaching the Narrows bear to the measured flows at the Narrows during the month spill occurs. Spills reaching the Narrows shall be determined by deducting the decrease in "above Narrows" dewatered storage from the spills measured at the dam. If the spills reaching the Narrows are greater than the "below Narrows" account credits, additional spill shall be deemed to be water in the "below Narrows" account only to the extent dewatered storage below the Narrows is reduced, prorated according to the relationship that the "below Narrows" account credits bear to the measured flows at the Narrows during the month spill occurs.

6. Until further order of the Board, permittee shall make or cause to be made suitable field investigations, measurements, and studies, and shall install and maintain necessary measuring facilities, to determine the amount, timing and rate of releases of water into the natural channel of the Santa Ynez River below Bradbury Dam that are required of permittee in order to fully comply with the provision of Condition No. 5 in this permit, and to accurately measure all flows at the Narrows. Permittee shall provide the necessary measuring devices and shall submit to the Board with the annual progress reports, or at such other times as the Board may require, a report of such investigations, measurements and studies and the results thereof, including but not limited to the following:

"(a) A continuous record of Lake Cachuma water surface elevations.

"(b) A continuous record of precipitation near Bradbury Dam.

"(c) Daily evaporation, wind movement, precipitation, and temperature near Bradbury Dam.

"(d) Daily inflow to Lake Cachuma, including underground flows, by proper computations of tunnel diversions, reservoir releases, spills, and change in storage.

"(e) (Eliminated by Order of September 28, 1961.)

"(f) (Eliminated by Order of September 28, 1961.)

"(g) Continuous records of outflow from Lake Cachuma, including flows through river outlets at Bradbury Dam, inflows and outflows through Tecolote Tunnel, and overflows at Bradbury Dam spillway. Instruments suitable for accurate measurement of small outflows shall be installed.

"(h) Continuing groundwater studies below Bradbury Dam in the Santa Ynez Basin, with monthly observation of representative wells influenced by Santa Ynez River flows at locations shown on USBR Exhibit 1, Attachment G, dated December 1, 1988.

"(i) (Eliminated)

"(j) Semiannual water quality analyses of surface and groundwater downstream from Bradbury Dam at locations as shown on USBR Exhibit 1, Attachment G, dated December 1, 1988.

"(k) (Eliminated)

"(l) (Not used)

"(m) On September 21, 1989, the Board adopted an order modifying Condition 6(m) to read as follows:

Permittee and the Department of Fish and Game (DFG) shall develop and undertake a study plan and annual monitoring program to determine the extent and condition of the riparian vegetation in and along the margins of the Santa Ynez River below Bradbury Dam. Timing, methodology,and specific criteria to measure impacts to riparian vegetation will be part of the plan and program. A plan agreed to by the permittee and DFG shall be submitted to the Chief Division of Water Rights within one year of adoption of this order. This program shall be in place for five years at

which time the permittee and DFG shall report to the Board the feasibility of continuing such a program. An annual written report shall be prepared by permittee and DFG and submitted to the Board. The Board retains jurisdiction to adopt appropriate mitigation measures, in the event adverse impacts are caused to the riparian vegetation by release schedules or procedures contained within this order.

"(n) (Eliminated)

"(o) A record on monthly quantities of dewatered storage downstream from Bradbury Dam and of monthly quantities shown in the "above Narrows" and the "below Narrows" accounts, as described in Condition No. 5 of this permit.

"(p) A record of all daily flows passing the Narrows as provided by the United States Geological Survey.

"Permittee shall make its records of such investigations and measurements available for inspection by the Board and shall allow authorized representatives of the Board, Santa Barbara County Water Agency and member units, the Santa Ynez River Water Conservation District, City of Lompoc, and United States military installation at Vandenberg Air Force Base, reasonable access to its project works and properties for the purpose of gathering information and data.

7. The Board, either upon the request of any party or on its own motion may, and shall, prior to the expiration of a 5-year observation period ending December 31, 1994 hear, review, and make such further and different orders as may be specifically provided for in this order or as may be required concerning proper and adequate releases of water for downstream use, and recharge of groundwater, and concerning the investigations, measurements and studies to be conducted by permittee, until a final determination and order can be made concerning the amounts, timing and rates of releases of water past Bradbury Dam in satisfaction of downstream rights, and the Board retains continuing jurisdiction for such purposes during said 5-year observation period, or for such further time prior to issuance of license as the Board may determine upon notice and hearing to be reasonably necessary for the aforesaid purposes.

All other sections, paragraphs or subparagraphs of the existing order, as previously amended, not specifically amended by this agreement are intended to and shall remain in full force and effect.

APPENDIX C.4

State Board Water Right Order 94-5

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Permits 11308 and 11310 Issued pursuant to Applications 11331 and 11332; the United States Bureau of Reclamation; Permittee	Order:	WR 94-5
	Source:	Santa Ynez River
	County:	Santa Barbara

ORDER CONTINUING RESERVED JURISDICTION
AND ISSUING AMENDED PERMITS

FINDINGS BY THE BOARD:

1. Order paragraph 13 of Decision D-886, adopted February 28, 1958, reserved jurisdiction over Permits 11308 and 11310 issued pursuant to Applications 11331 and 11332. Jurisdiction was reserved for 15 years or for such further time prior to issuance of license as the Board might determine upon notice and hearing to be reasonably necessary to determine the amounts, timing, and rates of release of water past Bradbury Dam (Cachuma Reservoir) required to satisfy downstream rights.

2. Following a Board hearing on January 26, 1973, Board Order WR 73-9 (February 15, 1973) continued the reserved jurisdiction in D-886 over Permits 11308 and 11310 from February 28, 1973 until further order by the Board, such further order to be made not later than October 1, 1973.

3. Board Order WR 73-37 (July 5, 1973) amended Conditions 5, 6, and 7 of the permits. Amended Condition 7 of the permits provided for extending the initial 15-year trial period for refining Cachuma Reservoir operating procedures for an additional 15 years to July 5, 1988.

4. Board Order WR 78-10 (July 5, 1978) amended Condition 5.(1.4) of Permits 11308 and 11310 (as amended by Order WR 73-37), to change the method of measurement of water released from Cachuma Reservoir to satisfy downstream rights.

5. Board Order WR 88-2 (January 21, 1988) extended the date for hearing under Permit Condition 7 until July 1, 1989, and continued the Board's reserved jurisdiction for further order pursuant to Permit Condition 7 until December 31, 1989.

6. Board Order WR 89-18 (September 21, 1989):

   (a) Under Permit Condition 7, extended the date for hearing until July 1, 1994 and extended the reserved jurisdiction until December 31, 1994;

(b) amended condition 6(m) of the permits to extend and modify the riparian vegetation monitoring program in and along the margins of the Santa Ynez River below Bradbury Dam for at least an additional five years; and

(c) directed staff to promptly prepare for and schedule a hearing on the California Sportfishing Protection Alliance (CSPA) complaint as soon as the Board's calendar allowed.

7. A consolidated hearing to consider all outstanding actions within the Santa Ynez River watershed was commenced in July 1990. This hearing was recessed at the end of August 1990 to allow the parties to work together to resolve some of the technical concerns outside of the hearing process.

8. On December 20, 1990, Chairman W. Don Maughan wrote to the parties to explain that before the Board could act on the pending actions:

(a) a cumulative environmental impact report must be prepared;

(b) a determination of the availability of unappropriated water must be made; and

(c) potential mitigation measures for the remnant steelhead fishery and for rare and endangered species and related habitats must be evaluated.

9. Sufficient information to complete the work identified in the December 20, 1990 letter is not available.

10. In 1993, some of the parties entered into two Memoranda of Understanding (MOU) for cooperation in research related to the protection of fish and fish habitat for the portion of the Santa Ynez River below Bradbury Dam. A report regarding this work has been prepared by the Technical Advisory Committee under the MOU's.

11. In 1994, a new Memorandum of Understanding (1994 MOU) was executed which acknowledges that three to five years may be needed to complete data collection and studies for presentation of information on fish and fish habitat for the portion of the Santa Ynez River below Bradbury Dam in order to jointly resolve some of the outstanding issues before the Board. As of the date of this Order, the parties to the 1994 MOU are the California Department of Fish and Game, the United States Fish and Wildlife Service, the Bureau of Reclamation, the Cachuma Conservation Release Board (the members of which are Carpinteria County Water District, the City of Santa Barbara, Goleta Water District, Montecito Water District, and Summerland County Water District), Santa Ynez River Water Conservation District - Improvement District No. 1, Santa Ynez River Water Conservation District, Santa Barbara County Water Agency, and the City of Lompoc.

The 1994 MOU, which will terminate on March 14, 1995, provides for the establishment of a Fish Reserve Account, consisting of an amount of water equivalent to the amount of water stored in the Cachuma Project above elevation 750 feet and any water captured by virtue of any modifications made to the flashboards of Bradbury Dam. Water in the Fish Reserve Account is to be used for the maintenance of fish below Bradbury Dam and to carry out necessary studies provided for in the study plan developed, all as provided in the 1994 MOU. In the event the Fish Reserve Account is insufficient for purposes of the 1994 MOU, the Bureau of Reclamation may make releases, as provided in the 1994 MOU, from the minimum pool of the Cachuma Project, up to an amount that shall not exceed 2,000 acre feet per year without further consultation with the parties to the 1994 MOU (as listed above).

12. The Bureau of Reclamation, the Cachuma Project Authority (CPA) (the members of which are Carpinteria County Water District, the City of Santa Barbara, Goleta Water District, Montecito Water District, Summerland County Water District, and Santa Ynez River Water Conservation District - Improvement District No. 1) (Cachuma Member Units), and the Santa Barbara County Water Agency also have begun work on an Environmental Impact Statement/Environmental Impact Report under NEPA\CEQA for renewal of Cachuma contracts which includes an analysis of the cumulative impacts of the Cachuma Project and measures to offset any impacts on downstream rights and public trust resources. However, this document is not intended to provide sufficient information to completely address all of the tasks identified in the December 20, 1990 letter.

13. The Bureau of Reclamation has requested that the Board's reserved jurisdiction be extended for an additional three years to allow additional hydrologic data to be collected. The City of Santa Barbara, the Cachuma Conservation Release Board, and the Santa Ynez River Water Conservation District - Improvement District #1 have concurred with this request. The Santa Ynez River Water Conservation District has written that it will not object to the extension. The Department of Fish and Game has indicated they would be agreeable to an extension as long as fishery studies are continued. Legal counsel for the City of Lompoc has submitted a letter opposing an extension unless the Bureau of Reclamation agrees to delay the contract renewal process for the Cachuma Project until the reserved jurisdiction matter has been resolved. The CSPA has objected to any postponement and has requested that the Board require immediate releases of water from Bradbury Dam to protect public trust resources. Legal counsel for the Santa Barbara Urban Creeks Council (UCC) has indicated that an extension of the Board's reserved jurisdiction to allow collection of additional data on impacts of the Cachuma Project on downstream water rights and public trust resources is acceptable provided that adequate interim protection for public trust resources are instituted. The UCC believes that all existing and contemplated studies and measures, including the 1994 MOU are inadequate.

14. The Bureau of Reclamation has agreed to include language in any Cachuma Project renewal contract that expressly provides that (i) the maximum quantity of Project water to be made available to the contractor (the Cachuma Member Units) is conditioned on the existing and future terms and conditions of the underlying Cachuma Project water rights permits, and (ii) additional studies requested by Board Staff relating to the impacts of the Cachuma Project will be conducted within the timelines provided in Order paragraph 3 hereof if either Permittee and the Cachuma Member Units have agreed to conduct such studies or such studies have been ordered by the Board to be conducted. The Bureau of Reclamation has stated it's intent to provide a letter to document this agreement by December 1, 1994. In addition, Permittee and the Cachuma Member Units have agreed to provide a quantity of water for downstream releases for fishery purposes as required in Order paragraph 5 hereof.

15. The Cachuma Project Authority and the City of Lompoc have agreed, by a contract dated September 30, 1993, and subsequently extended, "*to negotiate in good faith toward an agreement which addresses and resolves the City's water quantity and water quality concerns associated with the Cachuma Project's impacts, if any, on the Santa Ynez River, in the context of the overall water supply needs of the City and the CPA members.*" Subsequently, the board of directors of CPA elected to discharge CPA's obligations under the contract by and through the Cachuma Members units. As provided in the contract, technical and policy committees have been established, through which the parties continue to negotiate.

NOW, THEREFORE, IT IS ORDERED THAT:

1. The reservation of jurisdiction in Condition 7 of the subject permits, as amended by Orders WR 73-9, WR 73-37, WR 88-2 and WR 89-18, is continued until such time as long-term permit conditions are set to protect downstream water right holders.

2. The hearing required by Condition 7 shall be commenced no later than December 1, 2000. The scope of the hearing shall include consideration of requirements to carry out Condition 4 of both permits, which addresses the continuing authority of the Board, as amended by Order WR 89-18. The Board may order said hearing to commence at an earlier date:

   (i) upon a request by Permittee on the ground that all studies and other work required by paragraph 3 of this Order have been completed,

   (ii) upon a Board determination that all studies and other work required by paragraph 3 of this Order have not been undertaken promptly, pursued with due diligence or completed in a timely fashion, in which event the hearing shall be conducted upon whatever evidence then exists and the Board shall not be required to grant any additional time extensions to complete studies or gather data; or

(iii) upon a determination by the Board that an earlier hearing is required for other reasons.

3. Not later than February 1, 2000, Permittee shall submit to the Board staff:

(a) the final contract renewal EIS/EIR as identified in Finding No. 12;

(b) the reports or data compilations resulting from the MOU's, including any extensions thereof, as identified in Findings No. 10 and 11 hereof;

(c) a report on the riparian vegetation monitoring program in and along the margins of the Santa Ynez River below Bradbury Dam required by amended condition 6(m) of the subject permits as set forth in Finding No. 6(b) hereof;

(d) information developed and conclusions reached, if any, during the negotiations among the Cachuma Member Units and the City of Lompoc according to the process described in Finding No. 15 hereof;

(e) a study report, or compilation of other existing materials, which clearly describes the impacts, or lack thereof, of the Cachuma Project on downstream diverters as compared to conditions which would have existed in the absence of the Cachuma Project; and

(f) any reports or any other study(s) requested by the Board staff and agreed to by the Permittee and the Members Units or ordered by the Board.

Permittee shall submit to the Chief of the Division of Water Rights (Division Chief) by March 31, 1995 an approximate schedule of development for items (a) through (e) above. Permittee shall also submit written reports to the Division Chief regarding the progress of all studies and/or work underway every six (6) months beginning July 1, 1995.

4. Not later than March 1, 2000, the Division Chief shall determine what, if any, additional environmental documentation is required for Board compliance, as lead agency, with the California Environmental Quality Act (CEQA) in connection with the Board's determination if any modification of the subject permits shall be necessary and appropriate to provide for down stream water rights and public trust resources affected by the project. Any such additional environmental documentation shall be prepared by the Permittee and a draft shall be submitted to the Division Chief not later than July 31, 2000. The nature and scope of the draft environmental documentation shall be as agreed to by the Division Chief and Permittee or as ordered by the Board. Board staff shall hold at least one public meeting by March 31, 1995 to assist in determining the proper scope of any additional reports or studies as provided in paragraph 2(f) above and any additional CEQA documentation as required by this paragraph.

5. Commencing January 1, 1995 and continuing until further order of the Board following the hearing required by paragraph 2 of this Order, in order to maintain fish existing below Bradbury Dam and to accommodate the studies required by paragraph 3 of this Order;

(a) Permittee shall make releases from the Cachuma Project according to the terms of the 1994 MOU referenced in Finding No. 11 hereof, including any extension or modification thereof.

(b) If the 1994 MOU is not extended or modified, Permittee shall continue to make releases from the Cachuma Project to maintain fish and to accommodate fishery studies in a manner and in quantities consistent with those releases provided for in the 1994 MOU, or the then most recent extension or modification thereof. Those releases shall be made by Permittee after consultation with the Department of Fish and Game, the U.S. Fish and Wildlife Service, the Cachuma Members Units, the Santa Ynez River Water Conservation District, the City of Lompoc, and the Division Chief. Any modifications of the MOU affecting provisions of this Order shall become effective only upon a 30-day review by the Division Chief provided the Division Chief does not object to the modifications.

(c) The Board may commence the hearing required by paragraph 2 hereof if it receives a justifiable complaint from any interested party concerning releases made by Permittee pursuant to subparagraph 5(b).

(d) Permittee's obligation to continue releases pursuant to subparagraph 5(b) shall cease six months after the date when a complaint is filed with the Board pursuant to subparagraph 5(c) unless (i) the Board, after a hearing on the issue whether releases should continue pending the Board's consideration of and decision on the complaint, and based on the entire record of that hearing, determines that releases in the manner and in quantities provided in subparagraph 5(b) should continue, or (ii) the Cachuma Member Units have agreed to such continuation.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of any order duly and regularly adopted at a meeting of the State Water Resources Control Board held on November 17, 1994.

AYE: John Caffrey
James M. Stubchaer
Marc Del Piero
Mary Jane Forster
John W. Brown

Maureen Marché
Maureen Marché
Administrative Assistant to the Board

APPENDIX C.5

USGS Groundwater Monitoring Program Contract

DIRECTORS:

DIVISION 1
JONATHAN R. MUNDT
Lompoc

DIVISION 2
STEPHEN E. JORDAN
Lompoc

DIVISION 3
JON C. PICCIUOLO, President
Vandenberg Village - Mission Hills

DIVISION 4
ART HIBBITS
Buellton - Lompoc

DIVISION 5
JEFFREY S. NEWTON
Solvang - Santa Ynez

Santa Ynez River
WATER CONSERVATION DISTRICT

P.O. Box 719 - 3669 Sagunto Street, Suite 108
Santa Ynez, California 93460
Telephone: (805) 693-1156

GENERAL MANAGER:
BRUCE A. WALES
SECRETARY:
BRUCE A. WALES
CONSULTANTS:
ERNEST A. CONANT
General Counsel
STETSON ENGINEERS
Engineer

October 10, 2012

Mr. Joe Barget, Manager
Vandenberg Village CSD
3757 Constellation Road
Lompoc, CA 93436

Mr. Mike Riley, Manager
Mission Hills CSD
1550 E. Burton Mesa Blvd.
Lompoc, CA 93436-2100

Mr. Larry Bean, Utilities Director
City of Lompoc
100 Civic Center Plaza
Lompoc, CA 93436

Mr. Matt Naftaly, Agency Manager
Santa Barbara County Water Agency
123 E. Anapamu Street
Santa Barbara, CA 93101

Re: USGS Lompoc Groundwater Monitoring Program

Gentlemen:

This District is in receipt of the annual agreement for the subject program for the period July 1, 2013 to September 30, 2013. The contractual amount, which this District will become obligated to pay and which is to be reimbursed by the participants, is $20,100.00. A copy of the USGS letter and contract is enclosed for your files.

The contribution from each participant is as follows:

Santa Barbara County Water Agency	20.41%	$4,102
City of Lompoc	55.71%	11,198
Vandenberg Village CSD	17.51%	3,520
Mission Hills CSD	6.37%	1,280
	100.00%	$20,100

The $20,100 cost represents no change over last year.

As has been done in the past, the District will invoice participants upon receipt of a bill from the USGS. Payment will be due on or before September 1, 2013. (For entities starting the Fiscal Year on July 1, this is a commitment for FY 2013-2014.)

Please sign one copy of this letter and return it to this District, at your earliest convenience, as evidence of your continued commitment to this program.

Sincerely,

SANTA YNEZ RIVER WATER
CONSERVATION DISTRICT

Bruce A. Wales/jf

Bruce A. Wales
General Manager

BAW/jrf

Enclosures

Payment will be made by the below-designated participant upon receipt of a billing prior to September 1, 2013 in the amount shown above.

Participant: City of Lompoc

By: Larry Bean (Larry Bean)

Title: Utilities Director Date: 10/26/2012

Form 9-1366
(Oct. 2005)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement

Customer #:	6000000821
Agreement #:	13WSCA04400
Project #:	
TIN #:	77-0402118
Fixed Cost Agreement	☑ Yes ☐ No

FOR
WATER RESOURCES INVESTIGATIONS

THIS AGREEMENT is entered into as of the 1st day of July, 2013, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the SANTA YNEZ RIVER WATER CONSERVATION DISTRICT, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for cooperative water resources investigations in the Santa Ynez River Water Conservation District area, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of $0.

(a) $10,100.00 by the party of the first part during the period July 1, 2013 to September 30, 2013

(b) $20,100.00 by the party of the second part during the period July 1, 2013 to September 30, 2013

USGS DUNS IS 1761-38857

(c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Form 9-1366 continued	U.S. Department of the Interior U.S. Geological Survey Joint Funding Agreement	Customer #: Agreement #: Project #: TIN #:	6000000821 13WSCA04400 77-0402118

8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered **annually**. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey
United States
Department of the Interior

USGS Point of Contact

Name: Tammy Seubert
Address: 6000 J Street, Placer Hall

Sacramento, CA 95819-6129

Telephone: (916) 278-3040
Email: tseubert@usgs.gov

Signatures

By Donna Schiller, acting Date 9/28/2012
Name: Eric G. Reichard
Title: Director, USGS California Water Science Center

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

Customer Point of Contact

Name: Bruce A. Wales, General Manager
Address: Santa Ynez River Water Conservation District
Post Office Box 719
Santa Ynez, CA 93460
Telephone: (805) 693-1156
Email:

Signatures

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

78

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
California Water Science Center
6000 J Street, Placer Hall
California State University
Sacramento, California 95819-6129
Phone: (916) 278-3000 Fax: (916) 278-3070
http://water.wr.usgs.gov

September 28, 2012

Mr. Bruce A. Wales, General Manager
Santa Ynez River Water Conservation District
Post Office Box 719
Santa Ynez, California 93460

Dear Mr. Wales:

This letter confirms discussions between our respective staffs concerning the continuation of the cooperative water resources program between the Santa Ynez River Water Conservation District (District) and the U.S. Geological Survey (USGS) for the period July 1, 2013 to September 30, 2013.

It is proposed that local cooperators and USGS measure water levels in 76 monitoring wells (see Enclosure 1). The water-level data would be submitted semi-annually to the USGS for computer storage. USGS personnel will periodically review data-collection techniques of cooperators as part of our quality-assurance program.

Sixteen wells (see Enclosure 2) will be sampled by USGS during August 2013, analyses performed, and the data stored in the USGS database. Concurrent sampling will be performed at 4 additional wells funded in our cooperative program with Santa Barbara County. Annually, the USGS will send a letter and/or call with a status report on the completed work.

It is recommended that cooperators continue to sample 21 wells to monitor ground-water quality (see Enclosure 3), and that the chemical analyses be stored in a computer database located at the offices of the City of Lompoc.

The USGS has made a policy change regarding Federal Matching Funds (FMF) effective October 1, 2012. The accounting of USGS FMF shown in paragraph 2(a) of the attached Joint Funding Agreement (JFA) no longer reflects the portion of USGS funding associated with facilities and science support at the Bureau level. The USGS continues to provide funding for these support services, but, under a new USGS business practice, this USGS funding is no longer included on the JFA. This change in USGS business practice does not change the overall cost of this work, nor does it diminish the total benefits and services that are provided by the USGS. No additional costs are incurred by District as a result of this change in accounting.

RECEIVED OCT 0 5 2012

The proposed program and associated costs are as follows:

Description	District Funds	USGS Funds	Total Funds
Water-quality sampling and data entry	$20,100	$10,100	$30,200
TOTAL	**$20,100**	**$10,100**	**$30,200**

Total cost of the proposed program is $30,200. Cost to the District is $20,100, and subject to the availability of Federal matching funds, the USGS will provide $10,100.

Enclosed are two originals of Joint Funding Agreement (JFA) 13WSCA04400, signed by our agency, for your approval. If you are in agreement with this proposed program, please return one fully executed JFA to our office. Work performed with funds from this agreement will be conducted on a fixed-price basis. Billing for this agreement will be rendered annually.

The USGS is required to have an agreement in place prior to any work being performed on a project. We request that a fully executed JFA be returned prior to July 1, 2013. If it is not received by July 1, we will be required to suspend operations until an agreement is received.

If you have any questions concerning this program, please contact Matt Scrudato, in our Santa Maria Field Office, at (805) 928-9539. If you have any administrative questions, please contact Tammy Seubert, in our Sacramento Office, at (916) 278-3040.

Sincerely,

Donna Schiffer, acting

Eric G. Reichard
Director, USGS California Water Science Center

Enclosures

cc: Matt Scrudato, USGS CAWSC

Enclosure 1: Water-level monitoring wells to be measured by cooperating agencies.
(updated list 5-27-10 by Matthew Scrudato, USGS)

Well Number	Aquifer/Zone	Current Monitoring Agency	Water-level Measurement Schedule
6N/34W-06C04	Lower	USGS	Semiannual
7N/33W-16G05	Lower	USGS	Semiannual
7N/33W-17M01	Lower	USGS	Semiannual
7N/33W-19D01	Lower	USGS	Semiannual
7N/33W-20G01	Lower	USGS	Semiannual
7N/33W-21G02	Lower	USGS	Semiannual
7N/33W-21N01	Lower	USGS	Semiannual
7N/33W-28D03	Lower	USGS	Semiannual
7N/34W-09H05	Lower	USGS	Semiannual
7N/34W-09H06	Lower	USGS	Semiannual
7N/34W-12E01	Lower	USGS	Semiannual
7N/34W-14F04	Lower	USGS	Semiannual
7N/34W-14L01	Lower	USGS	Semiannual
7N/34W-15D01	Lower	USGS	Semiannual
7N/34W-15D02	Lower	USGS	Semiannual
7N/34W-22L02	Upper/Shallow	USBR	Semiannual
7N/34W-22Q07	Upper/Main	USBR	Monthly
7N/34W-22Q08	Upper/Shallow	USBR	Monthly
7N/34W-24N01	Lower	USGS	Semiannual
7N/34W-26H03	Lower	USGS	Semiannual
7N/34W-26N06	Upper/Main	USBR	Monthly
7N/34W-26N07	Upper/Shallow	USBR	Monthly
7N/34W-26Q05	Lower	USBR	Semiannual
7N/34W-27E04	Upper/Middle	COL	Semiannual
7N/34W-27F07	Upper/Main	COL	Semiannual
7N/34W-27F08	Upper/Main	COL	Semiannual
7N/34W-27G06	Upper/Main	USGS	Semiannual

Enclosure 1 (cont.): Water-level monitoring wells to be measured by cooperating agencies.
(updated list 5-27-10 by Matthew Scrudato, USGS)

Well Number	Aquifer/Zone	Current Monitoring Agency	Water-level Measurement Schedule
7N/34W-27K04	Upper/Shallow	COL	Semiannual
7N/34W-27K05	Upper/Middle	COL	Semiannual
7N34W-27K06	Lower	COL	Semiannual
7N34W-27K07	Upper/Main	COL	Semiannual
7N/34W-27N06	Upper/Middle	COL	Semiannual
7N/34W-27P05	Upper/Main	COL	Semiannual
7N/34W-27P06	Upper/Shallow	COL	Semiannual
7N/34W-27Q02	Upper/Main	COL	Semiannual
7N/34W-28B05	Upper/Shallow	USBR	Monthly
7N/34W-28M01	Upper/Middle	COL	Semiannual
7N/34W-28M02	Upper/Main	COL	Semiannual
7N/34W-28Q01	Upper/Middle	COL	Semiannual
7N/34W-29F01	Upper/Main	COL	Monthly
7N/34W-29F02	Upper/Shallow	COL	Monthly
7N/34W-29H03	Upper/Middle	COL	Monthly
7N/34W-29N06	Upper/Main	USGS	Semiannual
7N/34W-29N07	Lower	USGS	Semiannual
7N/34W-30L10	Upper/Main	USGS	Semiannual
7N/34W-31R02	Upper/Shallow	USGS	Semiannual
7N/34W-33E05	Upper/Shallow	COL	Semiannual
7N/34W-34A04	Upper/Main	COL	Semiannual
7N/34W-34B01	Upper/Main	COL	Semiannual
7N/34W-34F06	Upper/Main	COL	Semiannual
7N/34W-35K09	Upper/Main	USGS	Semiannual
7N/35W-15M01	North of Lompoc Plain *	USGS	Semiannual
7N/35W-17M01	Upper/Main	USGS	Semiannual
7N/35W-17Q06	Upper/Shallow	USGS	Semiannual

Enclosure 1 (cont.): Water-level monitoring wells to be measured by cooperating agencies.
(updated list 5-27-10 by Matthew Scrudato, USGS)

Well Number	Aquifer/Zone	Current Monitoring Agency	Water-level Measurement Schedule
7N/35W-21G02	Upper/Main	USGS	Semiannual
7N/35W-22J01	Upper/Main	USGS	Semiannual
7N/35W-22M01	Upper/Main	USGS	Semiannual
7N/35W-23B02	Upper/Shallow	USGS	Semiannual
7N/35W-23E02	Upper/Main	USGS	Semiannual
7N/35W-23Q02	Upper/Shallow	USGS	Semiannual
7N/35W-23Q03	Upper/Middle	USGS	Semiannual
7N/35W-23Q04	Upper/Main	USGS	Semiannual
7N/35W-24J04	Upper/Main	USGS	Semiannual
7N/35W-24K05	Upper/Main	USGS	Semiannual
7N/35W-25F06	Upper/Shallow	USGS	Semiannual
7N/35W-25F07	Upper/Shallow	USGS	Semiannual
7N/35W-26F04	Upper/Main	USGS	Semiannual
7N/35W-26L01	Upper/Shallow	USGS	Semiannual
7N/35W-26L02	Upper/Middle	USGS	Semiannual
7N/35W-26L04	Lower	USGS	Semiannual
7N/35W-27C01	Upper/Main	USGS	Semiannual
7N/35W-27F01	Upper/Main	USGS	Semiannual
7N/35W-27H01	Upper/Shallow	USGS	Semiannual
7N/35W-27P01	Lower	USGS	Semiannual
7N/35W-30G01	Lompoc Terrace *	USGS	Semiannual
7N/35W-32N01	Lompoc Terrace *	USGS	Annual

Enclosure 1 (cont.): Water-level monitoring wells to be measured by cooperating agencies.
(updated list 5-27-10 by Matthew Scrudato, USGS)

USBR = U.S. Bureau of Reclamation COL = City of Lompoc
USGS = U.S. Geological Survey (for County of Santa Barbara)
SB = County of Santa Barbara
-- = no data or not applicable
* - out of Lompoc Plain aquifer.

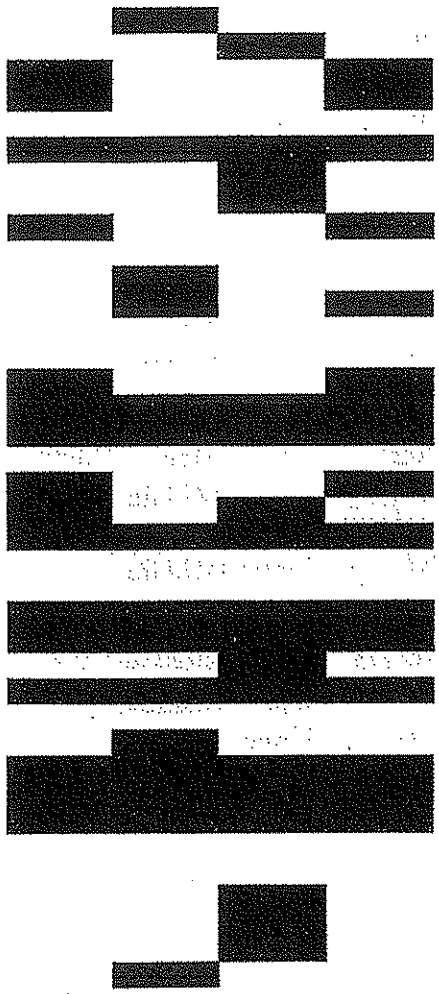
DISCONTINUED WELLS

Well Number	Aquifer/Zone	Current Monitoring Agency	Water-level Measurement Schedule	FY
7N/33W-16G03	Lower	SB	Semiannual	07
7N/34W-15P01	Lower	SB	Semiannual	05
7N/34W-22Q09	Upper/Shallow	USBR	Monthly	09
7N/34W-28B04	Upper/Main	USBR	Monthly	
7N/35W-13N02	Upper/Shallow	SB	Semiannual	07
7N/35W-23Q01	Upper/Shallow	SB/USGS	Semiannual	06
7N/35W-25F05	Upper/Main	SB	Semiannual	07

Enclosure 2: Water-Quality Sampling Plan.

(updated list 8-28-12, Scrudato, USGS)

Site Name	Site Identification Number	Notes	Sample Frequency	|===Water Year Sampled===| 2013 2014 2015 2016
Upper/Shallow				
7N/34W-22Q08	344008120263902		Triennial	
7N/34W-26N07	343920120262002		Triennial	
7N/34W-27K04	343938120264101		Triennial	
7N/34W-28B05	344004120274702		Triennial	
7N/34W-31R2	343828120293201		Annual	
7N/35W-23B02	344048120320201		Triennial	
7N/35W-23E08	344043120322408		Triennial	
7N/35W-23Q02	344009120320402		Triennial	
7N/35W-26L01	343929120321001		Triennial	
7N/35W-22A3	344045120324601	Jordan	Biannual	
Upper/Middle				
7N/34W-27K05	343938120264102		Triennial	
7N/34W-30F04	343948120300301		Annual	
7N/35W-23Q03	344009120320403		Annual	
7N/35W-26L02	343929120321002		Triennial	
7N/35W-23D2	344047120322801	Jordan	Biannual	
7N/35W-26F6	343948120321301	Jordan	Annual	
Upper/Main				
7N/34W-26N06	343920120262001		Annual	
7N/34W-27K07	343938120264002		Annual	
7N/34W-27P05	343914120270301		Triennial	
7N/34W-29N06	343926120293001		Annual	
7N/34W-34A04	343901120262202		Triennial	
7N/35W-17K20	344112120351001		Annual	
7N/35W-23E07	344043120322407		Annual	
7N/35W-23Q04	344008120320901		Annual	
Lower				
7N/34W-27K06	343938120264001	*	Triennial	
7N/34W-29N07	343926120293002		Triennial	
7N/35W-23E05	344043120322405		Triennial	
7N/35W-26L04	343929120321004		Triennial	



* - sample collected for City of Lompoc to analyze.

DISCONTINUED
7N/34W-29L1 (WY06)

Enclosure 3: Water-quality monitoring wells sampled by cooperating agencies. Samples are analyzed for major ions, except where noted.

(updated list 5-27-10 by Matthew Scrudato, USGS)

Well Number	Aquifer/Zone	Current Monitoring Agency	Water-quality Sampling Schedule
7N/34W-14F04	Lower	MHCSD	Annual
7N/34W-15D01	Lower	VVCSD	Annual
7N/34W-27E04	Upper/Middle	COL	Annual
7N/34W-27F07	Upper/Main	COL	Annual
7N/34W-27K04	Upper/Shallow	COL	Annual
7N/34W-27K05	Upper/Middle	COL	Annual
7N/34W-27K06 (2)	Lower	COL	Annual
7N/34W-27K07	Upper/Main	COL	Annual
7N/34W-27N05	Upper/Main	COL	Annual
7N/34W-27N06	Upper/Middle	COL	Annual
7N/34W-27P06	Upper/Shallow	COL	Annual
7N/34W-27Q02	Upper/Main	COL	Annual
7N/34W-28M01	Upper/Middle	COL	Annual
7N/34W-28M02	Upper/Main	COL	Annual
7N/34W-28Q01	Upper/Middle	COL	Annual
7N/34W-29F01 (1)	Upper/Main	COL	Annual
7N/34W-29F02 (1)	Upper/Shallow	COL	Annual
7N/34W-33E05	Upper/Shallow	COL	Annual
7N/34W-34A04	Upper/Main	COL	Annual
7N/34W-34B01	Upper/Main	COL	Annual
7N/34W-34F06	Upper/Main	COL	Annual

COL = City of Lompoc
SB = County of Santa Barbara
USGS = U.S. Geological Survey
MHCSD = Mission Hills Community Services District
VVCSD = Vandenberg Village Community Services District

(1) Sample for major ions and nutrients.

(2) Sample collected for COL to analyze.

APPENDIX C.6

USGS Stream Gauging Program Contract

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
California Water Science Center
6000 J Street, Placer Hall
California State University
Sacramento, California 95819-6129
Phone: (916) 278-3000 Fax: (916) 278-3070
http://water.wr.usgs.gov

October 15, 2012

Mr. Leslie A. Bean, Utilities Director
City of Lompoc
100 Civic Center Plaza
Post Office Box 8001
Lompoc, California 93438-8001

Dear Mr. Bean:

This letter confirms discussions between our respective staffs, concerning the continuation of the cooperative water resources program between the City of Lompoc (City) and the U.S. Geological Survey (USGS) for the period November 1, 2012 to October 31, 2013.

The proposed program for this period and associated costs are as follows:

Station number and name		City Funds	USGS Funds	Total Funds
Streamgaging stations				
11134000	Santa Ynez River at "H" Street near Lompoc			
	Operation and Maintenance	$22,600	$-0-	$22,600
	Additonal weekly measurments (one per month included in operation and maintenance)	6,100		6,100
Miscellaneous measurements				
11134500	Santa Ynez River at "V" Street near Lompoc			
	Seasonal weekly discharge measurements (April-October)	3,100	-0-	3,100
Continuous Water Quality Monitoring				
11126000	Santa Ynez River near Santa Ynez[1]			
	specific conductance, water temperature and dissolved oxygen	5,800	-0-	5,800
	TOTAL	**$37,600**	**$-0-**	**$37,600**

[1] Total cost of continuous water quality monitoring shared between Santa Barbara County, Cuchuma Conservation Release Board, Santa Ynez River Water Conservation District, and the City of Lompoc. The City of Lompoc will be reimbersed the total funds of $2,450 by Santa Ynez River Water Conservation District.

Total cost of the proposed program is $37,600. Federal matching funds are not available from the USGS for this work, so the entire cost will be the responsibility of the City.

Enclosed are two originals of Joint Funding Agreement (JFA) 13WSCA09700, signed by our agency, for your approval. If you are in agreement with this proposed program, please return one fully executed JFA to our office. Work performed with funds from this agreement will be conducted on a fixed-price basis. Billing for this agreement will be rendered quarterly.

The USGS is required to have an agreement in place prior to any work being performed on a project. We request that a fully executed JFA be returned prior to November 1, 2012. If it is not received by November 1, we will be required to suspend operations until an agreement is received.

If you have any questions concerning this program, please contact Matt Scrudato, in our Santa Maria Field Office, at (805) 928-3539. If you have any administrative questions, please contact Tammy Seubert, in our Sacramento Office, at (916) 278-3040.

Sincerely,

Donna Schiffer, acting

Eric G. Reichard
Director, USGS California Water Science Center

Enclosure

cc: Matt Scrudato, USGS CAWSC

Form 9-1366
(Oct. 2005)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement

Customer #:	6000000941
Agreement #:	13WSCA09700
Project #:	
TIN #:	95-6000734
Fixed Cost Agreement	☑ Yes ☐ No

FOR
WATER RESOURCES INVESTIGATIONS

THIS AGREEMENT is entered into as of the 1st day of November, 2012, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the CITY OF LOMPOC, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for cooperative water resources investigations in the City of Lompoc area, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of $0.

by the party of the first part during the period

(a) $0.00 November 1, 2012 **to** October 31, 2013

by the party of the second part during the period

(b) $37,600.00 November 1, 2012 **to** October 31, 2013

USGS DUNS IS 1761-38857

(c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Page 2 of 2

Form 9-1366 continued	U.S. Department of the Interior U.S. Geological Survey Joint Funding Agreement	Customer #: Agreement #: Project #: TIN #:	6000000941 13WSCA09700 95-6000734

8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered **quarterly**. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey
United States
Department of the Interior

USGS Point of Contact

Name: Tammy Seubert
Address: 6000 J Street, Placer Hall
Sacramento, CA 95819-6129
Telephone: (916) 278-3040
Email: tseubert@usgs.gov

Signatures

By Eric G. Reichard Date 10/15/2012
Name: Eric G. Reichard
Title: Director, USGS California Water Science Center

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

CITY OF LOMPOC

Customer Point of Contact

Name: Leslie A. Bean, Utilities Director
Address: 100 Civic Center Plaza
Lompoc, CA 93438
Telephone:
Email:

Signatures

By_____ Date 11-6-12
Name: Leslie A. Bean
Title: Utilities Director

By_____ Date_____
Name:
Title:

By_____ Date_____
Name:
Title:

APPENDIX C.7

USBR January 2013 Water Use Report

Larry Bean

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Region
South-Central California Area Office
1243 N Street
Fresno, CA 93721

RECEIVED
MAR - 7 2013

IN REPLY REFER TO:
SCC-433
WTR-4.10

MAR 0 5 2013

Board of Directors
(See Enclosed List)

Subject: Cachuma Downstream Water Rights Operations – Santa Ynez River Downstream Users Accounting – Cachuma Project, California – Mid-Pacific Region

Dear Board Members:

Enclosed is a copy of the Santa Ynez River Downstream Users Accounting Report for January 2013. As of January 31, 2013, the balances of the Above and Below Narrows Accounts are 15,974 and 10,716 acre-feet, respectively.

If you have any questions regarding the report, please feel free to contact me at 559-487-5117 or at 800-735-2929 for the hearing impaired.

Sincerely,

Nick Zanmovich, P.E.
Chief, Operations Division

Enclosures - 2

SYRDSWR List

cc: (each w/enclosure)

Ms. Janet Gingras
Cachuma Operation and Maintenance Board
3301 Laurel Canyon Road
Santa Barbara, CA 93105-2017

City Administrator
City of Lompoc
100 Civic Center Plaza
Lompoc, CA 93438-8001

Mr. Art Hibbits
1251 East Highway 246
Lompoc, CA 93436

Mr. Jeffrey Newton
P.O. Box 1184
Santa Ynez, CA 93460-1184

Mr. Jon C. Picciuolo
445 Oakhill Terrace
Lompoc, CA 93436

Mr. Steve Jordan
P.O. Box 427
Lompoc, CA 93438-0427

Mr. Matt Scrudato
Santa Maria, USGS Field Headquarters
3130 Skyway Drive, Suite 602
Santa Maria, CA 93455-1803

Mr. Bruce A. Wales
Santa Ynez River Water Conservation
District
P.O. Box 719
Santa Ynez, CA 93460-0719

Mr. Thomas M. Stetson
Stetson Engineers Inc.
2171 East San Francisco Boulevard, Suite K
San Rafael, CA 94901

Mr. Earnest A. Conant
Young, Woolridge, Paulden, Self, Farr &
Conant
1800 30th Street, Fourth Floor
Bakersfield CA, 93301-5298

Utility Director
City of Lompoc
100 Civic Center Plaza
Lompoc, CA 93438-8001

Ms. Rebecca Bjork
City of Santa Barbara
P.O. Box 1990
Santa Barbara, CA 93102-1990

Mr. Gary Kvistad
P.O. Box 720
Santa Barbara, CA 93102-0720

Mr. Joanathan R. Mundt
1620 West Cherry Avenue
Lompoc, CA 93436

Mr. Jose Baer
Rancho Arbolato
Gaviota, CA 93117

Ms. Nancy Crawford
San Lucas Ranch
P.O. Box 338
Santa Ynez, CA 93460-0338

Mr. Chris Dalstrom
Santa Ynez River Water Conservation
District
Improvement District #1
P.O. Box 157
Santa Ynez, CA 93460

C A C H U M A
Santa Ynez River - Downstream Users Accounting
January 2013

SUMMARY

RESERVOIR			
	Computed Inflow		126.4
Releases			361.9
Fish		361.9	
Water rights		0.0	
Leakage		0.0	
Spills			0.0
Valves		0.0	
Spillway		0.0	
Leakage		0.0	
	Total Downstream Releases		361.9
Diversions			1611.7
South Coast		1608.7	
Park (SYRWCD ID #1)		3.0	
SYRWCD ID #1		0.0	
	Total Reservoir Outflows		1973.6
CCWA Inflow		0.0	
Releases Affecting Accounts		0.0	
Project Savings		0.0	
ABOVE NARROWS ACCOUNT (ANA)			
Previous Months ANA			15848.0
ANA Credit		126.4	
Releases from ANA		0.0	
BNA Releases Not Reaching Narrows		0.0	
ANA Dewatered Storage:	Current	16043.0	
	Previous	17061.0	
	Change	-1018.0	
Spills Reducing ANA		0.0	
Current ANA			15974.4
BELOW NARROWS ACCOUNT (BNA)			
Previous Months BNA			10716.0
Measured Flow at Narrows		0.0	
Salsipuedes Creek Contribution		74.0	
Releases from BNA		0.0	
BNA Releases Reaching Narrows		0.0	
Constructive Flow at Narrows		0.0	
Elevation of Indicator well (feet)		57.3	
Percolation from Measured Flow		0.0	
Percolation from Constructive Flow		0.0	
BNA Credit		0.0	
Spills Reaching Narrows		0.0	
BNA Dewatered Storage:	Current	15018.0	
	Previous	14423.0	
	Change	595.0	
Spills Reducing BNA		0.0	
Current BNA			10716.0

Notes: All values are in acre-feet unless otherwise indicated.
Date of Report: 02/26/2013
USING SAN LUCAS CREEK AS FIRST CHECKPOINT
UPSTREAM OPERATIONS ADJUSTMENT ALL NEG OR ZERO

C A C H U M A
Santa Ynez River - Downstream Users Accounting
January 2013

DAILY OPERATIONS

DAY	Live Stream Checkpoints: SAN LUCAS BRIDGE	MISSION BRIDGE	HIGHWAY 101 BRIDGE	SANTA ROSA DAMSITE	ROBINSON BRIDGE	FLORADALE BRIDGE	NARROWS CFS	34W/7N 22L2 ELEV	ABOVE NARROWS CREDIT	ABOVE NARROWS RELEASE	BELOW NARROWS RELEASE
1	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	22.8	0.0	0.0
2	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	23.3	0.0	0.0
3	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-42.0	0.0	0.0
4	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	11.1	0.0	0.0
5	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-33.9	0.0	0.0
6	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	8.1	0.0	0.0
7	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-6.0	0.0	0.0
8	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-7.3	0.0	0.0
9	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	26.4	0.0	0.0
10	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-52.8	0.0	0.0
11	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-26.0	0.0	0.0
12	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-17.3	0.0	0.0
13	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	1.1	0.0	0.0
14	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	1.1	0.0	0.0
15	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	0.9	0.0	0.0
16	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-4.8	0.0	0.0
17	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-6.7	0.0	0.0
18	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	21.9	0.0	0.0
19	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-0.2	0.0	0.0
20	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	31.7	0.0	0.0
21	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-14.1	0.0	0.0
22	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	22.6	0.0	0.0
23	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	7.4	0.0	0.0
24	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	22.6	0.0	0.0
25	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-2.5	0.0	0.0
26	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	77.1	0.0	0.0
27	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	10.8	0.0	0.0
28	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	-4.0	0.0	0.0
29	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	38.8	0.0	0.0
30	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3	-18.3	0.0	0.0
31	0	FLOW	FLOW	FLOW	FLOW	0	0.0	57.3 E	34.7	0.0	0.0
Totals							0.0		126.4	0.0	0.0

Notes: All values are in acre-feet unless otherwise indicated.
A letter following the data means: E = estimated data
A = adjusted data

C A C H U M A
Santa Ynez River - Downstream Users Accounting
January 2013

DAILY RESERVOIR OPERATIONS

Day	Elevation	Storage	Change	CCWA	Precip.	Evap.	Leakage	Diversions			Releases		Spills	
								Park (ID #1)	SYRWCD ID #1	South Coast	Fish	Water Rights	Valve	Spillway
	730.56	134850.8												
1	730.55	134827.0	-24.0	0.0	0.0	5.9	0.0	0.1	0.0	28.9	11.8	0.0	0.0	0.0
2	730.54	134803.3	-23.7	0.0	0.0	6.2	0.0	0.1	0.0	28.9	11.8	0.0	0.0	0.0
3	730.50	134708.5	-94.8	0.0	0.0	6.8	0.0	0.1	0.0	34.1	11.8	0.0	0.0	0.0
4	730.48	134661.1	-47.4	0.0	0.0	5.1	0.0	0.1	0.0	41.5	11.8	0.0	0.0	0.0
5	730.44	134566.2	-94.8	0.0	0.0	8.2	0.0	0.1	0.0	40.8	11.8	0.0	0.0	0.0
6	730.44	134566.2	0.0	0.0	49.4	5.1	0.0	0.1	0.0	40.5	11.8	0.0	0.0	0.0
7	730.43	134542.5	-23.7	0.0	37.5	2.3	0.0	0.1	0.0	41.1	11.7	0.0	0.0	0.0
8	730.40	134471.4	-71.1	0.0	0.0	6.9	0.0	0.1	0.0	45.1	11.7	0.0	0.0	0.0
9	730.38	134424.0	-47.4	0.0	0.0	4.9	0.0	0.1	0.0	57.1	11.7	0.0	0.0	0.0
10	730.33	134305.4	-118.6	0.0	0.0	7.1	0.0	0.1	0.0	46.9	11.7	0.0	0.0	0.0
11	730.32	134281.7	-23.7	0.0	37.5	0.1	0.0	0.1	0.0	23.3	11.7	0.0	0.0	0.0
12	730.29	134210.6	-71.1	0.0	3.9	8.7	0.0	0.1	0.0	37.2	11.7	0.0	0.0	0.0
13	730.27	134163.2	-47.4	0.0	0.0	6.9	0.0	0.1	0.0	29.8	11.7	0.0	0.0	0.0
14	730.23	134068.3	-94.8	0.0	0.0	9.2	0.0	0.1	0.0	74.9	11.7	0.0	0.0	0.0
15	730.19	133973.5	-94.8	0.0	0.0	9.4	0.0	0.1	0.0	74.6	11.7	0.0	0.0	0.0
16	730.16	133902.4	-71.1	0.0	0.0	2.9	0.0	0.1	0.0	51.6	11.7	0.0	0.0	0.0
17	730.13	133831.2	-71.1	0.0	0.0	8.4	0.0	0.1	0.0	44.2	11.7	0.0	0.0	0.0
18	730.10	133760.1	-71.1	0.0	0.0	9.6	0.0	0.1	0.0	71.8	11.5	0.0	0.0	0.0
19	730.05	133641.5	-118.6	0.0	0.0	12.0	0.0	0.1	0.0	94.6	11.6	0.0	0.0	0.0
20	730.01	133546.7	-94.8	0.0	0.0	14.4	0.0	0.1	0.0	100.4	11.6	0.0	0.0	0.0
21	729.97	133452.6	-94.1	0.0	0.0	10.2	0.0	0.1	0.0	58.0	11.7	0.0	0.0	0.0
22	729.93	133358.7	-93.9	0.0	0.0	13.0	0.0	0.1	0.0	91.8	11.6	0.0	0.0	0.0
23	729.89	133264.8	-93.9	0.0	0.0	16.5	0.0	0.1	0.0	73.1	11.6	0.0	0.0	0.0
24	729.90	133288.3	23.5	0.0	70.7	5.4	0.0	0.1	0.0	52.8	11.6	0.0	0.0	0.0
25	729.92	133335.2	46.9	0.0	102.2	2.3	0.0	0.1	0.0	38.7	11.6	0.0	0.0	0.0
26	729.95	133405.7	70.4	0.0	41.3	1.0	0.0	0.1	0.0	35.3	11.6	0.0	0.0	0.0
27	729.93	133358.7	-46.9	0.0	2.0	15.1	0.0	0.1	0.0	32.9	11.6	0.0	0.0	0.0
28	729.90	133288.3	-70.4	0.0	0.0	15.4	0.0	0.1	0.0	39.3	11.6	0.0	0.0	0.0
29	729.88	133241.4	-46.9	0.0	0.0	14.2	0.0	0.1	0.0	59.9	11.6	0.0	0.0	0.0
30	729.84	133147.5	-93.9	0.0	0.0	5.6	0.0	0.1	0.0	58.3	11.6	0.0	0.0	0.0
31	729.82	133100.5	-46.9	0.0	0.0	8.7	0.0	0.1	0.0	61.3	11.6	0.0	0.0	0.0
Totals			-1750.5	0.0	344.5	247.7	0.0	3.0	0.0	1608.7	361.9	0.0	0.0	0.0

Notes: Elevations in feet, all other values are in acre-feet.

C A C H U M A
Santa Ynez River - Downstream Users Accounting
January 2013

SUMMARY OF DAILY RESERVOIR OPERATIONS

Day	Computed Inflow	Combined Releases	Combined Spills	Total Down Stream	Combined Diversions	Upstream Operations Adjustment	Above Narrows Credit	
							Regular Credit	Adjusted Credit
1	22.8	11.8	0.0	11.8	29.0	0.0	22.8	22.8
2	23.3	11.8	0.0	11.8	29.0	0.0	23.3	23.3
3	-42.0	11.8	0.0	11.8	34.2	0.0	-42.0	-42.0
4	11.1	11.8	0.0	11.8	41.6	0.0	11.1	11.1
5	-33.9	11.8	0.0	11.8	40.9	0.0	-33.9	-33.9
6	8.1	11.8	0.0	11.8	40.6	0.0	8.1	8.1
7	-6.0	11.7	0.0	11.7	41.2	0.0	-6.0	-6.0
8	-7.3	11.7	0.0	11.7	45.2	0.0	-7.3	-7.3
9	26.4	11.7	0.0	11.7	57.2	0.0	26.4	26.4
10	-52.8	11.7	0.0	11.7	47.0	0.0	-52.8	-52.8
11	-26.0	11.7	0.0	11.7	23.4	0.0	-26.0	-26.0
12	-17.3	11.7	0.0	11.7	37.3	0.0	-17.3	-17.3
13	1.1	11.7	0.0	11.7	29.9	0.0	1.1	1.1
14	1.1	11.7	0.0	11.7	75.0	0.0	1.1	1.1
15	0.9	11.7	0.0	11.7	74.7	0.0	0.9	0.9
16	-4.8	11.7	0.0	11.7	51.7	0.0	-4.8	-4.8
17	-6.7	11.7	0.0	11.7	44.3	0.0	-6.7	-6.7
18	21.9	11.5	0.0	11.5	71.9	0.0	21.9	21.9
19	-0.2	11.6	0.0	11.6	94.7	0.0	-0.2	-0.2
20	31.7	11.6	0.0	11.6	100.5	0.0	31.7	31.7
21	-14.1	11.7	0.0	11.7	58.1	0.0	-14.1	-14.1
22	22.6	11.6	0.0	11.6	91.9	0.0	22.6	22.6
23	7.4	11.6	0.0	11.6	73.2	0.0	7.4	7.4
24	22.6	11.6	0.0	11.6	52.9	0.0	22.6	22.6
25	-2.5	11.6	0.0	11.6	38.8	0.0	-2.5	-2.5
26	77.1	11.6	0.0	11.6	35.4	0.0	77.1	77.1
27	10.8	11.6	0.0	11.6	33.0	0.0	10.8	10.8
28	-4.0	11.6	0.0	11.6	39.4	0.0	-4.0	-4.0
29	38.8	11.6	0.0	11.6	60.0	0.0	38.8	38.8
30	-18.3	11.6	0.0	11.6	58.4	0.0	-18.3	-18.3
31	34.7	11.6	0.0	11.6	61.4	0.0	34.7	34.7
Totals	126.4	361.9	0.0	361.9	1611.7	0.0	126.4	126.4

Notes: All values are in acre-feet.

DEWATERED STORAGE REPORT

ABOVE NARROWS Ground Water Storage Indicator Wells

Node	Well	Current Elev		Previous Elev		Current DWSTR	DWSTR Change	Previous DWSTR
1	6N/34W-02A06	80.4	EST	75.8	EST	640.	-277.	917.
2	6N/34W-01G02	97.6		97.5	EST			
2	6N/33W-07E03	106.0		107.4				
	Average	101.8		102.4		1293.	86.	1207.
3	6N/33W-06D04	116.6		112.1	EST	1146.	-246.	1392.
4	6N/33W-06K02	132.2	EST	133.1	EST	786.	68.	718.
5	6N/33W-08E02	139.8	EST	140.4	EST	440.	19.	421.
6	6N/33W-08J02	152.8	EST	153.0		785.	14.	771.
7	6N/33W-16B01	163.6		163.4		236.	-20.	256.
8	6N/33W-11M01	187.0	EST	186.7	EST	225.	-8.	233.
9	6N/33W-12L01	203.5		203.1		279.	-21.	300.
10	6N/32W-18C02	217.1		218.1		249.	50.	199.
11	6N/32W-08N04	230.8		230.8		237.	0.	237.
12	6N/32W-17J02	242.4		241.4		342.	-56.	398.
13	6N/32W-16G04	257.1	EST	256.5	EST	29.	-20.	49.
14	6N/32W-09G01	268.0		265.0	EST	506.	-279.	785.
15	6N/32W-13G02	306.3		306.2				
15	6N/32W-11D01	283.8		283.6				
	Average	295.0		294.9		1180.	-36.	1216.
16	6N/31W-17D01	317.9		317.9		2234.	0.	2234.
17	6N/31W-17R01	334.9		333.8		1582.	-163.	1745.
	Node 18 has been combined with node 17							
	Node 19 has been combined with node 20							
20	6N/31W-22F01	373.8		373.6		2431.	-27.	2458.
21	6N/31W-24K02	416.4		416.6		186.	10.	176.
22	6N/30W-29E01	447.1		446.5		467.	-57.	524.
23	6N/30W-21E01	476.8		476.7				
23	6N/30W-20H02	468.6		467.8				
	Average	472.7		472.3		0.	0.	0.
24	6N/30W-22C02	496.1	EST	495.6	EST	446.	-23.	469.
25	6N/30W-24E05	533.8		533.1		324.	-32.	356.

	Current DWSTR	DWSTR Change	Previous DWSTR
Santa Rita sub-basin (nodes 1-13)	6687.	-411.	7098.
Buellton sub-basin (nodes 14-17)	5502.	-478.	5980.
Santa Ynez sub-basin (nodes 20-25)	3854.	-129.	3983.
Basin totals	16043.	-1018.	17061.

BELOW NARROWS Ground Water Storage Indicator Wells

Node	Well	Current Elev		Previous Elev		Current DWSTR	DWSTR Change	Previous DWSTR
A	7N/34W-22M06	59.9		60.1		669.	11.	658.
B	7N/34W-26B04	52.4		59.6		1761.	704.	1057.
C	7N/34W-27F09	47.8		49.9		1796.	163.	1633.
D	7N/34W-26Q05	55.1		55.9		2974.	79.	2895.
E	7N/34W-25F03	52.9		52.3		779.	-6.	785.
F	6N/34W-04G04	56.6	EST	56.4	EST	2606.	-28.	2634.
G	7N/34W-34R01	61.8		61.1		2625.	-90.	2715.
H	7N/34W-35K09	49.1		42.7		1808.	-238.	2046.
	Basin totals					15018.	595.	14423.

Notes:
1. A dewatered storage of zero means that the ground water basin, as defined, is full. In reality, storage exists above the full level, but is not considered in the accounting.
2. Elevations in feet, storages in acre-feet
3. Date of run: 02/26/2013

APPENDIX C.8

CASGEM Participation

Santa Barbara County Public Works Department
Flood Control & Water Agency

December 29, 2010

Ms. Paula Landis, Chief
California Department of Water Resources
P.O. Box 942836
Sacramento, Ca. 94236-0001

Dear Ms. Landis,

Santa Barbara County Water Agency (a Dependent Special District) will assume the role of Monitoring Entity for the Cuyama, San Antonio and Santa Ynez River Groundwater Basins of Santa Barbara County.

Santa Barbara County Water Agency has made groundwater measurements for over 35 years, has professional hydrologists and engineers on staff, and works closely with the United States Geological Survey on methodologies and quality control.

Santa Barbara County Water Agency is assuming the role for the above mentioned Basins under Water Code Part 2.75 (commencing with Section 10750) [Section 10927(e)].

Sincerely,

Matt Naftaly
Water Agency Manager

Scott D. McGolpin
Public Works Director

123 East Anapamu Street, Santa Barbara, California 93101
PH: 805 568-3440 FAX: 805 568-3434 www.countyofsb.org/pwd/water

Thomas D. Fayram
Deputy Public Works Director

APPENDIX D

Recommended Procedures for Groundwater Level Monitoring

APPENDIX D. RECOMMENDED PROCEDURES FOR GROUNDWATER LEVEL MONITORING

Water levels in monitoring wells should be measured to the nearest 0.01-foot on a semiannual basis, at minimum, to allow resolution of minimum and maximum groundwater elevations each year. The measurements should be made in the spring and the fall of each year, preferably in the March-April and September-October time frames, when groundwater levels are their maximum and minimum values, respectively. Each measurement event should be conducted in as short a time period as possible to minimize the effects of time varying groundwater elevations. If possible, monitoring should be conducted in wells specifically designed for monitoring, or inactive wells. If active wells are used, water level measurements should be taken after the well pump has been turned off and water levels have recovered for a minimum of 48 hours.

Water level measurements should be made from a reference point established for each monitoring well. All reference point elevations should be surveyed to the nearest 0.01-foot and referenced to the North American Vertical Datum of 1988 (NAVD88), or similar datum. All horizontal coordinates should be referenced to California State Coordinate System. If the reference point is not level with the ground surface, the distance to ground surface should be measured to the nearest 0.01-foot and noted.

Water level measurements logs should be used to record level measurements. At minimum, the logs should include:

- Date and time of measurement
- Reference point
- Depth to water
- If pumping is known to have occurred at, or near, the well in the last 48 hours

APPENDIX E

Recommended Procedures for Groundwater Sampling

APPENDIX E. RECOMMENDED PROCEDURES FOR GROUNDWATER SAMPLING

All sampling equipment should be decontaminated prior to sample collection and all field test equipment should be calibrated according to the manufacturer's specifications. Methods for cleaning equipment depend on a variety of factors including parameters being tested, purpose of the investigation, type and make of equipment, and regulatory guidelines that apply to the project.

Prior to any disruption of the water column, the depth to water should be measured to the nearest 0.01 foot using an electronic sounder, the total depth of the well should be measured with a weighted sounding tape, and the well bore volume and the required purge volumes should be calculated.

WELL PURGING PROCEDURES

The well should be pumped using a Grundfos Redi-Flo2® (or equivalent) submersible sampling pump, and the physical parameters (pH, specific conductance and temperature) of the purge water should be measured and recorded along with the date and time of measurement. Pumping should continue until physical parameters are stable or three to five cased well volumes have been purged. Stabilization should be defined as agreement between the last two sets of readings within plus or minus 0.1 pH units, plus or minus 1.0º C, and plus or minus 10 percent of full scale reading for specific conductivity. If these parameters have not stabilized during the removal of three cased well volumes, then a maximum of five well volumes should be removed. The purging and sampling should be documented using a well purging and sampling form.

WATER QUALITY PROCEDURES

Water quality sampling should be conducted on a semiannual basis. The water quality sampling should be conducted concurrent with the spring and fall groundwater level monitoring events to evaluate seasonal changes in water quality. At least one field duplicate should be collected per sample event.

The initial groundwater sampling of new monitoring wells should be performed at least 48 hours after well development.

Sample Collection

The necessary sample containers and preservatives must be obtained and labeled before the sampling event. Containers and preservatives are normally provided by the laboratory responsible for the analyses. Container labels should include the following information:

- Date and time
- Sample ID
- Parameter being tested
- Method to be used

- Preservative
- Name of the person collecting the samples
- Project number

Groundwater samples should be collected using dedicated disposable polyethylene bailers with monofilament cord or a Grundfos Redi-Flo2® (or equivalent) submersible sampling pump with dedicated disposable Teflon® tubing. Samples should be transferred directly into the appropriate container as specifically prepared by the laboratory for each type of analysis. The samples should be placed on ice and transported under chain-of-custody to a California-certified laboratory.

Additional samples should be collected for quality assurance quality control (QA/QC) of the field sampling procedures. The type and frequency of QA/QC sampling should be specified within the specific project documentation. QA/QC samples can either be collected in the field or conducted within the laboratory. Some examples of QA/QC samples include field blanks, blind duplicates, and matrix spikes.

Laboratory Analyses and Parameters

Laboratory analyses should be conducted for, at minimum, general minerals, metals, total dissolved solids (TDS), nitrate as nitrogen, electrical conductance, and pH. Table E-1 lists the analytical method, practical quantitation limit, sample containers, preservatives, and holding time for each parameter.

Field Records

Accurate field records must be maintained in order to best document groundwater sampling activities. These field records include sample container identification labels, copies of the chain-of-custody, and any information or comments collected in the field.

Field records should include, at minimum:

- Date and time
- Sample location
- Project name or identification
- Well condition and any comments regarding disrepair, missing parts, etc.
- Depth to water, prior to sampling
- Depth to bottom of the well
- Well volume
- Purging method
- Purged volume
- Sample collection method
- Sample description
- Field meter data
- Water quality measurements
- General comments

Table E-1. Analytical Methods for Groundwater Monitoring Well Samples

Parameter	Analytical Method	Practical Quantitation Limit	Sample Container/Preservatives	Holding Times
TDS	EPA 160.1	10 mg/l	500 milliliter (ml) polyethylene, cool[(a)]	7 days
Nitrate as nitrogen	EPA 300.0	0.5 mg/l	500 ml, polyethylene cool[(a)]	2 days
Electrical conductance	EPA 120.1	10 µmhos/cm	500 ml, polyethylene cool[(a)]	28 days
pH	EPA 150.1	0.01 SU	500 ml, polyethylene cool[(a)]	1 day
Aluminum	EPA 6020/200.7	50 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Antimony	EPA 6020/200.8	6.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Arsenic	EPA 6020/200.8	2.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Barium	EPA 6020/200.7	100 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Beryllium	EPA 6020/200.8	1.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Boron	EPA 200.7	100 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Cadmium	EPA 1638/200.8	1.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Chromium	EPA 6020/200.7	10 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Copper	EPA 6020/200.7	50 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Cyanide	EPA 9012A	100 µg/l	500-ml polyethylene, NaOH, pH < 14	14 days
Iron	EPA 6020/200.7	100 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Lead	EPA 6020/200.8	5.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Manganese	EPA 6020/200.7	10 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Mercury	EPA245.2	1.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Nickel	EPA 6020/200.8	10 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Selenium	EPA 6020/200.8	5.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Silver	EPA 6020/200.7	10 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Thallium	EPA 6020/200.8	1.0 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Zinc	EPA 6020/200.7	50 µg/l	1-liter polyethylene, HNO_3, pH < 2	6 months
Alkalinity (total) as $CaCO_3$	EPA 310.1	1.0 mg/l	1-liter polyethylene	14 days
Bicarbonate Alkalinity as $CaCO_3$	EPA 310.1	1.0 mg/l	1-liter polyethylene	14 days
Carbonate Alkalinity as $CaCO_3$	EPA 310.1	1.0 mg/l	1-liter polyethylene	14 days
Hydroxide Alkalinity as $CaCO_3$	EPA 310.1	1.0 mg/l	1-liter polyethylene	14 days
Calcium	EPA 200.7	1.0 mg/l	1-liter polyethylene	6 months
Chloride	EPA 300	0.25 mg/l	1-liter polyethylene	28 days
Fluoride	EPA 300	0.1 mg/l	1-liter polyethylene	28 days
Foaming Agents (MBAS)	EPA 425.1	0.5 mg/l	1-liter polyethylene	2 days
Hardness (Total) AS $CACO_3$	EPA 200.7	1.0 mg/l	1-liter polyethylene	6 months
Magnesium	EPA 200.7	1.0 mg/l	1-liter polyethylene	6 months
Potassium	EPA 200.7	1.0 mg/l	1-liter polyethylene	6 months
Sodium	EPA 200.7	1.0 mg/l	1-liter polyethylene	6 months
Sulfate	EPA 300	0.5 mg/l	1-liter polyethylene	28 days
Color	EPA 140.1	NA[(b)]	1-liter polyethylene	2 days
Odor Threshold @ 60 C	EPA 110.2	NA[(b)]	1-liter glass	1 day
Turbidity	EPA 180.1	0.5 NTU	1-liter glass	2 days

[(a)] A single 500 ml polyethylene bottle will provide sufficient volume for TDS, nitrate, electrical conductance and pH analyses.

[(b)] Not Applicable

APPENDIX F

Recommended Groundwater Quality Assurance/
Quality Control Plan

APPENDIX F. RECOMMENDED GROUNDWATER QUALITY ASSURANCE/QUALITY CONTROL PLAN

STANDARD OPERATING PROCEDURES

Standard operating procedures (SOPs) are necessary to establish a uniform methodology for the collection of groundwater samples and information. SOPs reduce the variability in the procedures used to collect groundwater samples and measure groundwater elevations.

STAFF QUALIFICATIONS

Staff selected to conduct groundwater level monitoring and groundwater quality sampling should be trained to follow the conditions set in this appendix. If needed, they should be trained to conduct any sampling event that requires different procedures. Staff training should be updated with the addition of any new detailed SOPs.

GROUNDWATER LEVEL MEASUREMENTS

Groundwater levels should be measured on wells that are either inactive or have been turned off for at least 48 hours. Pumping water levels should be measured for wells that have been pumping for at least 24 hours. Static water level measures should be conducted on wells that have been turned off for at least 2 hours. For static water level measurements, the data and time of both the well shutoff and water level measurement should be recorded for each well.

Any groundwater level measurements that appear questionable due to some outside factor such as field conditions or equipment behavior should be recorded. Water level measurements should be compared to groundwater level trends for the region. Any measurements that appear to be out of reasonable bounds should be recorded. If necessary, the equipment should be recalibrated and additional measurements should be taken.

All water quality measurements should be formatted to enable uploading to the California Statewide Groundwater Elevation Monitoring (CASGEM) database, if required.

GROUNDWATER QUALITY SAMPLING

Depth to water should be measured prior to all purging and water sampling events.

Sampling equipment and field meters should be standardized to get comparable data. Field equipment should be routinely calibrated to the manufacturer's specifications.

Purging

Applying a standard, consistent procedure for purging is important for obtaining comparable data. For a reliable purging event, wells should be pumped five times the volume of the well before being checked for parameter stabilization. Some of the main parameters to check for stabilization include specific conductance (EC), pH, and temperature.

Sample Containers and Shipping

All sample containers and preservatives must be either provided by the laboratory completing the testing or be lab-approved. The containers, preservatives, samplers, and any tubing used during the sampling event must be such that they will not adversely react to the constituents of interest.

Chain-of-custody forms must be used for all groundwater sampling events. Samples should be held on ice or correctly preserved from the time they are collected until they reach their destination laboratory. All sample deliveries should follow the QA/QC recommendations from the analytical laboratory.

Field Records

Accurate field records should be maintained to document groundwater sampling events. Field record forms should be started prior to sampling.

Field QA/QC Samples

To better document the QA/QC of the field sampling procedures, additional samples should be collected. Field QA/QC samples provide evidence to support the reproducibility and overall quality of the groundwater samples. The laboratory responsible for the analyses will normally specify the QA/QC sample. A few examples of field QA/QC samples include field blanks, equipment blanks, trip blanks, and blind duplicates. Instructions on the processes required to collect the QA/QC samples will be specified by the analytical laboratory.

QUALITY ASSURANCE/QUALITY CONTROL

QA/QC protocol should be coordinated with the analytical laboratory. The steps in developing the QA/QC protocol include:

1) Define quality control parameters;
2) Target analyte list;
3) List maximum reporting limits and proper limits;
4) Determine spike recovery limits (based laboratories abilities and project data quality objectives);
5) Determine duplicate frequency and maximum relative percent difference; and,
6) Specify adequate numbers of blanks.

After receipt of analytical results from the laboratory, the lab report should be checked to insure that the data quality is reasonable. The following should be checked:

- Completeness and accuracy of data transfer
- Laboratory case narrative and data qualifiers
- Holding times
- Reporting limits

- Blanks (should be checked for contamination)
- Spike recoveries
- Precision of duplicate samples

After checking the quality of the laboratory results, the data usability should be summarized. This includes the percent complete, rejected data, qualified data, and statement of the data usability. Any data that has been qualified as rejected or estimated during the review process should be marked as such before being formatted and exported for use.

DATA COMPILATION AND MANAGEMENT

All collected groundwater data should be compiled and formatted to be entered into the City's data management system. The data management system should be updated at least once annually.

WEST YOST

ASSOCIATES