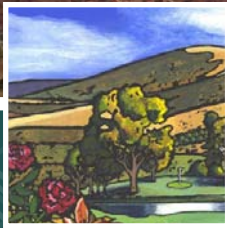




## Waterline Intertie Project



## NARRATIVE REPORT



## Introduction

### The Need

Currently, the Nipomo Community Services District (District) relies on groundwater as the sole source of water for their customers. Groundwater is pumped from the Nipomo Mesa Management Area (NMMA) of the Santa Maria Groundwater Basin, an aquifer that has been the subject of ongoing litigation since 1997.

The California State Superior Court of Santa Clara County approved a Settlement Stipulation on August 3, 2005, containing a requirement that the District and the other water purveyors import a minimum of 2,500 acre-feet of supplemental water to the NMMA each year

in order to reduce groundwater pumping.

In April 2009, the court-appointed NMMA technical group—comprised of hydrologic experts—concluded in the 2008 NMMA Annual Report that **current annual consumptive water use exceeds the average annual recharge so the basin is in a “potentially severe” groundwater shortage situation.** Some groundwater levels are currently as low as the worst historic readings, and another year of drought could depress the groundwater to dangerously low levels—allowing the possibility of sea water intrusion. It is impossible to know if 2010 will be wet or dry, but it is clear from the meteorologic record that several dry years often follow an initial dry year, such as in the late

1980s and the three most recent years. Additionally, consumers use more water in dry years to make up for the lack of rainfall, worsening the draw on the available water supply. Given the long term trend of overuse, each subsequent dry cycle without supplemental water is more dangerous than the last since groundwater levels are likely to be lower.

The Waterline Intertie Project will reduce current pumping so that the average annual recharge will exceed the annual consumptive use. Over time, groundwater levels should rise and the threat of sea water intrusion should decrease. Although future droughts are likely, the infusion of supplemental water aims to provide a storage buffer against dangerously low groundwater levels.

### Alternative Water Sources

The District has investigated multiple sources of supplemental water and, as a result, signed a Memo of Understanding (MOU) with the City of Santa Maria (City) to pursue the Waterline Intertie Project. The 2005 MOU established a basis for purchase and delivery of water from the City to the District. Subsequently, the District commissioned a preliminary design study. Following the Draft Waterline Intertie Project Preliminary Engineering Memorandum (Boyle, November 2006), the District Board of Directors requested an additional study to establish a basis for comparison to other supplemental water alternatives.

AECOM (previously Boyle Engineering) submitted the Evaluation of Supplemental Water Alternatives in June 2007, which investigated the costs and constraints associated with several alternative water supplies. The preferred supplemental water sources are the Santa Maria Waterline Intertie and desalination. Both meet the Board criteria for reliability, quality, and availability. These sources also have an added advantage of lower salts concentrations (such as sulfates, boron, chloride, and total dissolved solids) than the Nipomo groundwater. The potential for increasing salt concentrations in the groundwater through disposal of treated wastewater is currently a concern for the District. A water supply with lower

salts concentration is an important component of the salts reduction program because it will mitigate future impact to the groundwater.

AECOM submitted the revised Waterline Intertie Project Preliminary Engineering Memorandum in May 2008.

#### Potential Alternative Water Sources:

- ▶ Waterline Intertie Project
- ▶ Santa Maria Valley groundwater
- ▶ Desalination of seawater or brackish water
- ▶ Surface water or shallow groundwater from Oso Flaco Lake
- ▶ Water from the Central Coast Water Authority (CCWA) Pipeline
- ▶ Nacimiento Water Project Extension
- ▶ Wastewater recharge and/or reuse



# Waterline Intertie Project Description



## Supply

The Waterline Intertie Project consists of the combined “Phase I” and “Phase II” projects described in the Waterline Intertie Project Environmental Impact Report (Douglas Wood and Associates, April 22, 2009). The project is designed to deliver 3,000 acre-feet per year (AFY) at a maximum rate of 2,000 gallons per minute (gpm).

## Delivery

Water delivery will be phased based on system demands and conditions to be established in the contract currently under negotiation with the City. The water delivery rate is anticipated to be constant over each day and will be adjusted by the District daily. District wells are to be available for use during peak demand months and for emergency water if the Project is out of service.

## Transmission

A water transmission main will be constructed to connect the City of Santa Maria’s water system to the NCS D water system. It will travel underneath the Santa Maria River to a reservoir and pump station on the Nipomo Mesa. From the reservoir, the water will be pumped through new and existing waterlines into the NCS D water distribution system. Control valves will be utilized to maintain safe pressures in the existing system. In order to reduce the potential for future reconstruction underneath the levee and across the Santa Maria River, the River and levee crossing pipelines are designed to handle up to 6,300 AFY at a flow rate of 5,570 gpm. Horizontal directional drilling will be used to install the pipeline underneath the River in order to minimize impacts to the River and sensitive species habitat.

## Quality

The City of Santa Maria uses chloramines as a disinfectant, while the NCS D currently uses chlorine. Chloramination facilities will be installed at four of the NCS D’s existing water production wells to match the disinfection process to that of the City of Santa Maria. This will avoid operational challenges of mixing waters with different disinfectants. A chloramination station will be installed at the pump station/reservoir to maintain adequate levels of disinfectant for the NCS D distribution system.

## Project Components

### Overview from Concept Design Report



The Waterline Intertie Project consists of over 27,000 linear feet (LF) of pipeline, a 0.5 million gallon (MG) storage tank, a 2,000 gallon per minute (gpm) pump station, and chloramination systems at the pump station and at four existing NCS D production wells, as well as the related back-up power, controls, power supply and instrumentation. The District completed the Concept Design in April 2009 (Nipomo Waterline Intertie Project, Concept Design Report, AECOM). The report is available for viewing at the District office and for download on the District's website.

### Transmission Pipeline



The Waterline Intertie design begins at the north end of the City of Santa Maria water distribution system at the intersection of Blosser Road and West Taylor Street with a new 18-inch waterline. The waterline runs north along Blosser Road to Atlantic Place and transitions to a 24-inch waterline to cross underneath the Santa Maria River levee. The 24-inch line will be installed underneath the levee and will cross under the Santa Maria River utilizing horizontal directional drilling technology, ending atop the Nipomo Mesa. From the end of the horizontal directional drill, a 24-inch pipeline will be installed via open trench construction to the reservoir.

### Reservoir



On the Nipomo Mesa, the 24-inch pipeline will connect to a 500,000-gallon, pre-stressed concrete reservoir. The reservoir will be partially buried to assist the delivery of water via City system pressures (without pumping). The primary reason for a partially buried tank is to eliminate the need for a pump station in Santa Maria. However, a secondary benefit to the partially buried tank design is that it will reduce visual impacts. The partially buried tank is designed with the bottom of the tank at approximately 22 feet below grade. Approximately 3 to 6 feet of tank wall will be visible above grade. "Native" colors will be selected for the tank color.

### Booster Pump Station



The booster pump station consists of three vertical turbine pumps and associated controls. The pumps will draw water from the reservoir and deliver it at flows ranging from 600 gallons per minute (gpm) to up to 2,000 gpm. A 24-inch pipeline will be installed to connect the pump station to an existing 12-inch waterline. Water will be pumped along Orchard Road (in the existing 12-inch waterline) and branch into new dedicated pipelines that connect to the main District system in several locations.



## NCS System Pipeline Improvements



Dedicated 12-inch waterlines will be installed to deliver water to the system's back-bone transmission mains in order to protect smaller existing waterlines and users from high pressures. These dedicated mains will be in five areas: 1) along Orchard Road, from Southland Street to Grande Street; 2) along Southland Street, from Orchard Road to Frontage Road; 3) along Frontage Road from Southland Street to Grande Street; 4) from Grande Street, northeast underneath Highway 101 to Darby Lane, continuing on Darby Lane to South Oakglen Avenue; and 5) along South Oakglen Avenue from Darby Lane to Tefft Street. The dedicated mains will connect to the existing system at Orchard Road and Grande Street, Frontage Road and Grande Street, and South Oakglen Avenue and Tefft Street.

## Pressure Reducing Valve Stations



Pressure-reducing-valve (PRV) stations will protect downstream users from high pressures required for the supplemental water delivery. Five PRV stations will be installed around the District's system. One will be placed on Santa Maria Vista Way near the connection to the existing 12-inch waterline, lowering pressure for the Maria Vista Development. Three stations will be placed strategically to create a separate pressure zone in the southwest region of the District's system (on Grande Street, on Orchard Road, and on Oakglen Avenue). The fifth PRV station will be installed on Southland Street between the dedicated main and an existing waterline to allow high flows into the new pressure zone during an emergency (low pressure) situation.

## Chloramination Disinfection Conversion

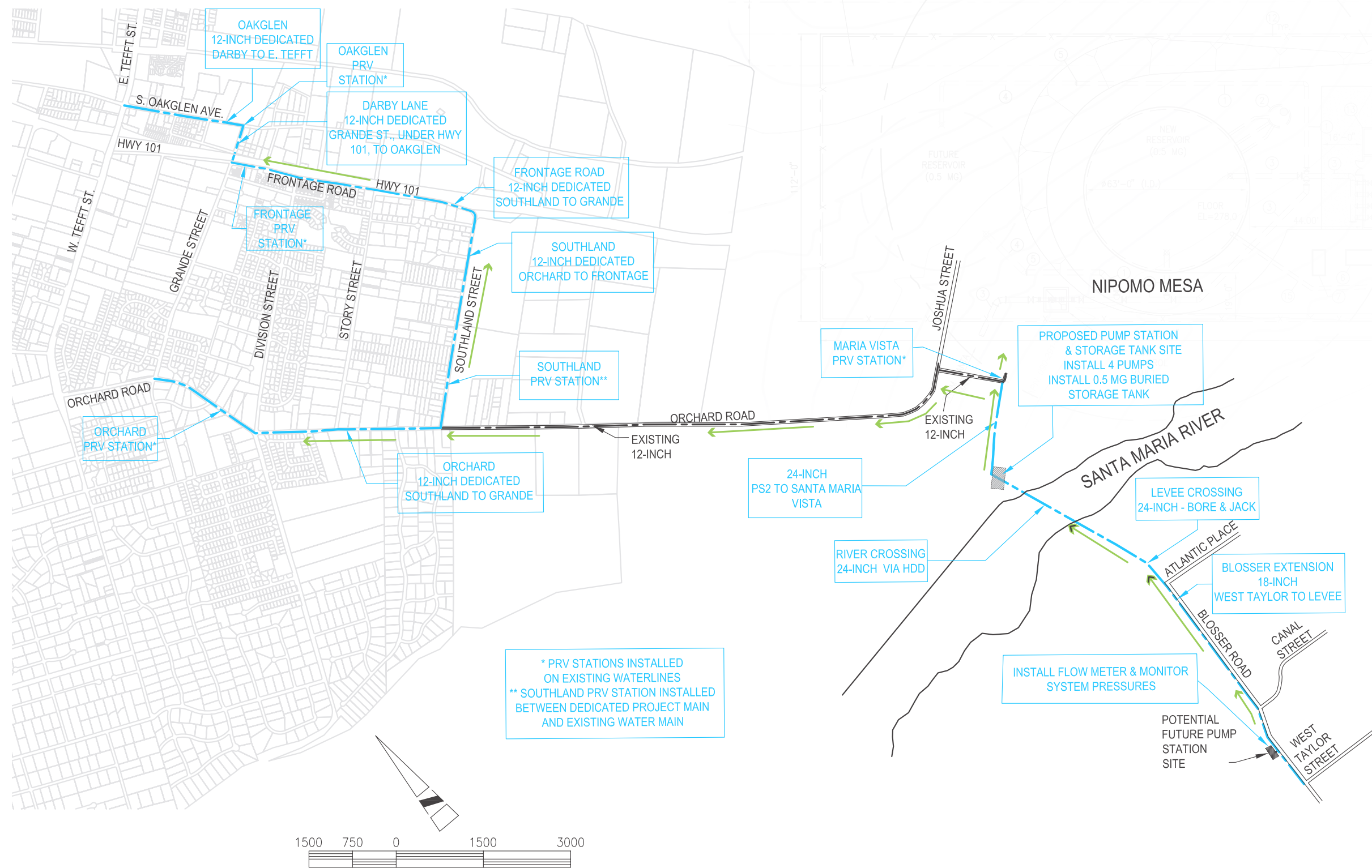


The project includes conversion of four production wells from chlorination to chloramination systems and a booster chloramination system at the pump station. The Preliminary Engineering Memorandum (Boyle/AECOM, May 2008) contains a detailed discussion of the project's disinfection options and water quality issues, and recommends the conversion to match the disinfection process of the supplemental water.

The District will install chloramination equipment at Sundale, Eureka, Via Concha, and Blacklake #4 wells. Production records indicate that these four wells, along with the Bevington or Knollwood Well (if a chloramination system is installed in the future) should produce sufficient water to meet the year 2007 maximum daily demand of 3,152 gpm (4.5 MGD). Other wells could be on standby until such time as they were needed, or they could be operated periodically, using a portable chloramination system.

Chloramine concentration will be increased at the pump station to provide adequate chloramine residual in the NCS distribution system.

# Project Schematic

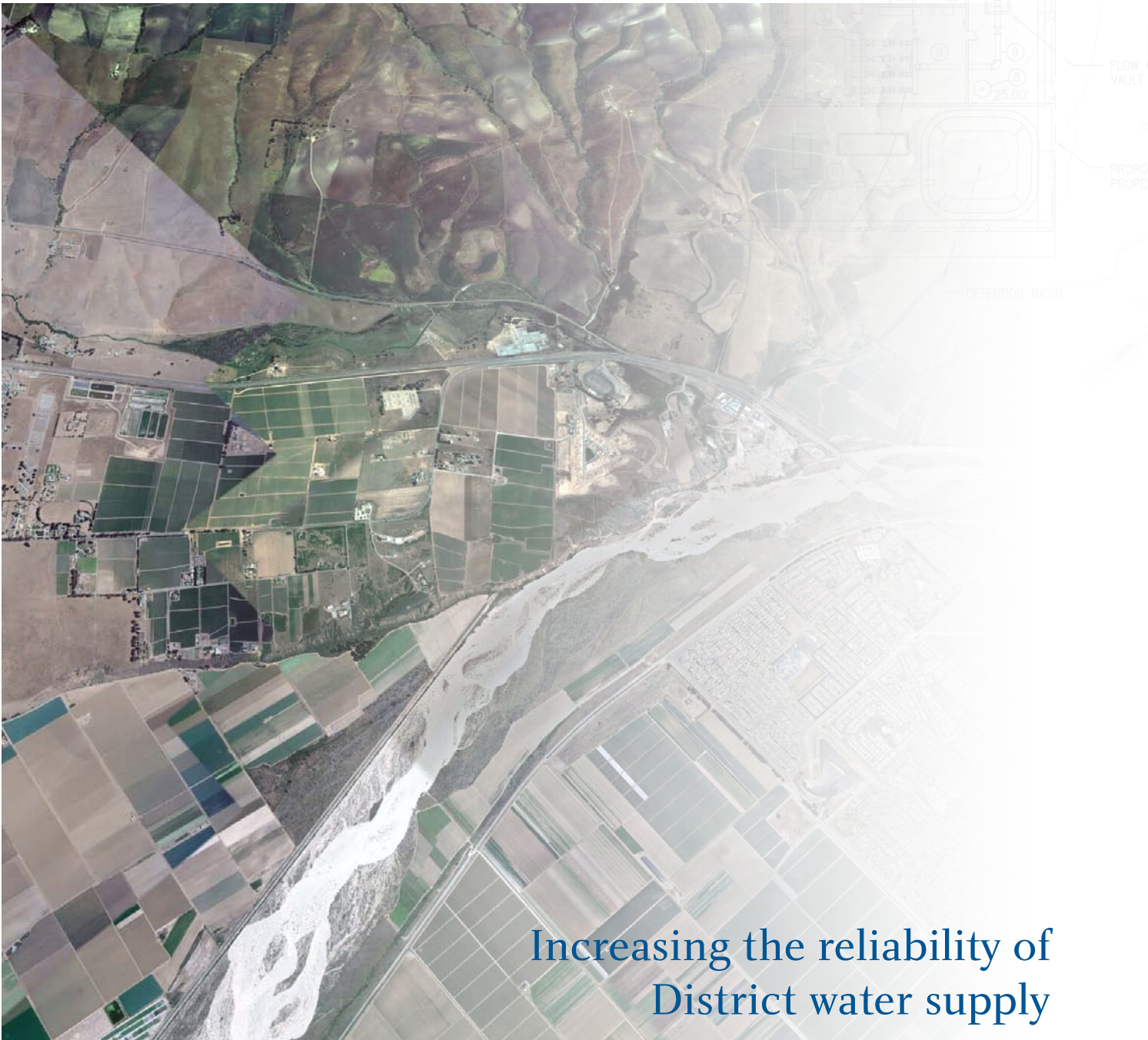




# Project Milestones

## Key Dates

- ▶ **July 16, 2008:** Project Kickoff Meeting
- ▶ **April 30, 2009:** Concept Design Report (30% Design) Completed
- ▶ **Winter 2010:** Construction Plans Completed
- ▶ **Spring 2010:** Construction Contracts Awarded
- ▶ **Spring 2010 - Spring 2011:** Construction
- ▶ **Spring 2011:** Start-up



Increasing the reliability of District water supply

## Opinion of Probable Cost

| Item                                       | Description  | Opinion of Probable Cost (Million dollars) |     |
|--|--|--|-----|
| 1  | Bid Package 1: Santa Maria River Crossing                        | \$4.9                                      |     |
| 2  | Bid Package 2: NCSD Pipeline Improvements                        | \$4.2                                      |     |
| 3  | Bid Package 3: Blosser Road Water Main and Flow Meter            | \$2.1                                      |     |
| 4  | Bid Package 4: Pump Station, Reservoir, & Chloramination Systems | \$4.5                                      |     |
| <b>Construction Subtotal</b>               |  | <b>\$15.6</b>                              |     |
| 5  | Contingency  | \$3.1                                      | (3) |
| <b>Construction Subtotal + Contingency</b> |  | <b>\$18.7</b>                              |     |
| 6  | Property Allowance   | \$0.5                                      | (2) |
| 7  | Preliminary and Design-Phase Engineering                         | \$2.3                                      |     |
| 8  | Office Engineering during Construction                           | \$0.2                                      |     |
| 9  | Estimated Construction Management (1)                            | \$1.5                                      |     |
| 10   | Estimated Other Costs (Assessment, etc)                          | \$0.4                                      | (4) |
| <b>PROJECT TOTAL (Rounded to 1000)</b>     |  | <b>\$23.6</b>                              |     |

**Notes:** Updated April 22, 2009

For details, see Nipomo Waterline Intertie Project Concept Design Report (AECOM, April 2009)

ENR CCI: March 2008 = 8109

- (1) Includes material testing, construction staking, and environmental monitoring.
- (2) Estimate only. Property allowance not included prior to April 2009 estimate.
- (3) Contingency is 20%, which is appropriate for 30% design phase.
- (4) Estimate provided by District staff.



## Costs to Property Owners and Customers

### Overview

The Waterline Intertie Project has both a capital component and an operational component. The Capital Component is the upfront funding necessary for construction and the Operational Component is the ongoing funding to buy the water from the City of Santa Maria and to pay for the labor, energy, and chemicals added by the project.

The District proposes to use an assessment collected along with the property tax bills to pay for the Capital Component and increased User Fees collected on the bi-monthly bill to pay for the Operational Component.

### Capital

As detailed in the opinion of cost table, NCSO estimates the total project cost at \$23.6 million. Of this total, the three other water suppliers on the Mesa have agreed to pay \$6,384,800 (Woodlands Mutual Water Company—\$3,192,400; Golden State Water Company—\$1,596,200; and Rural Water Company—\$1,596,200) leaving \$17,115,200 as District

responsibility. The NCSO Board of Directors has agreed to contribute \$6,000,000 in reserves so that the amount borrowed would decrease from \$17,115,200 to \$11,115,200. Assuming current market conditions and a successful assessment vote, the annual debt service (principal and interest) on an \$11,115,200 municipal bond would be about \$1,090,000 per year.

In addition, the NCSO Board of Directors has agreed to use assessment proceeds to pay for the 69% of the cost of the water purchased from the City of Santa Maria that represents the buy-in to the City's Water System. The Memorandum of Understanding (MOU) between NCSO and the City of Santa Maria estimates a sales price at \$1,250 per acre foot, and NCSO has requested that the City make 2,000 acre-feet per year available as soon as the project is operational.

Although the Final Agreement has yet to be executed between the agencies, it is fair to estimate that the annual cost for purchasing City of Santa Maria Water will be about \$2.5 Million. Assuming that 69% of this \$2.5 Million cost is included in the assessment vote, then the additional assessment

necessary to cover the annual payment would be \$1,724,000.

Adding the \$1,090,000 per year in Debt Service and the \$1,724,000 per year in water payments results in a total annual revenue target of \$2,814,000. Assuming that every parcel inside NCSO pays its fair share of this annual target, then the average single family residential unit would pay an assessment of \$228.74. If the assessment vote passes then the assessments would be collected along with the property taxes starting in FY2010-2011. The portion of the assessment tied to the bond debt service would sunset in 30 years, but the portion of the assessment relating to purchase of the City Water would go on for as long as NCSO uses City Water.

It should be noted that the Board of Directors could have passed these capital costs along to NCSO's Water Customers through the bi-monthly bill, but they felt strongly that the assessment vote was more appropriate than a user fee protest proceeding and that the average existing NCSO customer would pay much less through assessment than through user fees. The good thing about an assessment vote is that every property owner in the District will get a chance to approve or reject the proposed financing in the form of an actual ballot that will be counted after a 45 day window of opportunity. The Board also felt that since the property owners were ultimately responsible for paying for the project, that they should be the ones who get to vote.

**Project Capital Cost: \$ 23,600,000**

**Estimated Water Cost: \$2,500,000/year**

**Estimated per Connection Cost: \$228.74/year**

The NCSD Board has hired the Wallace Group to prepare the Assessment Engineer's Report, including a parcel by parcel listing of the proposed assessment for every parcel in the District. The Wallace Group is expected to publish this Report in Sept 2009.

The Board will then provide notice of the report and the process for making edits to the proposed assessment for any parcel. It is expected that Property Owners will have at least two months (mid-Oct to mid-Nov) to request that their assessment be increased or decreased.

Where the property owners wishes to pay an assessment lower than that necessary to support full build-out of their parcel, the Board will require the recordation of a deed restriction limiting the land use on their parcel to that which they are willing to pay for.

Once all of these changes are made, then the Wallace Group will publish a Final Engineer's Report, which will be the basis of the ballot procedure. Ballots will be mailed to the owner of every parcel, and the property owner will have 45 days to return the ballots.

If more that 50% of the returned ballots support formation of the assessment district, then the Board can proceed to fund the capital portion of the project with assessment revenue. If more than 50% of the property owners vote against the formation of the assessment district, the Board would still have the right to raise the necessary revenues through user fees.

Annual Operations Cost: \$979,000

Estimated per Connection Cost: \$205.20/year

## Operations

Assuming that the property owners support the formation of the assessment district proposed above, then the annual operations cost will include the 31% of the City Water Charge related to operations and NCSD's increased costs for labor, energy and chemicals. If the annual water bill from the City totals \$2.5 Million and the operations component is 31%, then NCSD must secure \$775,000 per year to cover this component.

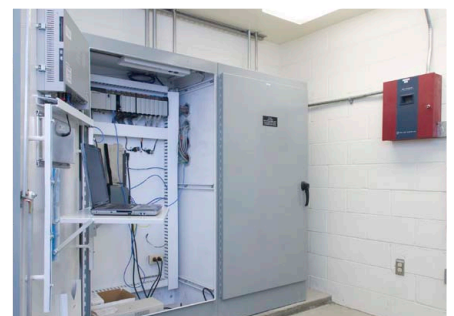
AECOM has estimated the annual cost of operations and maintenance for the project to be approximately \$102 per acre-foot. This cost includes electricity for pumping, controls and lighting, chemicals for the disinfection systems, and additional labor required to operate the new system.

The estimated increase in NCSD's Annual Operating Cost is \$204,000. Adding the \$775,000 for the City and the \$204,000 for NCSD Operations, results in an increased annual cost of \$979,000. Golden State Water Company and the Woodlands Mutual Water Company would pay \$130,700 of this cost, leaving \$848,300 to be paid by NCSD.

Assuming 4,134 customers, then the average NCSD Customer would pay \$205.20 over the course of a year (\$34.20 every two months).

The NCSD Board has hired a rate consultant, Clayton Tuckfield and Associates, to evaluate various rate structures that could be used to raise the \$848,300. The report will also examine the cost to the customers if the project's capital costs are to be covered by User Fees.

Mr. Tuckfield's report is due in August and the Board will hold hearings this fall to pick a rate structure and to fine-tune the cost for an average single family residential unit. After the Board completes its job, staff will mail out a protest notice seeking public comment.





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