

NIPOMO COMMUNITY SERVICES DISTRICT

MONDAY, MARCH 23, 2009

2:00 P. M.

SPECIAL MEETING NOTICE & AGENDA **SUPPLEMENTAL WATER PROJECT DESIGN & CONSTRUCTION** **COMMITTEE**

COMMITTEE MEMBERS

ED EBY, CHAIR
CLIFFORD TROTTER, MEMBER

PRINCIPAL STAFF

BRUCE BUEL, GENERAL MANAGER
LISA BOGNUDA, ASSIST. GENERAL MANAGER
DONNA JOHNSON, BOARD SECRETARY
JON SEITZ, GENERAL COUNSEL
PETER SEVCIK, DISTRICT ENGINEER

MEETING LOCATION

District Board Room, 148 S. Wilson Street, Nipomo, California

1. **CALL TO ORDER, ROLL CALL AND FLAG SALUTE**
ACTION RECOMMENDED: None
2. **REVIEW STATUS OF SUPPLEMENTAL WATER DEVELOPMENT**
ACTION RECOMMENDED: Forward Recommendations to Board
3. **REVIEW HDD GEO-PHYSICAL RESEARCH**
ACTION RECOMMENDED: Forward Recommendation to Board
4. **DISCUSS BASIS OF ASSESSMENT RESEARCH**
ACTION RECOMMENDED: Forward Recommendations to Board
5. **CONSIDER PIPELINE ALIGNMENT TECHNICAL MEMORANDUM**
ACTION RECOMMENDED: Forward Recommendations to Board
6. **REVIEW SCOPE OF WORK FOR USER FEE RATE STUDY**
ACTION RECOMMENDED: Forward Recommendations to Board
7. **SET NEXT COMMITTEE MEETING**
ACTION RECOMMENDED: Set Time/Date for Next Committee Meeting
8. **ADJOURN**

**** End Special Meeting Notice ****

TO: COMMITTEE MEMBERS
FROM: BRUCE BUEL *BBB*
DATE: MARCH 20, 2009



REVIEW SUPPLEMENTAL WATER DEVELOPMENT STATUS

ITEM

Review status of supplemental water development [Forward Recommendations to Board].

BACKGROUND – WATERLINE INTERTIE PROJECT

Mike Nunley from AECOM (Boyle Engineering) is scheduled to present his monthly update at the Committee Meeting (See Attached Summary).

The Wallace Group has submitted a memo summarizing their research on the basis for assessment for funding the construction cost of the WIP (See agenda item 4 in this packet).

AECOM has submitted its draft of the "Pipeline Alignment" Technical Memorandum for Committee Review (See agenda item 5 in this packet).

Staff has developed a draft RFP for 2010-2015 Water Rates which includes an analysis of the rates necessary to fund WIP O&M and an analysis of the Water Rates that would be required to fund WIP Construction Costs if the assessment procedure failed (See Agenda Item 6).

Staff has published the WIP Final EIR. The Board is scheduled to review the FEIR at its April 8, 2009 Board Meeting and to certify the FEIR at its April 22, 2009 Board Meeting.

Staff has initiated the appraisal process for purchase of easements and real property. Staff, District Legal Counsel and Special Counsel is negotiating with the City of Santa Maria to finalize the Water Purchase Agreement. Staff and District Legal Counsel have been negotiating with the Woodlands and GSWC regarding their participation in WIP Funding.

BACKGROUND – DESALINATION

Staff is monitoring the progress of the South County Sanitation District regarding their desalination project. SCSD has yet to set a meeting to discuss their preliminary results.

RECOMMENDATION

Staff recommends that the Committee receive the staff updates and provide feedback and recommendations to the Board.

ATTACHMENT- AECOM MONTHLY SUMMARY

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AECOM
 1194 Pacific Street, Suite 100
 San Luis Obispo CA 93401
 T 805.542.9840 F 805.542.9990 www.aecom.com

Memorandum

Date: March 17, 2009
 To: Bruce Buel, General Manager – Nipomo Community Services District
 From: Michael K. Nunley, PE
 Subject: Waterline Intertie Project – Design Phase Status Report

Distribution: Josh Reynolds, PE
 Cesar Romero, PE
 Peter Sevcik, PE
 Eileen Shields
 Jim Froelicher

The Project Team has completed the following work items this month:

1. A final geotechnical report has been completed.
2. Technical Memorandum 3 (Pipeline Alignment) has been submitted, reviewed by District staff, and revisions have been provided to District staff for inclusion with the copies.
3. Technical Memoranda (TMs) 4 and 5 have been combined into one TM (Pump Station and Reservoir) and submitted to District staff.
4. Technical Memorandum 8 (Backup Power, Controls, and Instrumentation) has been submitted to District staff.
5. AECOM and District staff have met to review preferred turnout locations for providing WIP water to Golden State Water's service area.
6. AECOM has reviewed the Troesh mining permit to identify potential for conflict with the river crossing. As written, the permit limits mining along the Santa Maria River to a depth of 15 feet and our pipeline is at a minimum of 40 feet, allowing 25 feet of cover. The recommended scour depth from previous studies along the River recommended a minimum of 25 feet of cover. We will work with District legal staff, County planning staff, and property negotiators to minimize concern.
7. An HDD workshop has been scheduled with District staff, AECOM staff, peer reviewers and the Construction Management team to discuss the pending conceptual design submittals. This meeting has been scheduled for March 23, 2009.

Schedule

The Project Schedule is attached.

Budget Status

As shown on the attached Design Budget and Invoice Summary, our fee earned matches the amount expended. This indicates we are on budget as of this date.

Yours Sincerely



Michael K. Nunley, PE

Enclosures: Design Budget and Invoice Summary; Project Budget Summary; and Project Schedule

AECOM Water

Project Budget Summary

2/27/2009

Engineering Services for NCSD - SWP Desigr

Nipomo CSD

	Total Budget	Amount Previously Invoiced	Current Invoice Amount	% of Budget Earned to date	% of Work Complete
Task Group 1 - Concept Design Report	\$426,361.00	\$335,649.72	\$66,716.51	94%	94%
Task Group 2 - Permitting	\$30,607.00	\$14,427.57	\$716.85	49%	49%
Task Group 3 - Construction Documents	\$350,691.00	\$21,902.40	\$12,116.60	10%	10%
Task Group 4 - Project Management	\$43,520.00	\$22,906.27	\$1,947.16	57%	57%
Task Group 5 - Assistance During Bids	\$48,942.00	\$0.00	\$0.00	0%	0%
Task Group 6 - Office Engineering During Construction (5 Bid Packages)	\$175,837.00	\$0.00	\$0.00	0%	0%
Total	\$1,075,958.00	\$394,885.96	\$81,497.12	44%	44%

	Amount Previously Invoiced	Current Invoice Amount	Total Permitting Fees to date
Permitting Fees	\$1,572.91	\$0.00	\$1,572.91

Item	Description	Budgeted Amount May 2008 PER	Updated Amount 17-Mar-09
1	Mobilization	\$580,000	\$580,000
2	Blosser Extension (18-in)	\$1,247,000	\$1,247,000
3	Pump Station No. 1 turnout & meter (Blosser Rd)	\$61,000	\$61,000
4	River Crossing (24-in HDD)	\$6,135,000	\$6,135,000
5	24-in Pipeline to Joshua	\$656,000	\$656,000
6	Reservoir (0.5-MG)	\$1,361,000	\$1,361,000
7	Pump Station No. 2	\$603,000	\$603,000
8	Pressure Regulators (200 homes)	\$30,000	--
9	Pressure Reducing Valve Stations	\$18,000	\$72,000
10	Chloramination (Joshua & 5 wellheads)	\$707,000	\$707,000
11	Upgrade Southland to 12-in	\$799,500 (1)	\$780,000 (7)
12	Upgrade Frontage to 12-in	\$1,101,300 (1)	\$880,000 (7)
13	Upgrade Orchard to 12-in	\$509,000	\$1,040,000 (8)
14	Upgrade Division to 10-in between Allegre and Meridian (6)	\$53,000	--
15	Oakglen Avenue 12-in main (5)	--	\$420,000
16	Darby Lane 12-in main (5)	--	\$100,000
17	HWY 101 Bore & Jack (5)	--	\$132,000
18	Isolation Valves (5)	--	\$12,000
	Construction Subtotal	\$13,860,800	\$14,786,000
19	Contingency	\$3,643,000	\$3,696,500 (9)
20	Property Acquisition	-- (4)	--
21	Design-Phase Engineering		
	Original Agreement (July 2008)		\$744,993
	Budget Revision 1 - Pressure Reduction		\$132,798
	Budget Revision 2 - Biological Survey for HDD		\$4,050
	Budget Revision 3 - Modeling for GSW/Woodlands Turnouts		\$8,380
	Budget Revision 4 - Additional Survey Services		\$9,900
22	Office Engineering during construction		\$175,837
23	Construction Management (3)	\$2,428,000 (2)	\$1,507,170 (10)
24	Environmental Mitigation	-- (4)	--
25	Environmental Monitoring	-- (4)	--
26	Permitting Fees	--	\$1,572.91
	PROJECT TOTAL (Rounded to 1000)	\$19,932,000 (4)	\$21,068,000

Notes:

- ENR CCI: March 2008 = 8109
- (1) Costs are from the December 2007 Water and Sewer Master Plan (Cannon).
- (2) Engineering and Construction Management were originally presented as a "lump sum" amount
- (3) Includes material testing and construction staking
- (4) Excludes property acquisition, environmental mitigation, and monitoring
- (5) These work items were added to relieve high pressures on Mesa as an alternative to service pressure regulating valves (See Tech Memo 9). One PRV station at Maria Vista was required initially. Four are recommended for revised project. This was design Budget Revision #1.
- (6) Based on review of record drawings, this pipeline is already a 10-in main
- (7) Initial estimate incorporated Master Plan project costs. Revised estimate includes higher unit costs to reflect paving 1 traffic lane, per County standards
- (8) Updated unit costs include higher costs to reflect paving 1 traffic lane, per County standards
- (9) Contingency was modified to 25% which is more appropriate for concept design phase.
- (10) To be provided by CM team - Has not been revised to reflect additional work for construction management of Oakglen, Darby, and Orchard extensions.

ID	Task Name	Duration	Start	Finish	Predecessors
1	Kickoff meeting	1 day	Wed 7/16/08	Wed 7/16/08	
2	Right of Entry Agreements and Coordination	65 days	Mon 10/13/08	Mon 10/13/08	
3	Permitting and Approvals for Field Work at River	67 days	Thu 7/17/08	Fri 10/17/08	
4	Concept Design Report	234 days	Thu 7/17/08	Tue 6/9/09	
5	101 - Geotechnical Report for HDD Technical Memorandum	2.5 mons	Tue 11/18/08	Mon 1/26/09	
6	102 - Project Bidding Strategy Technical Memorandum	1.15 mons	Mon 10/29/08	Wed 11/19/08	
7	103 - Pipeline Alignment Technical Memorandum	102 days	Mon 10/13/08	Tue 3/3/09	
8	104 - Pump Station Design Technical Memorandum	2.45 mons	Mon 3/16/09	Mon 3/16/09	
9	105 - Reservoir Design Technical Memorandum	2.45 mons	Tue 12/23/08	Mon 3/16/09	
10	106 - Permitting Strategy Technical Memorandum	2.55 mons	Mon 11/2/09	Mon 3/23/09	
11	107 - Chloramination Systems Technical Memorandum	1.4 mons	Mon 10/13/08	Wed 11/19/08	
12	108 - Backup Power, Controls, and Instrumentation Technical Memorandum	1 mon	Tue 2/17/09	Wed 3/18/09	
13	109 - Pressure Reduction Study	1 mon	Thu 7/17/08	Wed 8/13/08	
14	110 - Survey and Base Map (by Wallace Group)	4.7 mons	Tue 9/2/08	Fri 1/9/09	
15	111 - Geotechnical Report (by Fugro)	3 mons	Mon 10/20/08	Fri 1/9/09	
16	Draft Concept Report	1 day	Tue 3/31/09	Tue 3/31/09	
17	113 Review and Finalize Concept Design Report	1 mon	Wed 4/7/09	Tue 4/28/09	
18	114 - Narrative Report	1 mon	Wed 5/13/09	Tue 6/9/09	
19	Construction Plans and Specifications	131 days	Wed 4/29/09	Wed 10/28/09	
20	60% Submittal	6 mons	Wed 6/10/09	Tue 10/13/09	
21	90% Submittal	1 day	Wed 6/10/09	Wed 6/10/09	
22	100% Submittal	1 day	Wed 7/22/09	Wed 7/22/09	
23	Bid Package 1 - HDD	1 day	Wed 10/14/09	Wed 10/14/09	
24	60% Submittal	6 mons	Wed 4/29/09	Tue 10/13/09	
25	90% Submittal	1 day	Wed 7/22/09	Wed 7/22/09	
26	100% Submittal	1 day	Wed 9/2/09	Wed 9/2/09	
27	Bid Package 2 - NCSW System Pipeline Improvements	4.5 mons	Wed 7/8/09	Tue 8/11/09	
28	60% Submittal	1 day	Wed 7/8/09	Wed 7/8/09	
29	90% Submittal	1 day	Wed 8/5/09	Wed 8/5/09	
30	100% Submittal	1 day	Wed 9/2/09	Wed 9/2/09	
31	Bid Package 3 - Blosser Road Water Main and Flow Meter	6 mons	Wed 5/13/09	Tue 10/27/09	
32	60% Submittal	1 day	Wed 8/19/09	Wed 8/19/09	
33	90% Submittal	1 day	Wed 10/14/09	Wed 10/14/09	
34	100% Submittal	1 day	Wed 10/28/09	Wed 10/28/09	
35	Bid Package 4 - Pump Station, Reservoir, and Chloramination Systems	108 days	Fri 4/24/09	Tue 10/13/09	
36	60% Submittal	1 day	Fri 4/24/09	Fri 4/24/09	
37	90% Submittal	1.3 mons	Fri 4/24/09	Fri 2/13/10	
38	100% Submittal	1 day	Fri 2/27/09	Fri 2/27/09	
39	End of EIR Public Review Period	1 day	Fri 3/20/09	Fri 3/20/09	
40	Preparation of Administrative Final EIR/Responses to Comments	1 day	Mon 3/23/09	Mon 3/23/09	
41	Completion of Final EIR	1.5 mons	Mon 3/23/09	Fri 5/1/09	
42	Public Hearing/EIR Certification	30 days	Wed 4/7/09	Tue 5/12/09	
43	Complete and submit permit applications	80 days	Wed 5/13/09	Tue 8/15/09	
44	Coordinate with regulatory agencies	20 days	Wed 9/15/09	Tue 10/13/09	
45	Acquire permits and incorporate in final design plans	67 days	Thu 10/29/09	Fri 1/23/10	
46	Standard Bid-Construct Process for Underground/Storage Work	2.35 mons	Thu 10/29/09	Fri 1/17/10	
47	Solicit Bids	1 mon	Mon 1/4/10	Fri 1/29/10	
48	Award Bids	98 days	Mon 7/6/09	Wed 11/18/09	
49	Turnkey Design-Build Process for HDD Work	2 mons	Mon 7/6/09	Fri 9/25/09	
50	Pre-Qualify Contractors	2.35 mons	Tue 8/18/09	Wed 11/18/09	
51	Solicit Bids	1 mon	Thu 10/22/09	Wed 11/18/09	
52	Award Bids	372 days	Thu 7/30/09	Fri 1/23/10	
53	Construction	5 wks	Thu 7/30/09	Wed 9/2/09	
54	Retain Design Firm to Perform Engineering Services During Construction	12 mons	Mon 1/31/10	Fri 1/23/11	
55	Construct	40 days	Mon 1/31/10	Fri 2/25/11	
56	Startup and Testing	1 mon	Mon 1/31/11	Fri 2/25/11	
57	Startup	1 mon	Mon 1/31/11	Fri 2/25/11	
58	Testing	1 mon	Mon 1/31/11	Fri 2/25/11	

Task
 Progress
 Baseline
 Milestone
 Baseline Milestone
 Summary
 Roll Up Task
 Roll Up Milestone
 Baseline Summary
 Roll Up Baseline
 Roll Up Baseline Milestone
 Roll Up Progress
 Split
 Baseline Split
 External Tasks
 Project Summary
 Group By Summary
 Gantt
 Gantt

TO: COMMITTEE MEMBERS
FROM: BRUCE BUEL *BBB*
DATE: MARCH 20, 2009



REVIEW HDD GEOPHYSICAL RESEARCH

ITEM

Review HDD Geo-Physical Research [Forward Recommendations to Board].

BACKGROUND

AECOM and Jacobs are scheduled to summarize their respective research on the suitability of the soils under the Santa Maria River relative to the feasibility of using the HDD technology.

RECOMMENDATION

Staff recommends that the Committee receive the presentation and ask questions as appropriate.

ATTACHMENT – NONE

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TO: COMMITTEE MEMBERS

FROM: BRUCE BUEL *BB*

DATE: MARCH 20, 2009

AGENDA ITEM

4

MARCH 23, 2009

DISCUSS BASIS OF ASSESSMENT RESEARCH

ITEM

Discuss basis of assessment research [Forward Recommendations to Board].

BACKGROUND

Attached is the Summary Memo from the Wallace Group regarding the basis of assessment for funding the construction cost of the WIP. Kari Wagner from the Wallace Group will present her research and discuss the policy issues set forth in the Summary Memo. Staff has also scheduled a similar presentation to the Board for the Board's April 8, 2009 meeting.

RECOMMENDATION

Staff recommends that the Committee receive the presentation, discuss the Memo and formulate recommendations regarding the basis of assessment.

ATTACHMENT

- MEMO SUMMARIZING BASIS OF ASSESSMENT RESEARCH

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MEMORANDUM

Date: March 18, 2009
To: Bruce Buel
From: Kari Wagner, P.E.
Subject: DRAFT NCSD Assessment District Research



CIVIL ENGINEERING
CONSTRUCTION
MANAGEMENT
LANDSCAPE
ARCHITECTURE
MECHANICAL
ENGINEERING
PLANNING
PUBLIC WORKS
ADMINISTRATION
SURVEYING /
GIS SOLUTIONS
WATER RESOURCES
WALLACE SWANSON
INTERNATIONAL

The Nipomo Community Services District (District) is currently in the process of designing an inter-tie water main between the City of Santa Maria and the District to bring a supplemental water supply for existing and future water demands. This project is estimated to cost the District \$21 million dollars. Wallace Group prepared a Preliminary Assessment Report discussing the formation of the assessment District in November 2008. The Board authorized staff to proceed with the formation of an Assessment District as the method of payment for the project.

As Wallace Group prepared the Preliminary Assessment Report, the database that was used to estimate the benefit units was determined to be unreliable. The information received was from the County's Assessor's database, which has errors in the information that is inputted. At the time of the Preliminary Assessment Report, Wallace Group made some assumptions in order to provide preliminary estimates on a per unit basis for the assessment district.

Following the completion of the Preliminary Assessment Report, Wallace Group discussed the database with District staff and it was recommended to review the entire database to confirm two things: 1) The accuracy of the information inputted. 2) Determine the development potential for each parcel. It was recommended to complete this task prior to the preparation of the engineer's report to allow adequate time for the research.

The District authorized Wallace Group to proceed with the review of the database on January 28, 2009. Wallace Group has been diligently working on reviewing over 5,000 parcels for the past 6 weeks and analyzing the data against water consumption. The following are the assumptions that were made, the references that were used, and various other information that was used to assist us with developing the database. Finally, an analysis was completed on the existing development against water consumption to determine a correlation between water use and parcel size.

DATABASE ANALYSIS

Below describes the means and methods Wallace Group took to determine the existing uses and the development potential for every parcel within the District.

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Reference Sources

1. SLO County Land Use Ordinance Title 22
2. South County Planning Area Standards Chapter 22.112
3. Black Lake Specific Plan
4. County Tax Assessor's database
5. County GIS parcel aerial database and Tidemark permit tracking system
6. Google Earth aerial information

Notes on the Data Evaluation

1. Assessor's land use descriptions were not necessarily reliable. If the descriptions were backed by other information, we accepted it.
2. Assessor's parcels are not necessarily legal parcels – some legal lots contain several Assessor's parcels with different tax bases due to use.
3. Land Uses listed as "allowed" include those allowed with a conditional use permit.
4. Secondary units in a SF zone are on the same meter and subordinate to the primary residence, while in MF zoning, multiple detached units are each on their own meter and are each considered a "primary" unit.
5. Although nearly all RSF lots over 6,000 sf in size are potentially allowed a secondary unit, in reality the configuration of existing development may preclude the ability to construct one without demolition.
6. Although most RSF lots over 12,000 sf in size are potentially allowed by ordinance to subdivide, the configuration of the parcel shape, regardless of existing development, may preclude that ability due to frontage requirements. Where these lots are already developed, many could only be subdivided with demolition of the existing unit.
7. Parcels with incorrect or retired Assessor's numbers were placed on a separate tab along with split-zoned parcels to be analyzed individually.

Assumptions & Thresholds

1. All parcels within District boundary are, or will be, served by community water and wastewater (Sec. 22.22.080).
2. Residential Single-Family lots of less than 6,000 sf do not have Secondary Dwelling Unit capability (Sec. 22.10.130.B.2).
3. All RSF lots over 6,000 sf in size have potential for adding a Secondary Dwelling unit.
4. Black Lake parcels do not have Secondary Unit potential, regardless of size, because REC zoning does not permit them (22.06.030 Table 2-2). We assume that any attempt to increase density would require a Specific Plan Amendment.



5. Residential Multi-Family lots do not have potential for Secondary Dwelling units, regardless of parcel size (22.10.130).
6. Residential Multi-Family lots may have two (or more) units if over 6,000 sf; where if less than 6,000 sf only one unit is allowed (22.10.110.C).
7. Specific density standards for RMF and certain RSF lots were evaluated per South County Area Plan Section 22.112.080.
8. Minimum lot size for an existing, legally created lot to establish a SF residence is 1,750 sf (22.10.110.C).
9. Minimum newly created lot size in AG zoning is 20 acres (22.22.040).
10. Minimum newly created lot size in RR zone is 5 acres (22.22.050).
11. Minimum newly created lot size in RS is 1 acre (22.22.060).
12. Minimum newly created lot size in RSF is 6,000 sf (22.22.070), except where density is dictated by the Area Plan standards
13. Development potential for parcels with split zoning will be evaluated per Section 22.02.020.D, and/or in consult with County staff

Verification Method

Assessor's Information Accepted (AI)

1. Parcels described as "vacant", with no assessed improvement value, and no address, were accepted as vacant.
2. Parcels in RSF, RS, and RR zones, assessed for improvement value, less than 6,000 square feet in size, and not described by the Assessor as having more than one unit, were assumed to have one residential unit as a maximum.
3. Parcels in RSF, RS, and RR zones, assessed for improvement value, more than 6,000 sf in size but less than twice minimum lot size, and not described as having more than one unit, were assumed to have one residential unit, with potential for a secondary unit, and no potential for further subdivision.
4. Residential parcels in single-family zoning described as "Duplex", "SFR w/2nd Living", "SFR w/Sec" etc. were assumed to have legally permitted secondary dwelling units, and were evaluated for further development potential on that basis.
5. We assumed that parcels in zones other than OS that are designated as open space by the assessor (and assessed as such) have a deed restriction limiting any development.

Online Data Verification (OD)

1. Where the Assessor Land Use description was unclear (ie, "Government", "Residual Land Segment", "Misc Imps"), we reviewed the parcel online using County GIS aerial, permit tracking system, and/or Google Earth to verify use and development status.



2. All CR and CS parcels were checked online against aeriels and the County's permit tracking system.
3. Because residential MF density on CR-zoned lots is determined by Conditional Use Permit, the density is discretionary. Secondary units are not allowed on CR-zoned lots.
4. Well parcels located within residential lots, smaller than 1,500 sf in size, are assumed to have no development potential. Most are probably not separate legal lots and were created to assess a well site that may or may not still contain a functioning well.

Field Check (FC):

Field checking was used to verify construction or demolition on parcels where the data suggested that a building permit was in effect, but the aerial did not show it (or vice versa). In some cases, the field review did not clarify the uses on site because it was not possible to tell the use of some structures from the public right-of-way.

County Land Uses

- AG (Agriculture); 3 parcels
- CR (Commercial Retail); 126 parcels
- CS (Commercial Services); 26 parcels
- OP (Office Professional); 34 parcels
- OS (Open Space); 2 parcels
- PF (Public Facilities); 9 parcels
- REC (Recreation); 605 parcels
- RL (Rural Lands); 2 parcels
- RMF (Residential Multi-Family); 526 parcels
- RR (Residential Rural); 277 parcels
- RS (Residential Suburban); 835 parcels
- RSF (Residential Single-Family); 2044 parcels

There are also parcels in several land use categories with split zoning that are grouped separately. These were addressed individually per County requirements.



ENGINEERING ANALYSIS

Wallace Group requested the water use records from the District for the past two years to assist in the benefit unit analysis. This information was linked to the database and sorted based on existing development. The analysis was completed on developed parcels since vacant parcels do not have water use.

There were some anomalies and assumptions in the data that required the data to be either set aside and not used or slightly altered. These anomalies or assumptions that were made are as follows:

- Not all records were provided to Wallace Group. Since water records are tied to an account number, the account number changes if residents change. Therefore, if the account number changed within the past two years, this information was not provided to Wallace Group
- Some records were provided to Wallace Group that still did not contain two full years of data. Any records that did not have two full years of water data were not included in the analysis.
- Some water records were altered slightly to adjust water usage that did not appear to be correct. Example, typical bi-monthly water usage of 120 units. One of the month's readings was 1,137 units. This is most likely a data entry error and was altered to a typical bi-monthly reading.

Once all the viable parcels were either altered or non-viable parcels were removed from the selection, Wallace Group separated the database according to the following categories:

- Residential Single Family (RSF) – All parcels that had one RSF home, regardless of lot size or zoning.
- Residential Single Family – 2 (RSF-2) – All parcels that have two RSF units on a parcel, regardless of lot size or zoning. These second units are either granny units or two RSF houses. These parcels were identified to have permitted second units. Those parcels that may have a granny unit or second dwelling unit on the parcel that is not permitted is not accounted for.
- Residential Single Family >2 (RSF>2) – All parcels that have more than two RSF units on the same parcel. This includes triplex units. This does not include identified residential multi-family parcels such as apartments or condominiums.
- Residential Multi-Family (RMF) – All identified residential multi-family parcels such as apartments and condominiums. These are individual units that typically do not have any land attributed to the parcel. They typically have a central common area for several units, which has its own parcel number.
- Commercial (Com) – All non-residential parcels providing services to the community. This includes office and professional, retail services, industrial, etc.
- Other – There are other parcels, such as public facilities, schools, parks, churches, open space, etc. These parcels will ultimately need to be assessed on a case by case basis and therefore, were not analyzed at this time. Once a method of assessment is identified, these parcels will be re-evaluated to determine their proper assessment.



Water Use Analysis Results

Over 2,700 parcels were evaluated ranging in size from 0.10 acres to 18.20 acres. When the water usage for all viable parcels is plotted against parcel size, the amount of water used by any one parcel of the same size was vastly different. For example: A parcel of 0.10 acres used between 23 gpd on the low end and 1,080 gpd on the high end. The delta between high and low got even greater for larger parcels. For the 1.00 acre parcels, on the low end, parcels used only 25 gpd. On the other hand, there were parcels that used up to almost 3,800 gpd. Exhibit 1 depicts the water usage for all viable RSF parcels against the parcel size. For clarity, Exhibit 1 only shows parcels up to 10 acres. There are few parcels greater than 10 acres and these parcels all used less water than any 10 acre parcels. This analysis does not provide any concrete method for assessment, except that it can be determined that the larger parcels have the "potential" for significantly more water use.

The next step in the analysis used the law of averages to determine how much water parcels of the same size were using. The parcel sizes were rounded to the nearest 0.10 of an acre and grouped together. The water use was averaged for both 2007 and 2008 and plotted on Exhibit 2. The parcels were graphed for every 0.10 acre up to 1.0 acre. Parcels between 1.10 and 2.00 acres were grouped together and parcels greater than 2.00 acres were grouped together. This grouping method gave a large enough sample size that reduces the impacts from those few parcels that used small or large quantities of water and skewed the results.

This analysis provided interesting results. The average water use consistently increased as parcel size increased excluding those parcels greater than 1.0 acres. Parcels greater than 1.0 acre used approximately the same amount of water or less water than 1.0 acre parcels. The average consumption for 2007 and 2008 were similar for each grouping, except 0.70 acres. There was a difference of 110 gpm between 2007 water consumption and 2008 water consumption. Another observation is that except for 0.70 acres and parcels greater than 1.0 acre, water consumption was lower in 2008 than in 2007. This could be a result of water conservation efforts that are being made by the District.

Although the water usage continuously goes up, there are three obvious breaks in the water consumption.

- Group 1: Includes parcel sizes of 0.10, 0.20, and 0.30 acres. These parcels used between 370 and 480 gpd.
- Group 2: Includes parcel size of 0.40, 0.50, and 0.60 acres. These parcels used between 680 and 740 gpd.
- Group 3: Includes parcel sizes 0.7 acres and greater. These parcels used between 760 and 950 gpd.

Once this was established, Wallace Group then broke down the other remaining categories to see how their water usage compared to the RSF. Their water usage was again broken into the same 0.10 acre parcel groupings. The law of averages is more skewed for this analysis since the quantity of the parcels was not nearly as high as they are for RSF. In some instances, there were only one or two parcels that fell into certain groupings. Exhibit 3 provides the analysis of the various



categories versus parcel size for 2007 and 2008. Exhibit 4 provides the same information as Exhibit 3, except years 2007 and 2008 are averaged to simplify the exhibit.

The following is an analysis for each category:

- **RSF-2:** There were only 32 parcels analyzed for this category. If parcel size was not considered, parcels with two RSF units used between 135 and 3,600 gpd. Again, this range is too great to extract any useful information from it. The largest groupings were for 0.20, 1.00, 1.10 to 2.00, and greater than 2.00 acre parcels. These groupings had five or more parcels that provided a better average water consumption. For parcels 0.2 and 1.10 to 2.00 acres, the water consumption for RSF and RSF-2 were identical. For parcels greater than 2.00 acres, the water consumption for RSF-2 was higher than RSF parcels. For 1.00 acre parcels, the water consumption for RSF-2 was significantly higher than the RSF parcels.
- **RSF>2:** There are only 14 parcels that are RSF with more than 2 parcels on the lot. Their water consumption ranged between 443 and 2,101 gpd. On the smaller lots (under 0.50 acre), the water use was higher than the RSF parcels. For parcels between 0.50 and 1.00 acres, the water use was the same or less than the RSF parcels. For parcels between 1.10 and 2.00 acres, the water consumption was higher. For parcels greater than 2.00 acres, the water consumption was approximately the same as RSF.
- **RMF:** The RMF lots are parcels that really don't have any land attributed to the parcel. Therefore, these parcels were compared to parcels with 0.10 acres. There were 206 RMF parcels analyzed. The RMF parcels used approximately 200 gpd. This is 170 gpd less than 0.10 acre RSF parcels.
- **Commercial:** There were 47 commercial parcels analyzed. Again, the water consumption was vastly different, 18 gpd versus 8,600 gpd. There was one anomaly with commercial that was dependent on use of the parcel. There are several fairly large commercial parcels that had storage uses and therefore, used little water as compared to other parcels of the same size. These uses should be considered as a separate condition than typical commercial uses since parcels with storage units will most likely not convert their use. For the most part, parcels 0.90 acre and below use approximately the same quantity of water as their corresponding RSF parcel size. Parcels 1.00 acre and parcels greater than 2.0 acres used significantly more water than their corresponding RSF parcels. Parcels between 1.10 and 2.00 acres used about the same as RSF parcels. However, if the parcels with storage units are taken out of the average, then the water consumption for commercial parcels becomes significantly higher than RSF parcels.

Conclusions and Recommendations

The data that is extracted from this analysis can be manipulated in many ways than were analyzed for this report at this time. Since the number of parcels in each category is not the same, the potential for discrepancies is higher. Again, not all parcels were included in the analysis and therefore, the entire District is not represented. With this knowledge, Table 1 provides a summary of recommendations for proceeding with the basis of assessment.



Table 1. Recommendations

Group	Zoning	Parcel Sizes Included	Recommendations
1	RSF	0.10, 0.20, 0.30	Basis of Assessment, 1.0 Equivalent Benefit Unit
2	RSF	0.40, 0.50, 0.60	1.60 benefit units
3	RSF	0.70 & Greater	2.00 benefit units
4	RSF-2		Recommendation to be determined
5	RSF>2		Recommendation to be determined
6	RMF	<0.1	0.70 benefit units
7	Com	0.10, 0.20, 0.30	1.0 benefit units
8	Com	0.40, 0.50, 0.60	1.60 benefit units
9	Com	0.70 & Greater	Recommendation to be determined
10	Com	Storage Units	0.5 benefit units

There will ultimately be more groups as other areas are evaluated on a case by case basis.

Wallace Group is providing this information as a draft for District Staff to evaluate and discuss. Wallace Group will continue to work with District Staff to provide additional analysis of the information as questions arise.

Exhibit 1
Residential Single Family

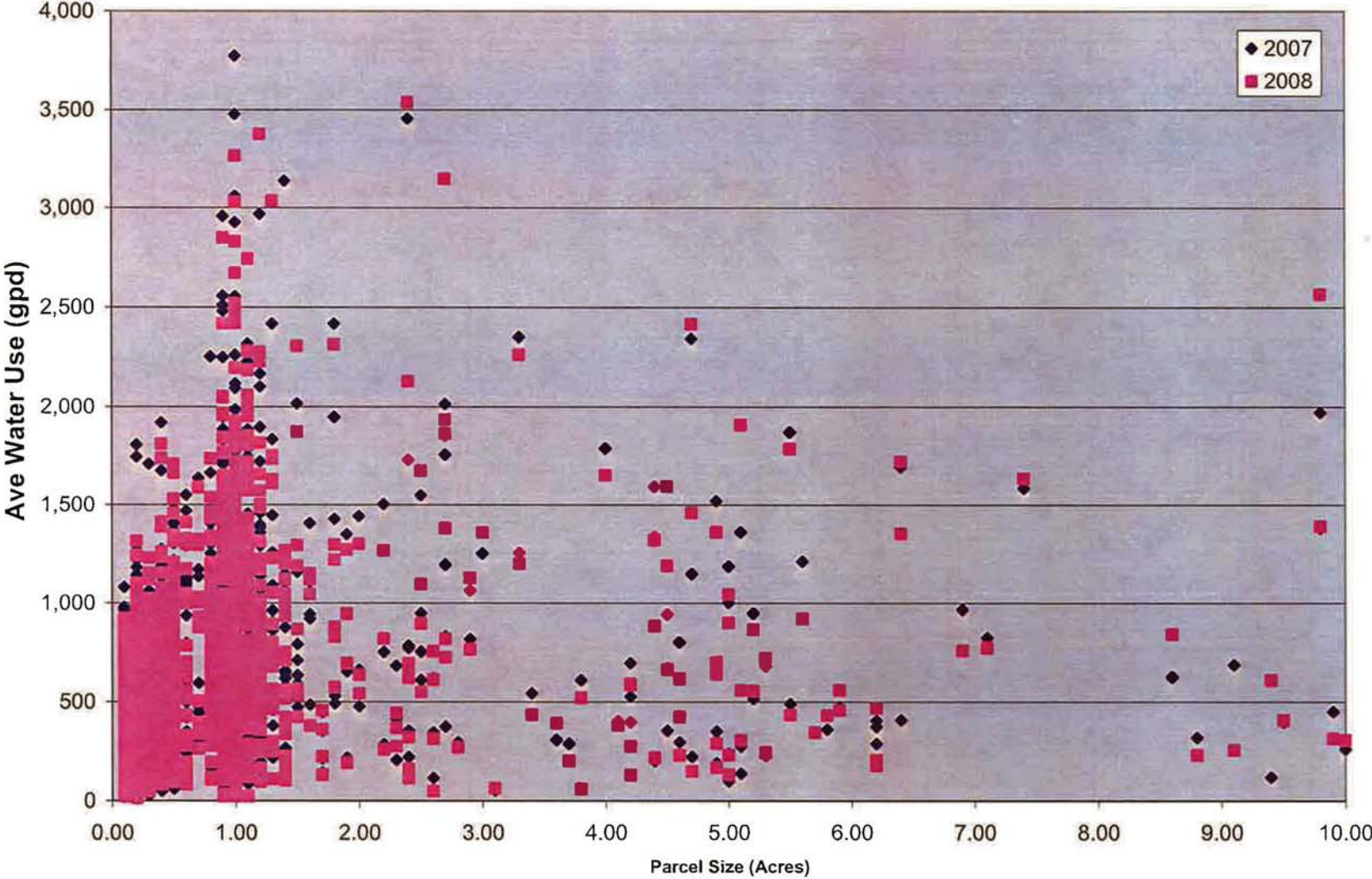
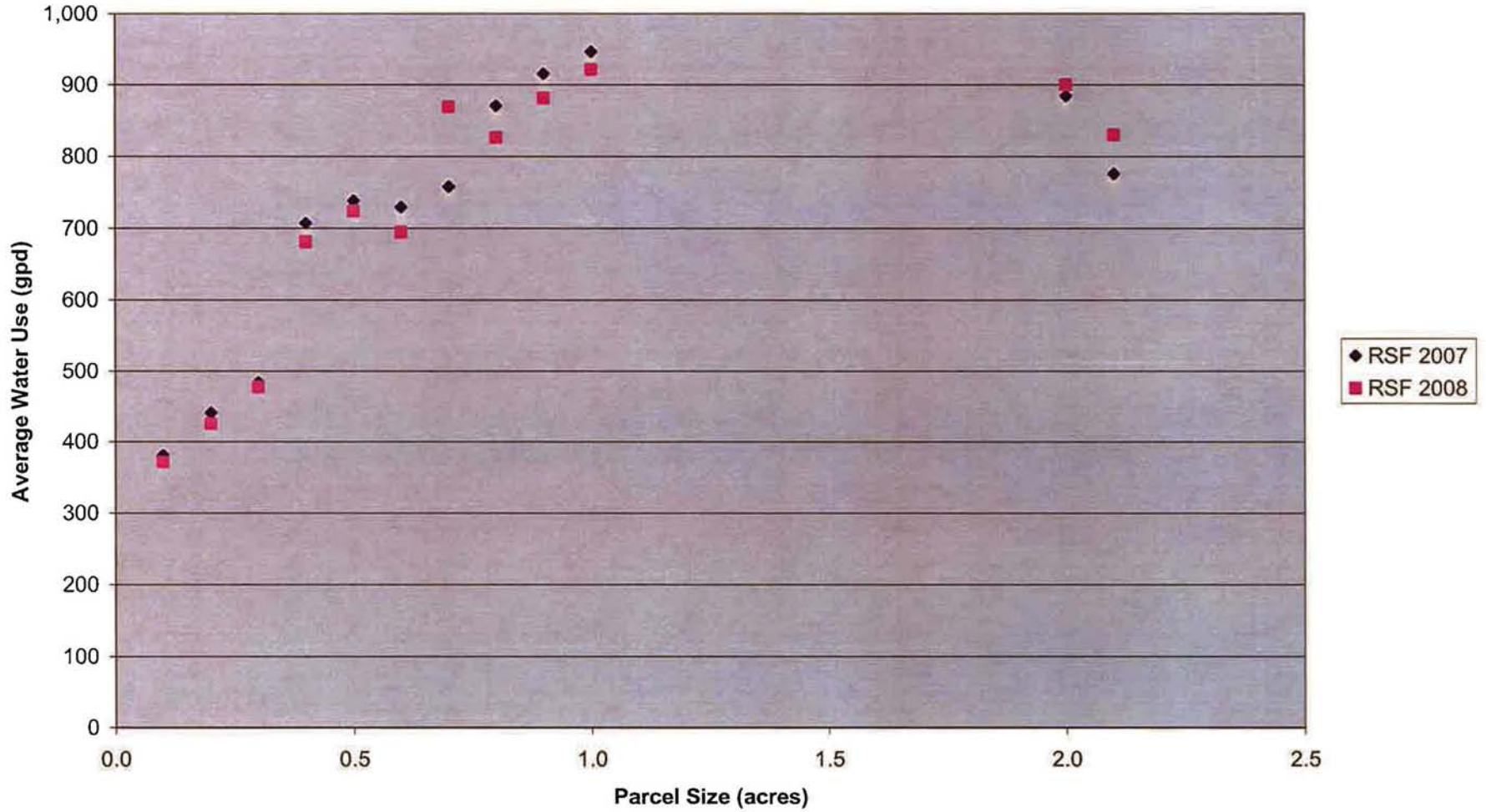


Exhibit 2
Average Water Use vs Parcel Size
Residential Single Family Onle



**Exhibit 3
Average Water Use vs Parcel Size
2007 and 2008**

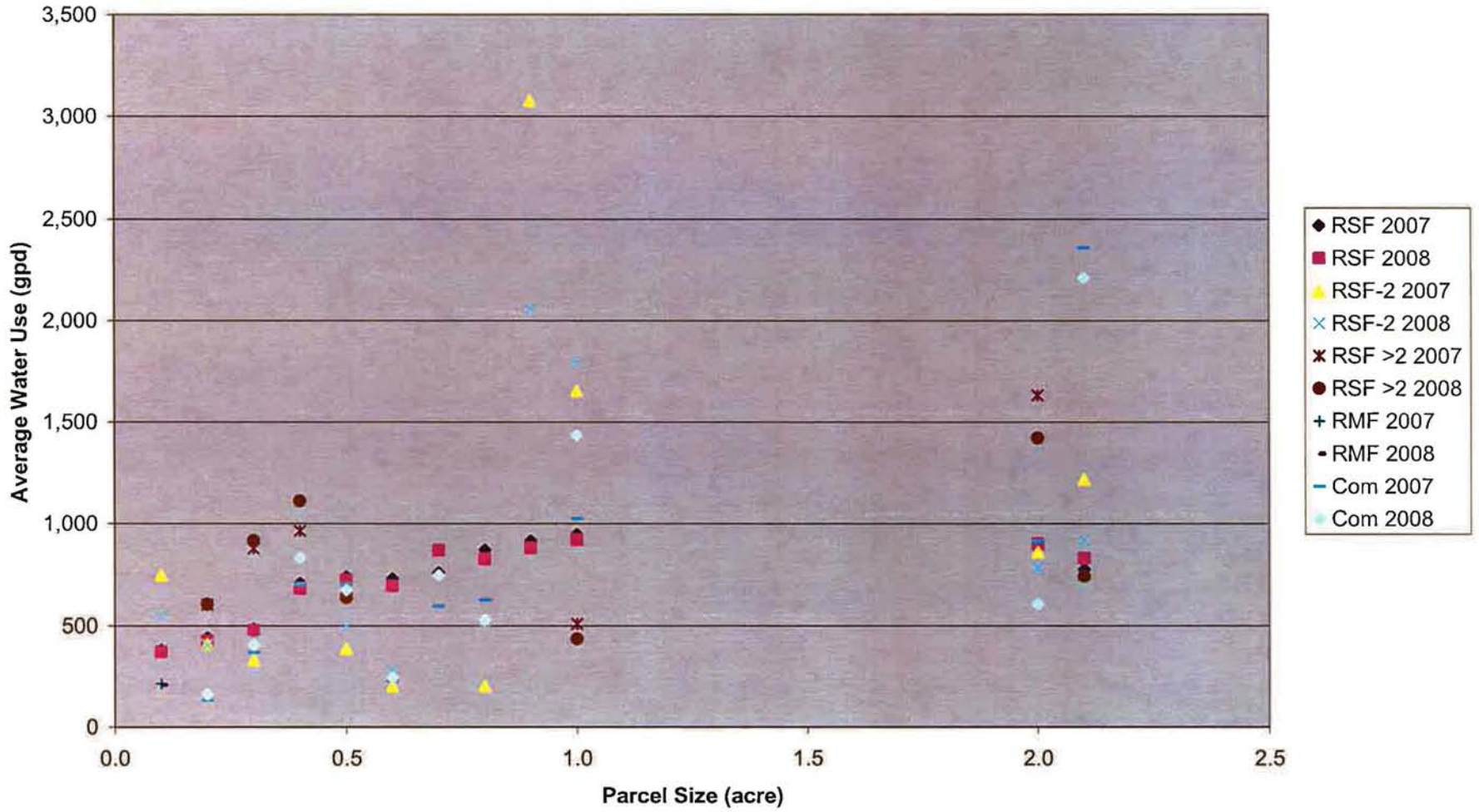
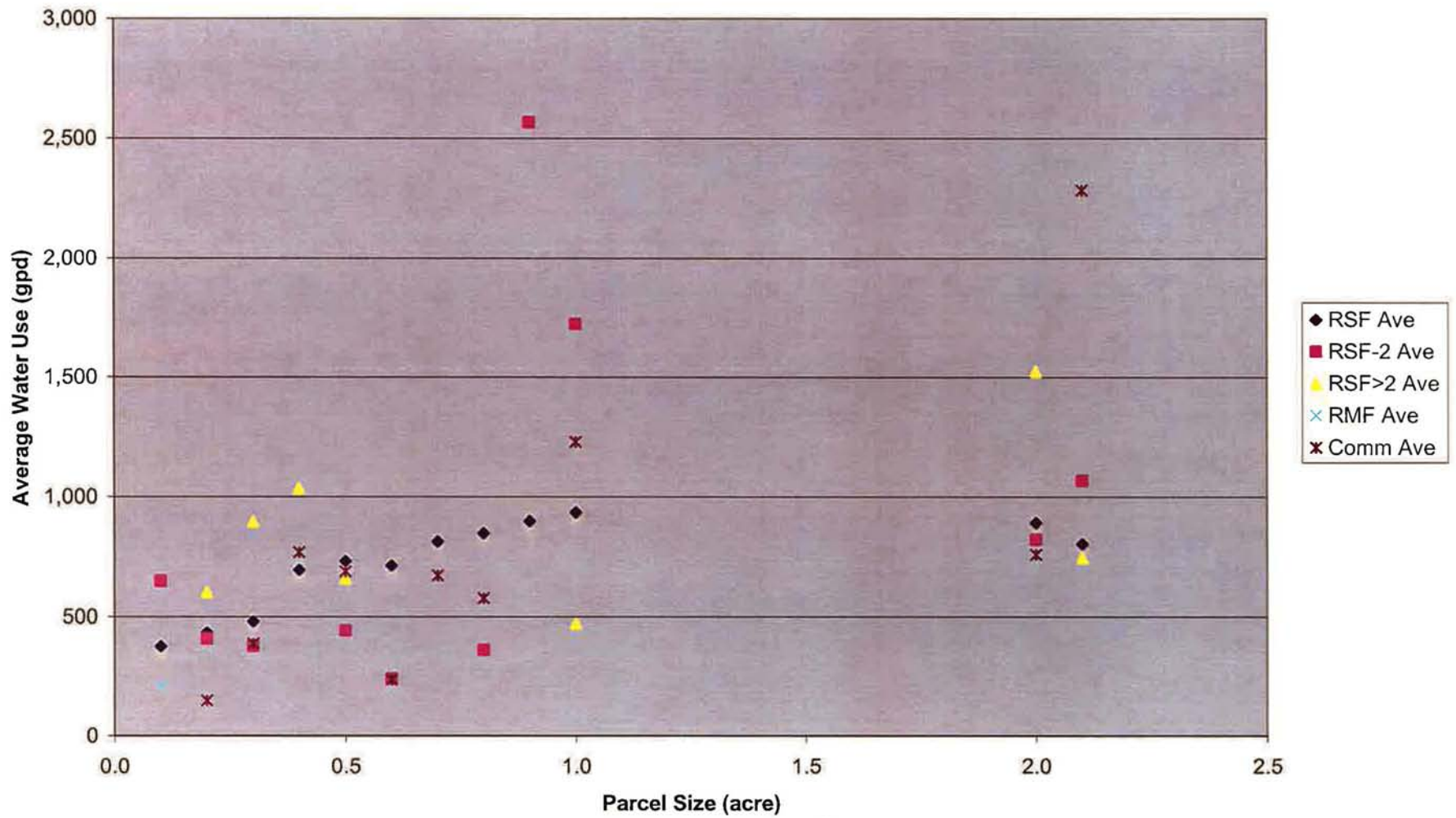


Exhibit 4
Average Water Use vs Parcel Size
Average of 2007 and 2008



TO: COMMITTEE MEMBERS
FROM: BRUCE BUEL *BBB*
DATE: MARCH 20, 2009

**AGENDA ITEM
5
MARCH 23, 2009**

**REVIEW DRAFT "PIPELINE ALIGNMENT" TECHNICAL MEMORANDUM
ITEM**

Review Draft "PIPELINE ALIGNMENT" Technical Memorandum [Forward Recommendations to Board].

BACKGROUND

Attached is a copy of AECOM's draft "PIPELINE ALIGNMENT" Technical Memorandum along with an errata sheet

RECOMMENDATION

Staff recommends that the Committee discuss the Technical Memorandum, provide feedback, and forward a copy to MNS Engineers (our Construction Manager) for review and feedback. A revised version of this TM will be incorporated into the 30% design report that will be reviewed by the Committee and the Board in April 2009.

ATTACHMENT –

- DRAFT TECHNICAL MEMORANDUM & ERRATA SHEET

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Memorandum

Date: March 3, 2009
To: Bruce Buel - General Manager
Peter Sevcik, PE - District Engineer
From: Michael Nunley, PE
Joshua Reynolds, PE
Subject: NCSD Waterline Intertie Project
Technical Memorandum 3 – Pipeline Alignment

1.0 Introduction

This Memorandum is AECOM's submittal for Task Group 1, Task 103, of the Waterline Intertie Project Design agreement between AECOM and Nipomo Community Services District. AECOM's scope of work is to define the proposed alignment and identify potential challenges. Preliminary pipeline design parameters such as diameter, length, material, valve type, anticipated working pressures and pressure classes, corrosion control (if required), thrust restraint, connections to the existing system, and air/vacuum valve type and placement are presented herein. Our 30% plan submittal presents many of these elements.

2.0 Background

At the request of the NCSD, AECOM (formerly Boyle) prepared the Waterline Intertie Project Preliminary Engineering Memorandum (May 2008). The report summarized the preliminary hydraulic analysis for the District's and the City of Santa Maria's distribution systems and the intertie pipeline; examined water quality and disinfection alternatives; and evaluated pipeline alignment, storage, and pumping options. Three main pipeline alignments were compared based on apparent constructability, potential environmental impact, easements required, existing utilities, intertie pipeline length, cost, and geotechnical considerations. The Board of Directors selected a final alignment based primarily on environmental issues and river crossing challenges associated with the eastern alignment. Refer to Figure 1 for the selected alignment.

The original project consisted of the components summarized in Table 1.

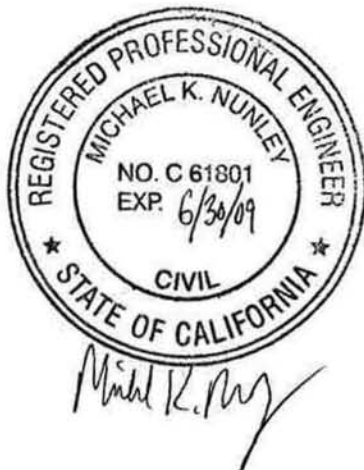


Table 1 – Waterline Intertie Project from Preliminary Engineering Memorandum

Component	Description
Blosser Road Water Main	<ul style="list-style-type: none"> - 5000 lineal feet (lf) of 18" water main, valves, and appurtenances from West Taylor Street to Atlantic Place - Flow meter
Santa Maria River Crossing	3700 lf of 24" water main from the north end of Blosser Road to the Horizontal Directional Drill (HDD) staging area, including: <ul style="list-style-type: none"> - 300 lf of bore-and-jack crossing underneath the south levee - 900 lf of open trench to the south HDD staging area - 2500 lf of water main from the south HDD staging area across the river to the north HDD staging area
Nipomo System Pipeline Improvements	<ul style="list-style-type: none"> - 2500 lf from the north side of the river (at the north HDD staging area) to the pump station site near Joshua Street - 3200 lf of 12" main along Orchard Avenue between Southland Street and Division Street - 3900 lf of 12" main along Southland Street between Orchard Road and Frontage Road - 6470 lf of 12" main along Frontage Road from Southland Street to Tefft Street - 340 lf of 12" main along Division Street between Allegre Road and Meridian Road - Approximately 150 pressure regulating valves for water services (to protect homeowners from higher pressures due to the new booster station) - Pressure reducing valve station on Joshua Street between the pump station and the Maria Vista development
Booster Pump Station and Reservoir	<ul style="list-style-type: none"> - 1830 to 2000 gallon per minute (gpm) booster pumping station - Chloramination system - 500,000 gallon reservoir
Wellhead Chloramination System	Conversion of four production wells from chlorination to chloramination systems

One of the concerns with the project is an increase in distribution system pressure for existing customers near the Waterline Intertie Project connection on Joshua Road (see Figure 2 [Area A]). Many of these customers currently experience pressures in the 90- to 100-psi range. The Preliminary Engineering Memorandum recommended installation of 150 pressure regulating valves as shown Table 1. This was considered a low cost approach to protecting homeowners from higher pressure.

In Technical Memorandum 9, AECOM developed an alternative to installation of regulating valves, as directed by District staff. This alternative included additional pressure reducing valve stations, isolation valves, and dedicated pipelines (instead of pipeline replacements, as originally described in the Preliminary Engineering Memorandum) to create a pressure zone (see Figure 3 [Area B]) that would not be affected by the booster station.

In addition, the pipeline segment along Division was not required because the current size is 10-inch, not 6-inch as shown in the District's Water and Sewer Master Plan Update. Table 2 summarizes the revised project description based on these additions.

Figure 2: NCSD System Improvements from May 2008 Preliminary Engineering Memorandum



Figure 3: Selected NCSD System Improvements

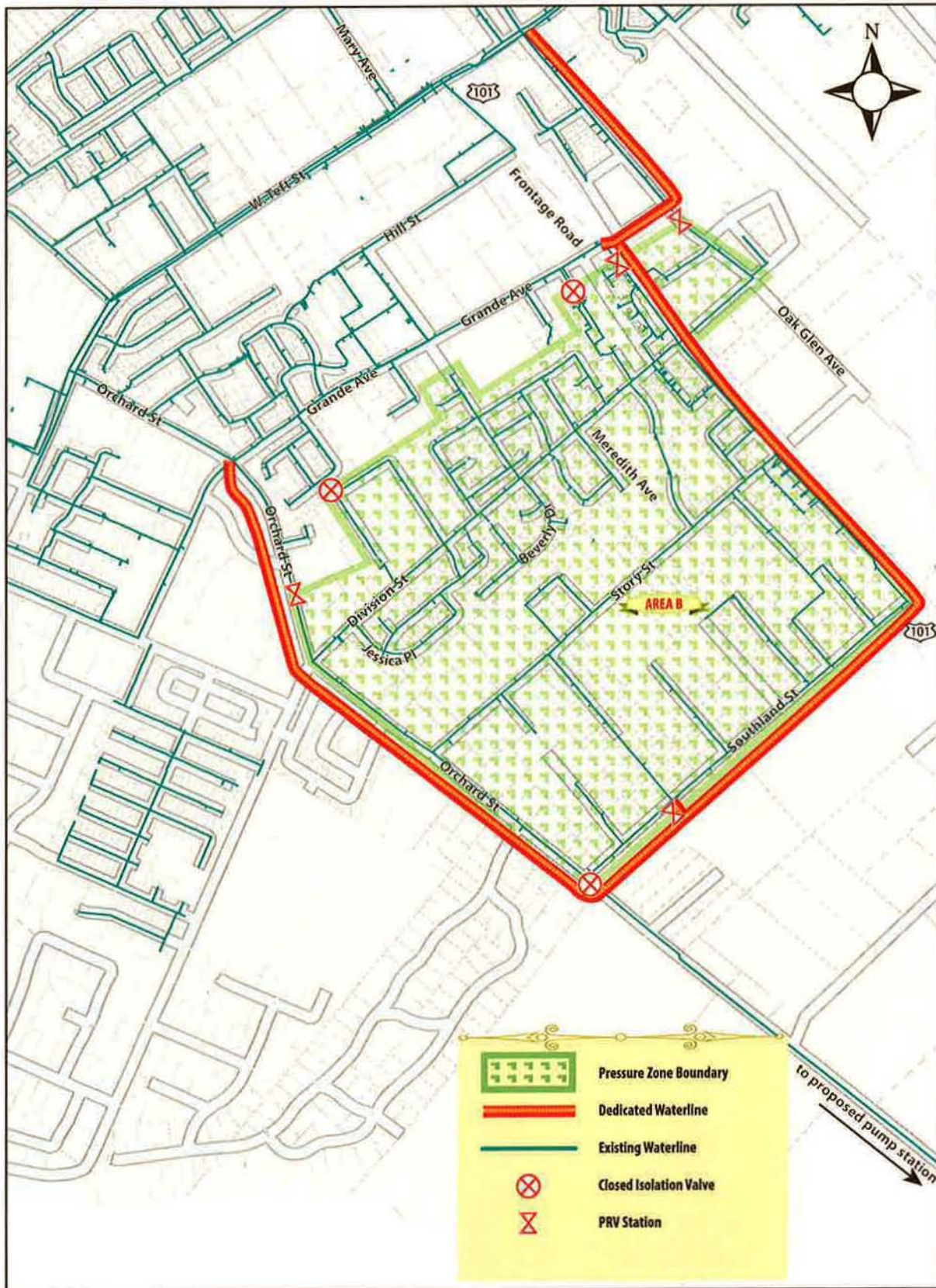


Table 2 – Revised Waterline Intertie Project

Component	Description
Blosser Road Water Main	5000 lineal feet (lf) of 18" water main, valves, and appurtenances from West Taylor Street to Atlantic Place Flow meter
Santa Maria River Crossing	3250 lf of 24" water main from the north end of Blosser Road to the Horizontal Directional Drill (HDD) staging area, including: <ul style="list-style-type: none"> - 300 lf of bore-and-jack crossing underneath the south levee - 900 lf of open trench to the south HDD staging area - 2050 lf of water main from the south HDD staging area across the river to the north HDD staging area
Nipomo System Pipeline Improvements	<ul style="list-style-type: none"> - 2500 lf from the north side of the river (at the north HDD staging area) to the pump station site near Joshua Street - 5200 lf of dedicated main along Orchard Road between Southland Street and Grande Street - 3900 lf of 12" dedicated main along Southland Street between Orchard Road and Frontage Road - 4400 lf of 12" dedicated main along Frontage Road from Southland Street to Grande Street - 220 lf of 12" dedicated main with bore and jack crossing at Highway 101 from Grande Street to Darby Lane - 500 lf of 12" main along Darby Lane to South Oakglen Avenue - 2100 lf of 12" main along South Oakglen Avenue from Darby Lane to Tefft Street - Five Pressure Reducing Valve Stations <ul style="list-style-type: none"> • Southland Street between Drumm Lane and Honeygrove • Orchard Road between Division Street and Apricot Lane • Frontage Road south of Grande Street • South Oakglen Avenue, south of Darby Lane • Between the pump station and the Maria Vista development
Booster Pump Station and Reservoir	2000 gallon per minute (gpm) booster pumping station Chloramination system 500,000 gallon reservoir
Wellhead Chloramination System	Conversion of four production wells from chlorination to chloramination systems

This Technical Memorandum addresses only the pipeline components of the project. AECOM is also assisting the District with development of construction plans for the Frontage Road Sewer Upgrade project on Frontage Road between the Southland Wastewater Treatment Facility and Division Street. The work will coincide with the waterline construction. The Frontage Road sewer design will be discussed in a separate Technical Memorandum.

3.0 Hydraulic Design Criteria

The basis for sizing the pipes, valves, and appurtenances presented herein is the result of hydraulic modeling described in Technical Memorandum 9 (System Pressure Reduction Study).

4.0 Geotechnical Design Recommendations

The draft Geotechnical Report by Fugro (January, 2009) presented soil parameters that are important for pipeline design. These are summarized in this Section:

The site is located within a seismically active region of Central California that is prone to moderate to large earthquakes. The design of the pipeline and associated structures should consider the potential for the site to be subject to strong ground motion in response to earthquakes. Structures should be designed to resist the forces generated by earthquake shaking in accordance with the building code and local design practice.

Based on the subsurface conditions encountered in the geotechnical investigation borings, the majority of the on-site soil should not be considered suitable for use as pipe bedding or backfill in the pipe zone. The southern portion of the Blosser Road alignment is underlain by sandy material that may be suitable for use as pipe bedding or pipe zone backfill. If the on-site soils are to be used for these purposes, the contractor will likely need to exercise care during excavation such that potentially suitable materials are not contaminated or mixed with the overlying or interbedded finer grained soils. The excavated materials can likely be used for compacted backfill above the pipe zone. Moisture conditioning of the soils and control of compaction layer thickness will be needed to achieve the recommended compaction.

The soils encountered at the site within the anticipated depth of excavation generally consist of sandy soils. The onsite soils can likely be excavated with conventional backhoe or excavator type equipment typically used for pipeline construction. Vertical cuts in sandy soils should not be considered stable unless properly shored or sloped in accordance with the requirements of OSHA. Temporary slopes and shoring will need to comply with OSHA requirements.

4.1 Blosser Road Extension

Groundwater was not encountered along the alignment. However, groundwater levels will depend on the time of year of construction and the water level in the Santa Maria River and adjacent Blosser drainage channel.

Trench depths are expected to be less than 10 feet. The bottom of the trench excavation is expected to expose loose to medium dense sand. The trench subgrade should be moisture conditioned and compacted prior to placing bedding material for the pipe.

4.2 Santa Maria River Levee Jack and Bore

Asphalt, concrete, and road base materials overlaying sand with varying amounts of silt and gravel were encountered in the borings. Groundwater was not encountered in the borings performed north and south of the levee. However, groundwater levels will depend on the time of year of construction and water level in the Santa Maria River. The rock slope protection for the levee (Fugro, 2008a) likely extends to a depth of approximately 20 feet below the top of the levee.

Jacking and boring and excavations for the jacking and receiving pits will likely encounter loose to medium dense sand with varying amounts of silt and gravel. Procedures should be followed that reduce the potential for caving of loose sands that can occur as a result of advancing the auger beyond the casing. There is a potential for the process to result in heaving or settlement of the levee. Recommendations are included in the geotechnical report for monitoring heave or settlement during construction.

4.3 Santa Maria River Crossing

Alluvium, older alluvium, and Paso Robles Formation were encountered in the soils explorations in the Santa Maria River. The alluvium and older alluvium generally consist of loose to very dense sand with varying amounts of silt, clay, and gravel. The Paso Robles Formation generally consists of dense to very dense sand with varying amounts of silt, clay, and gravel and stiff to hard silt and clay. Varying amounts of gravel, cobbles, and possibly boulders were encountered at various depths within the alluvium and Paso

Robles Formation. Groundwater was encountered at a depth of approximately 38 feet below the existing ground surface in the borings in the Santa Maria River.

In the cut and cover section of the pipeline alignment, trench excavation will likely expose loose to medium dense sand with varying amounts of silt, clay, and gravel. The trench subgrade should be moisture conditioned and compacted prior to placing bedding material for the pipe. Moisture conditions at the bottom of trench excavation could change if construction is performed during the wet season or during release from Twitchell Dam. Coordination of the construction schedule to river flow conditions may reduce the need for dewatering.

Pipe installation using horizontal directional drilling (HDD) at the river crossing will likely be relatively difficult as a result of variable subsurface conditions. Shallow groundwater, wet soil conditions, coarse sand and gravel layers, cobbles, possible boulders, and firm to hard silt and clay layers were encountered in the geotechnical investigation borings. Shallow clearances and drilling pressures need to be considered to prevent blowout under the river during the trenchless installation. Varying amounts of sand and gravel were observed in the drilling fluid throughout the entire depth of the boring. Periodic reconditioning of the drill fluid was needed to maintain viscosity and address fluid losses.

4.4 Nipomo Mesa Pipelines

Artificial fill and dune sand deposits were encountered along the pipeline alignment and generally consisted of asphalt concrete, base materials, very loose to very dense sand, and local soft to stiff silt. Groundwater was encountered in borings B-102 and B-405 near the Highway 101 crossing at a depth of approximately 27.5 feet below the existing ground surface. The groundwater encountered is below the anticipated pipe depths. Various concrete, rubble, and unidentified buried objects were encountered along the alignment below the asphalt pavements. The concrete appears to be associated with old concrete pavement in the area. We expect the bottom of the trench excavation will expose very loose to medium dense sand. The trench subgrade will likely need to be moisture conditioned and compacted prior to placing bedding material for the pipe.

4.5 Highway 101 Jack and Bore

Asphalt, concrete, road base materials, and dune sand deposits were encountered near the Highway 101 crossing and generally consist of asphalt concrete, base materials, and very loose to dense sand with varying amounts of silt. Depending on the groundwater levels during construction, groundwater may be encountered at the bottom of the jacking and receiving pits. Procedures should be followed that reduce the potential for caving of loose sands that can occur as a result of advancing the auger beyond the casing. There is a potential for the process to result in heaving or settlement of the Highway 101. Recommendations are included in the geotechnical report for monitoring heave or settlement during construction – and will be incorporated into the bid documents.

5.0 Materials and Sizes

The pipeline sizes and materials shown in the 30% design plans are summarized in Table 3. The Nipomo CSD requires C900 PVC for buried water mains 12" and smaller and ductile iron pipe (DIP) for buried water mains greater than 12".

Table 3 – Pipe Materials and Sizes

Location	Material and Size (including casing pipe if required)	Anticipated Maximum Working Pressure (psi)	Pressure Class
Blosser Road	18" DIP	100	CL 250
South Santa Maria River Levee Crossing	36" Steel casing with 24" DIP carrier pipe	N/A	Extra Strong (0.500" wall thickness)
South Riverside Alignment (levee to South HDD Staging Area Pump Station)	24" DIP	100	CL 250
Between Pump Station and Santa Maria Vista Road	18" DIP	150	CL 250
Southland Street	12" C900 PVC	110	CL 200
Frontage Road	12" C900 PVC	110	CL 200
Orchard Road	12" C900 PVC	110	CL 200
Oakglen Avenue	12" C900 PVC	100	CL 200
Darby Lane	12" C900 PVC	100	CL 200
Highway 101 Crossing	30" Steel casing with 12" C900 PVC carrier pipe	N/A	Extra Strong (0.500" wall thickness)

6.0 Fittings

Valves, pipe joints, and thrust restraints will be designed for the test pressure. The test pressure will be at least 150% of the anticipated working pressures listed in the above table.

Restrained, push-on, or mechanical joints will be specified for installation of carrier pipes in the jacked steel casings and other locations along the pipeline alignment as needed. Hydrostatic thrusts at the test pressures will be the basis for sizing thrust blocks or other means of resisting thrusts.

7.0 Valves and Appurtenances.

Gate valves will be used for buried installations. Butterfly valves will be used in the PRV vaults because they require less space than gate valves, resulting in a smaller vault footprint. Valves will be flanged and equipped with 2" AWWA operating nuts for buried valves and hand wheel operated valves in vaults or above ground.

7.1 PRV Stations

Pressure reducing valves (PRVs) will be Cla-Val model 90-01 or approved equal. Each PRV station will be a buried vault with two valves. The smaller PRV is intended to regulate pressures during relatively low flows (average day for example). The larger PRV will regulate pressures during higher flows when the smaller valve cannot supply enough water to meet demand at the PRV pressure setting (during a fire for example) in the regulated pressure zone (see Figure 2). Flanged fittings will be specified for installation in the new PRV vault.

Vaults will be pre-cast structures with traffic-rated access hatches, telemetry and controls for connection to the SCADA system. Instrumentation and controls will be address in Technical Memorandum 8.

Initial pressure valve settings are summarized in Table 4. Settings are based on the hydraulic modeling summarized in Technical Memorandum No. 9. The PRV settings can be adjusted in the field as necessary.

Table 4 – PRV Settings

Location	Station	High-Flow PRV Nominal Size/Downstream Pressure Setting (psi)	Low-Flow PRV Nominal Size/Downstream Pressure Setting (psi)
Southland St.	2020+00	6" / 89	2.5" / 94
Orchard Rd.	1043+00	6" / 73	2.5" / 78
Frontage Rd.	3041+00	6" / 77	2.5" / 82
S. Oakglen Ave.	4011+00	6" / 77	2.5" / 82

7.2 Air/Vacuum and Air Release Valves

Air/vacuum and air release valve (ARV) construction details will be consistent with the latest versions of the City of Santa Maria standard details for the Blosser Road waterline and Nipomo CSD for all other locations, unless modifications are deemed necessary by AECOM. The plans show potential locations for ARVs in the profile at all local high points; actual locations will be evaluated once the pipeline profile is finalized. The physical locations for the ARV cans will be determined once the pipeline alignment plan and profile is completed to the 60% progress level.

8.0 Corrosion Control

Linings and coatings designed to protect against corrosion will be utilized to negate the need for cathodic protection. Polyethylene "baggies" and wrapping will be used for DIP and at fittings, valves, etc. per AWWA specifications.

9.0 Blosser Road Flowmeter

AECOM recommends the use of a magnetic meter which offers a high degree of accuracy and reliability, as well as requiring little maintenance. These types of meters can provide flow readings within 0.5 percent of actual flow. The meter will be installed in a precast vault with a traffic-rated access hatch, buried bypass piping, butterfly valves for shutoff, and will be connected to both the Santa Maria and NCSD SCADA systems. It is anticipated both agencies will be able to read data from the flowmeter with no remote control capability. Instrumentation and controls will be addressed in Technical Memorandum 8.

10.0 Pavement Repair

It is assumed pavement will be replaced at either the thickness specified below (from the Geotechnical Report, *ibid.*) or at the existing thickness, whichever is greater. Pavement Repair in San Luis Obispo County will be coordinated with the County of San Luis Obispo Public Works Department, at this time one traffic lane width is anticipated to be repaved after pipeline installation is completed. Similar requirements have been assumed for the pavement in the City of Santa Maria. Final pavement repair conditions will be incorporated into the bid documents.

11.0 Easement Requirements

NCSD will be responsible for acquiring easements north of Blosser Road, across the levee and river, through the Linda Vista Farms area, and to the existing pipeline easement between Joshua Road and Maria Vista Estates. Both permanent easements and temporary construction easements will be required. Locations and widths are summarized in Table 5, although they are considered approximate until negotiations are finalized with the existing property owners. The width of the temporary construction easement represents the entire width during construction. The permanent utility easement width will remain.

Table 5 – Easement Widths and Locations

Location	Assessor Parcel Numbers (APNs)	Stations	Temporary Construction Easement Width (ft)	Permanent Utility Easement Width (ft)
Blosser Road	017-030-019	Unknown (15+00 & 18+00)	30	10
South Santa Maria River Levee Crossing	090-341-019	50+91 to 53+71	100	30
South Riverside Alignment (levee to South HDD Staging Area)	090-341-019	53+71 to 56+99	100	30
Linda Vista Farms Area	090-291-042	100+00 to 105+00	100	30
	090-291-043	105+00 to 112+50	--	30
	090-291-044	112+50 to 118+40	--	30

12.0 Bore and Jack Crossings

Crossing the south Santa Maria River levee and Highway 101 at Grande/Darby will both require the use of trenchless technologies. Both the traditional bore-and-jack and guided-auger-boring methods are well suited for these installations. The traditional bore-and-jack method consists of removing the soil ahead of a steel casing pipe that is simultaneously jacked behind the cutting head of an auger. The auger is placed within the steel casing. A bore-and-jack installation will require a jacking pit (approx. 40' x 12'), a receiving pit (approx. 10'x10'), and surface access for equipment and personnel.

The guided-auger-boring method (auger boring with pilot tube guidance, including a jacked steel casing) is another trenchless process that includes elements from the conventional bore-and-jack method. This method first requires the installation of a pilot tube using a laser-guided steering head. Using this pilot tube for guidance, an auger head is then advanced behind the pilot tube to bore the required opening for the steel casing. Simultaneously, the steel casing is jacked behind the cutting head auger. Like the bore-and-jack method, this process will require a jacking pit (approx. 35' x 12'), a receiving pit (approx. 20'x10'), and surface access for equipment and personnel. This method is applicable for casing sizes up to 48 inches outside diameter.

For either method, the carrier pipe is installed inside the casing.

12.1 South Santa Maria River Crossing

The south Santa Maria River crossing will be constructed of 24 inch DIP and will include:

1. 280 feet of bored and jacked 30 inch steel casing;
2. 900 feet of "cut and cover" construction;
3. 2050 feet of HDD construction (design of HDD is covered in a separate Technical Memorandum).

Both the Santa Barbara County Flood Control & Water Conservation District (SBCFC&WCD) and the United States Army Corps of Engineer (USACE) were contacted to determine design requirements for the levee crossing.

The USACE has requirements for how deep to construct a pipeline under a river levee. The Corps indicated they were in the process of preparing design documents for repairs to the levee and provided preliminary requirements. The Corps plans to extend levee improvements to 15 feet below the low flow channel elevation which is about 30 feet below the top of the existing levee. The Corps' preliminary requirement is for the top of the casing be three feet lower than the bottom of the levee. Note that these requirements may be subject to change pending the USACE's completion of design documents for the levee upgrades currently scheduled for completion by May 29, 2009. Modifications to the levee crossing depth, length, and other USACE requirements may need to be incorporated at that time.

A second criterion for determining the elevation of the top of the casing under the river is scour protection. Scour considerations were evaluated based on the report *Evaluation of Channel-Bed Scour at Proposed Coastal Aqueduct Crossing of Santa Maria River* (Chang, 1995)¹. In the Chang Report the top of the CCWA State Water Pipeline was recommended for constructed at approximately 25 feet below the active riverbed, to account for the maximum estimated general scour plus a factor of safety for potential local scour.

The calculations shown below were used to assess the worst case for determining the elevation of the top of the casing under the levee and the uncased pipe under the river between the levee crossing and the start of the HDD section. The lower elevation of the two methods will be used to determine the depth of the casing.

Check Depth Based on Levee Repairs:

(Top of Levee Elevation) – (Depth of Levee Repairs) – (Minimum Clearance) = (Top of Casing Elevation)

202 ft – 30 ft – 3 ft = 169 ft

Check Depth Based on Scour Protection:

(Channel Elevation) – (Scour Protection Depth) = (Top of Casing)

190 ft – 25 ft = 165 ft

Since the scour protection depth is lower than the required clearance for the levee repairs, use 165 feet as the elevation for the top of the casing and the top of the uncased pipe under the river.

In conformance with recommendations made in the Draft Geotechnical Report (Fugro, 2009), provisions will be included in the project technical specifications that will require the contractor to monitor the ground surface above the steel casing for settlement and/or heave prior to and during boring and jacking operations. If the heave or settlement exceeds the maximum allowable then mitigation measures such as grouting and/or repair to the levee will be required.

12.2 Highway 101 Crossing

The pipeline will cross the Caltrans Highway Right-Of-Way between Frontage/Grande Street and Darby Lane via a perpendicular bore and jack installation. The highway crossing will include approximately 220-lf of 12-inch ductile iron carrier pipe within a 30-inch steel casing pipe. Based on Chapter 600 – Utilities Permits of the Caltrans Encroachment Permits Manual, the following design criteria are assumed in the 30% design:

- Required thickness for steel casing pipe will be ½-inch thick
- Encasement shall extend, at a minimum, to the highway right-of-way lines.
- The recommended minimum depth of cover for pipelines or casings 25-inches to 48-inches shall be 15-feet.

Based on a top of roadway elevation of 338-ft at Highway 101 (see DWG C-139), the recommended top of pipe elevation for casing placement is $338 - 15 = 323\text{-feet}$. Pending outcome of the Caltrans encroachment permit submittal and review process, modifications to the design may be required to satisfy any additional State requirements and/or conditions that may arise.

In conformance with recommendations made in the Draft Geotechnical Report (Fugro, 2009), provisions will be included in the project technical specifications that will require the contractor to monitor the ground surface above the steel casing for settlement and/or heave prior to and during boring and jacking operations. If the heave or settlement exceeds the maximum allowable then mitigation measures such as grouting and repair to the roadway will be required.

13.0 Traffic Control

It is assumed the contractor will be responsible for preparing and submitting traffic control plans along Blosser Road, Orchard Avenue, Frontage Road, Joshua Road, Southland Road, and Darby Lane.

14.0 Permitting Issues

Other than the environmental permits (to be described in Technical Memorandum 6 – Permitting Strategy), other permits include encroachment permits from the City of Santa Maria, County of San Luis Obispo, and Caltrans for the Highway 101 crossing. Typical design standards from each agency have been incorporated into project design and will be submitted to these agencies for review and approval following completion of the draft Concept Design Report.

Outline of Technical Specifications

An outline of Technical Specifications is attached as Appendix A.

Preliminary Plan Sheets

30% concept plans are attached as Appendix B.

Appendix A

Outline of Technical Specifications for Pipelines

Nipomo Community Services District

WATERLINE INTERTIE PROJECT

PRELIMINARY PIPELINE TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

007300 SUPPLEMENT TO GENERAL CONDITIONS

DIVISION 01 - GENERAL REQUIREMENTS

011100 COORDINATION OF WORK, PERMITS, AND REGULATIONS
012000 MEASUREMENT AND PAYMENT
013233 PRECONSTRUCTION DIGITAL AUDIO-VIDEO DOCUMENTATION
013300 SUBMITTALS
015100 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
015526 TRAFFIC REGULATION
017410 CLEANING DURING CONSTRUCTION AND FINAL CLEANING
019310 OPERATION AND MAINTENANCE MANUALS

DIVISION 02 - EXISTING CONDITIONS

020120 PROTECTING EXISTING UNDERGROUND UTILITIES
020130 CONNECTIONS TO EXISTING BURIED PIPELINES
023219 SUBSURFACE UTILITY LOCATING (POTHOLING)

DIVISION 03 - CONCRETE

030500 GENERAL CONCRETE CONSTRUCTION
034210 PRECAST CIRCULAR CONCRETE MANHOLES
034220 PRECAST CONCRETE VAULTS

DIVISION 05 - METALS

055300 ACCESS HATCH FOR PRV VAULT

DIVISION 09 - FINISHES

099000 PAINTING AND COATING
099752 COLD-APPLIED WAX TAPE COATING
099754 POLYETHYLENE SHEET ENCASUREMENT (AWWA C105)
099761 FUSION-BONDED EPOXY LININGS AND COATINGS

DIVISION 31 - EARTHWORK

311100 CLEARING, STRIPPING, AND GRUBBING

312300 EARTHWORK
312316 TRENCHING, BACKFILLING, AND COMPACTING
313219 FILTER FABRIC
317216 JACKED STEEL CASING

DIVISION 32 - EXTERIOR IMPROVEMENTS

321216 ASPHALT CONCRETE PAVING
321613 CONCRETE CURBS, GUTTERS, AND SIDEWALKS
321723 TRAFFIC SIGNING, STRIPING, AND MARKINGS

DIVISION 33 - UTILITIES

330130 LEAKAGE AND INFILTRATION TESTING
330131 SANITARY SEWER SYSTEM TELEVISION INSPECTION
331300 DISINFECTION OF PIPING
333112 PVC GRAVITY SEWER PIPE

DIVISION 34 - TRANSPORTATION

344113 TRAFFIC SIGNALS AND INTERSECTION LIGHTING

DIVISION 40 - PROCESS INTEGRATION

400500 GENERAL PIPING REQUIREMENTS
400515 PRESSURE TESTING OF PIPING
400520 MANUAL, CHECK, AND PROCESS VALVES
400560 AIR RELEASE, AIR/VACUUM, AND COMBINATION VALVES
400570 PRESSURE REDUCING VALVES
402040 DUCTILE-IRON PIPE
402092 PVC DISTRIBUTION PIPE (AWWA C900)
409115 MAGNETIC FLOWMETERS

END OF SECTION

Appendix B

Preliminary Plans for Pipeline Alignment

Plansets are attached under separate cover.

AECOM
 1194 Pacific St, Suite 204, San Luis Obispo, CA 93401
 T 805.542.9840 F 805.542.9990 www.aecom.com

Mr. Bruce Buel
 Nipomo Community Services District
 P.O. Box 326
 Nipomo, CA 93444

March 11, 2009

Dear Mr. Buel,

Subject: Corrections to Technical Memorandum No. 3 – Pipeline Alignment

As part of the Waterline Intertie Project 30% Design submittal, AECOM submitted Technical Memorandum No. 3 – Pipeline Alignment on March 3, 2009. On March 6, 2009, the District provided comments on the Memorandum. Based on these comments, AECOM prepared the following corrections. Please append this letter to Technical Memorandum No. 3 to complete the submittal. These corrections will also be incorporated in the Concept Design Report to be submitted later this month.

1. Page 3, Paragraph 1, Sentence 2: To the end of the sentence, add: "and would experience pressures around 110 psi without pressure reducers".
2. Page 3, Paragraph 2, Sentence 1: Delete "staff" from end of sentence and revise "District" to "The District".
3. Page 6, Paragraph 1, Sentence 3: Replace sentence with the following: "The sewer line will need to be installed prior to installing the new waterline on Frontage Road, which is the reason for combining these projects into the same construction documents".
4. Page 9, Paragraph 4: Add the following sentence to the end of the paragraph: "Valves will be placed at all pipeline intersections (3 valves at tees, and 4 valves at crosses) and are shown on the plans at approximately every 500 feet along straight lengths of pipe for isolation purposes. Spacing should be discussed by District staff and the project team."
5. Page 10, Table 4: Add the following information:

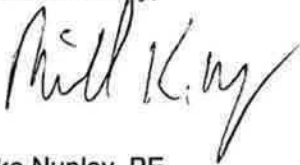
Location	Station	High-Flow PRV Nominal Size/Downstream Pressure Setting (psi)	Low-Flow PRV Nominal Size/Downstream Pressure Setting (psi)
Santa Maria Vista Rd.	118 + 50	6" / 100	2.5" / 95

6. Page 10, Paragraph 1, Sentence 1: Replace sentence 1 with the following: "Air/vacuum and air release valves (ARV) construction details will be consistent with the latest versions of the Nipomo CSD standard details for all locations. Valve covers will conform to City of Santa Maria standards to allow a consistent appearance, if it is possible to still meet Nipomo CSD standards for the valves and appurtenances.

7. Page 12, Subsection 12.1,
 - a. Subheading: Delete "South" from subheading
 - b. Sentence 1: Replace sentence 1 with the following: "The Santa Maria River crossing will include the following sections:
 1. 280 feet of bored and jacked 36 inch steel casing with 24 inch DIP;
 2. 900 feet of "cut and cover" construction for 24-inch DIP;
 3. 2050 feet of HDD construction (design of HDD will be included in the 60% planset)."

We hope these corrections are helpful when reviewing the document.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Mike Nunley". The signature is fluid and cursive, with a long horizontal stroke at the end.

Mike Nunley, PE
Project Manager

TO: COMMITTEE MEMBERS
FROM: BRUCE BUEL *BB*
DATE: MARCH 20, 2009

AGENDA ITEM
6
MARCH 23, 2009

2010-2015 WATER RATE STUDY RFP

ITEM

Review draft RFP to prepare 2010-2015 Water Rate Study, edit draft, and authorize circulation to prospective consultants [FORWARD RECOMMENDATIONS TO BOARD]

BACKGROUND

NCSD's water rates are set through December 31, 2009, however, the rates starting January 1, 2010 are yet to be determined. The Board's current practice is to retain a rate consultant to prepare a five year financial plan and to use that plan to set rates for three years. Staff expects that the 2010-2015 period will include the construction of the waterline intertie project and proposes to evaluate the revenues required to cover operating and maintenance costs so that a proposition 218 proceeding can be structured. Additionally, staff proposes to use the rate study to evaluate alternate levels of contribution to the water replacement fund, to evaluate alternative rate designs, to explore alternate basis for non-single family customers, and to explore the possibility of using rates to pay for waterline intertie project debt service should the assessment fail. Attached is a request for proposal prepared by staff.

FISCAL IMPACT

Processing of the RFP would involve the use of existing staff funded in this year's budget. Preparation of the study is expected to cost approximately \$25,000 with funding from both the FY08-09 and FY09-10 Budget.

RECOMMENDATION

Staff believes that the rate study is necessary to establish future rates, to explain the implications of the Waterline Intertie Project to the ratepayers and to address unresolved issues.

ATTACHMENTS

- Draft RFP

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Xxxxx Y, 2009

ZZZZZZZ

AAAAA.

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CCCCC, DD EEEEE

SUBJECT: REQUEST FOR PROPOSAL FOR 2010-15 NCSD WATER RATE STUDY

Dear Mr. ZZZZZZZ;

Nipomo Community Services District ("NCSD") operates a water system with approximately 4,000 customers. NCSD has traditionally adjusted rates annually based on a Comprehensive Financial Plan. The last water system Comprehensive Financial Plan and Rate Study was completed in 2005, which formed the basis for rates in 2006, 2007, 2008, and 2009. NCSD proposes to compile a 2010-2015 Comprehensive Financial Plan and Rate Study to serve as the basis for water rates in 2010, 2011 and 2012 including the funding necessary for operation of the Waterline Intertie Project. NCSD wishes to also evaluate alternatives: (A) Annual contributions to the replacement fund; (B) Rate structures (2 tier, 3 tier and 4 tier structures); (C) basis of charges for Non-Residential customers, and (D) Revenue/rates related to funding the capital component of the Waterline Intertie Project (as a contingency should the assessment proceeding fail).

It should be noted that NCSD has merged the Blacklake Water System and the Town Water System into one unified Water System.

SERVICES REQUESTED

DISTRICT is seeking proposals from qualified firms ("Consultant") to:

- Review background information including the 2005 Rate Study, the FY07-08 Audit, current financial statements for FY08-09, the FY08-09 Budget, the Draft FY09-10 Budget, the Water & Sewer Master Plan, the 2008 Replacement Study, the Waterline Intertie Project 30% Design Report, and staff's projections of 2010-2014 Capital Expenditures, Staffing and local water purveyors for comparison of water rates.
- Meet with Staff to discuss the background information.
- Develop and publish work product #1 -- a listing of Plan assumptions, five year projections of operating expenditures, five year projections of capital investments other than the Waterline Intertie Projects, alternative annual replacement contributions, and alternative yearly total expenditures based on O&M, Capital and Replacement Contributions;

- Develop Work Product #2 – Projections of revenues generated with 2009 rate schedule, total revenues prior to any rate adjustment, and the range of annual shortfalls between projected expenditures and pre-adjustment revenues plus a description of three alternate rate structures, two alternate basis for calculation of non-single family residential water rates and a survey of rates charged by other local water purveyors.
- Meet with Budget and Finance Committee to review work product #1/ #2 and secure Committee Recommendation regarding the level of annual replacement contributions, the three alternate rate structures and the two alternate non-residential rate bases.
- Revise and re-publish Work Products #1 and #2 based on Committee Input.
- Develop and produce an Administrative Draft Comprehensive Water Financial Plan and Rate Structure Analysis projecting new rates by year by rate structure and basis of charge to achieve projected revenue targets.
- Meet with Staff to review Draft.
- Edit Draft and Republish Review Draft for consideration by Committee and Board.
- Participate in up to two Finance and Budget Committee Meetings.
- Participate in up to two Board Meetings to finalize Plan
- Edit Review Draft and Publish Final Draft
- Assist in drafting Proposition 218 Notice
- Participate in up to two Meetings regarding Proposition 218 consideration.

QUOTE REQUIREMENTS

Ten copies of the proposal must be received by DISTRICT in a sealed envelope by **3 p.m. on Tuesday FFFFF GG, 2009**, to be considered. The exterior of the envelope must identify the quote as "Rate Study Services Proposal". Faxes, E-Mails, proposals not enclosed in a sealed/labeled envelope, and proposals received after 3:00 p.m. on Tuesday FFFF GG, 2009, will not be considered and will be returned to the submitter.

The Proposal shall include, as a minimum, the following:

1. Cover Letter/Introduction
 - Present your understanding of the project and the services requested.
 - The Cover Letter shall be signed by an official authorized to bind the firm and shall contain a statement that the proposal is valid for ninety (90) Days.

2. Scope of Services
 - Detail your proposed approach to both phases of the assignment.
 - Describe any proposed scope amendments; exceptions to the attached Task Listings or exceptions to the terms of the attached Agreement.
3. Personnel
 - Identify the Team Leader and provide résumé.
 - Identify any additional team members and provide résumés.
 - Include an Organization chart depicting the name and position of each participant
 - Describe the role of each team member
4. Experience & References
 - Describe your experience in providing similar services for local government entities in California
 - Provide references for projects of similar scope and nature performed over the last four years.
5. Cost Estimate and Schedule
 - Complete and submit the attached Quote Sheet that has been signed by a principal authorized to represent the firm.
 - Submit a listing of fees and charges including travel costs
 - Submit a proposed schedule for all tasks described above

SELECTION PROCESS

NCSD will screen proposals from FFFFFF GG, 2009 to HHHHHH II, 2009. The Board is tentatively scheduled to select a firm at its HHHHHH II, 2009 meeting. NCSD may conduct interviews during the screening process.

PROPOSAL EVALUATION

Proposals will be evaluated on the following:

- Responsiveness to Request for Quote
- Scope Amendments and Exceptions to Task Listing and/or Agreement
- Experience of the team to perform the requested services
- Qualifications of the personnel proposed for the project
- Cost including fees and reimbursables (Not-to-Exceed Expenditure Limit)

Notes:

This is a time-sensitive project.

The selected consultant will be expected to execute a standard agreement (attached).

NCSD reserves the right to reject any and all submittals and/or solicit new submittals at its discretion. NCSD reserves the right to negotiate with lesser ranked firms, if the negotiation with the top ranked firm is unsuccessful. The submitter retains no interest in the proposal once received by NCSD. Proposers are responsible for all costs associated with the proposal.

For more information on the project or this RFP, contact NCSD General Manager Bruce Buel at 805-929-1133 or bbuel@ncsd.ca.gov.

Sincerely,

NIPOMO COMMUNITY SERVICES DISTRICT

Bruce Buel
General Manager

CC: Lisa Bognuda, Finance Director
2009 Water Rate Study Project File

Enclosures

- Quote Sheet
- Listing of Tasks
- Project Schedule
- Standard Agreement

T:\DISTRICT PROJECTS\WATER RATE STUDY 2010-14\RFP SAMPLE.DOC

NCSD WATER RATE STUDY PROJECT

QUOTE SHEET

Date: _____

NAME OF FIRM: _____

NAME OF PRINCIPAL: _____

NAME OF CM TEAM LEADER: _____

ADDRESS: _____

PHONE: _____ FAX: _____


E-MAIL: _____

NOT-TO-EXCEED EXPENDITURE LIMIT FOR ALL FEES & CHARGES INCLUDING

TRAVEL: _____

Signature of Principal Authorized to Sign for Firm and Date

This quote shall be valid for 90 Days from the date of Signature

TO: COMMITTEE MEMBERS
FROM: BRUCE BUEL 
DATE: MARCH 20, 2009

AGENDA ITEM
7
MARCH 23, 2009

SET NEXT COMMITTEE MEETING

ITEM

Set next committee meeting [Set Time/Date].

BACKGROUND

The Committee may wish to meet prior to the April 8th Board Meeting if it wishes further information on the basis of assessment or if it wishes to discuss AECOM's 30% Design. Normally, the Committee would meet on the Monday prior to the second Board Meeting – April 20, 2009.

RECOMMENDATION

Staff recommends that the Committee set a meeting at 2pm on either Monday 4/6 or Monday 4/20.

ATTACHMENT – NONE

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