NIPOMO COMMUNITY SERVICES DISTRICT

MONDAY, SEPT. 8, 2008

1:00 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 DRAFT PRESSURE REDUCTION TECHNICAL MEMORANDUM**

   ACTION RECOMMENDED: Forward Recommendation to Board

4. **DISCUSS OPTIONS TO PAY FOR WIP DEBT SERVICE**

   ACTION RECOMMENDED: Forward Recommendations to Board

5. **SET NEXT COMMITTEE MEETING**

   ACTION RECOMMENDED: Set Time/Date for Next Committee Meeting

6. **ADJOURN**

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

TO: COMMITTEE MEMBERS

FROM: BRUCE BUEL BBB

DATE: Sept. 4, 2008

AGENDA ITEM 2
SEPT. 8, 2008

REVIEW SUPPLEMENTAL WATER DEVELOPMENT STATUS

ITEM

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

BACKGROUND – WATERLINE INTERTIE PROJECT

Mike Nunley from Boyle Engineering is scheduled to review recent progress on the design at the Committee Meeting.

Staff is working with MNS Engineer's to finalize Phase 1 of the CM Agreement.

Staff is scheduled to summarize recent discussions with the City of Santa Maria regarding negotiation of a Final Agreement.

Staff has developed a rough project funding outline and secured information on the CSDA Finance Corporation (See Agenda Item 4).

DWA has summarized the feedback from the scoping process and is preparing the draft EIR.

BACKGROUND – DESALINATION

Staff is monitoring the progress of the South County Sanitation District regarding their desalination project and the City of Santa Barbara regarding the City's decision to sell a portion of their potential production. SCSD has yet to set a meeting to discuss their preliminary results. The Santa Barbara's City Council did commission a study on activation of the existing desalination works. Attached is an article on desalination from Southwest Hydrology.

RECOMMENDATION

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

ATTACHMENT

- ARTICLE ON DESALINATION

T:\BOARD MATTERS\BOARD MEETINGS\BOARD LETTER\BOARD LETTER 2008\SWP COMMITTEE\080908ITEM2.DOC

Pros and Cons of Desal Detailed

Desalination may soon live up to its original hype and become a viable part of the nation's water future, says a report from the National Research Council (NRC).

Because 97 percent of water on Earth is either seawater or brackish groundwater, desalination has the potential to greatly increase the amount of water usable for drinking and irrigation. However, the high energy costs of desalination—10 times the energy of traditional surface water treatment—and potential environmental impacts of the process have stymied the industry's growth.

Recent technological improvements have lowered the costs of desalination, while other schemes to augment water supply have only become more expensive. This has made desalination economically viable, although the report cites the need for more research to further lower costs and energy use.

Meanwhile, environmental concerns related to the process are far from resolved. Desalination may be no more harmful than, say, diverting water from sensitive ecosystems, the report said, but this is a prime area for research. So are the impacts of salt concentrate disposal in rivers and seas; the extent to which fish get trapped in intakes; and ecological monitoring related to the desalination plants themselves.

Regarding environmental issues related to energy use and greenhouse gas emissions, the report suggests that desalination plants use alternative energy sources such as the sun, wind, and tides. Most current desalination technologies use reverse osmosis, which forces water through a membrane to separate out the salts. Improving the permeability of the membrane or pretreating the water might also reduce energy use, but reductions are not likely to be more than 15 percent.

Other research should be devoted to finding cheaper, environmentally friendly ways to dispose of the brine and further the development of thermal desalination—a technique using low-grade, leftover industrial heat that has potential to lower energy use even more.

Desalination currently generates 0.4 percent of the water used in the United States, representing 40 percent growth in the industry from 2000 to 2005. The NRC report recommends that the White House Office of Science and Technology Policy coordinate the research, with $25 million per year in funding plus additional contributions by the private sector, which has been funding the majority of the nation's desalination research.

Despite the ambitious research plan and positive outlook, the report notes that water conservation and transfers are likely to remain cheaper water resource options.

"Desalination: A National Perspective" is available at www.nap.edu.

TO: COMMITTEE MEMBERS

FROM: BRUCE BUEL

DATE: Sept. 4, 2008

AGENDA ITEM 3
SEPT. 8, 2008

REVIEW DRAFT PRESSURE REDUCTION TECHNICAL MEMORANDUM

ITEM

Review draft System Pressure Reduction Study [Forward Recommendations to Board].

BACKGROUND

Attached is Boyle's draft Technical Memorandum No. 9 regarding options to reduce customer water pressures in the Southern portion of the District. The TM evaluates four options and compares those options using pressure and fire flows as measures of performance. Boyle is recommending Option 4, which protects the widest area at the same time it eliminates pressure reduction valves to individual residences.

Mike Nunley from Boyle is scheduled to present the study and to answer questions at the meeting.

RECOMMENDATION

Staff recommends that the Committee hear Mr. Nunley's presentation and formulate a recommendation to forward to the Board.

ATTACHMENT (NONE)

T:\BOARD MATTERS\BOARD MEETINGS\BOARD LETTER\BOARD LETTER 2008\SWP COMMITTEE\080908ITEM3.DOC

Boyle Engineering
1194 Pacific Street, Suite 204, San Luis Obispo, CA 93401
T 805.542.9840 F 805.542.9990 www.boyle.aecom.com

Memorandum

Date:	August 26, 2008
To:	Peter Sevcik, PE
From:	Josh Reynolds, PE
	Eileen Shields, EIT
Subject:	NCSD Waterline Intertie Project Technical Memorandum No. 9: System Pressure Reduction Study

Introduction

The Waterline Intertie Project Preliminary Engineering Memorandum (PEM) (Boyle, May 2008) evaluates project alternatives for the transport and delivery of supplemental water from the City of Santa Maria to Nipomo's water distribution system. Two improvement phases were developed based on supplemental water inflow rates. Phase I improvements provide capacity for 1,300 gpm, and Phase II improvements were developed for 1,860 gpm (the maximum allowance from the City of Santa Maria per the 2005 Memo of Understanding).

Figure 1 displays the recommended Phase I and Phase II improvements as presented in the PEM. These improvements will afford the system capacity to handle 1,860 gpm. However, the introduction of supplemental water at the recommended point-of-connection (POC) (Orchard Road and Southland Street) increases already high pressures in the area.

To improve capacity and reduce pressures in the NCSD system, the PEM recommends improvements including upgrading the following water lines to a 12-inch diameter line: Southland Street, Orchard Street from Southland to Division, and Frontage Road from Southland to Tefft. To isolate customers from increased pressures, pressure regulators on individual service connections in the southern portion of Nipomo's water distribution system (Area A) are also recommended. For the purposes of this memorandum, this set of recommended improvements will be referred to as Option 1 (Figure 2).

Alternative Improvement Plan for NCSD System

As requested, Boyle has performed a preliminary hydraulic analysis to investigate an alternative improvement approach for reducing pressures in Area A. A separate pressure zone was evaluated instead of individual pressure regulators on the Area A service connections and the pipeline improvements recommended in the PEM were reevaluated with the new pressure zone in place. The same NCSD WaterCAD model as used for the Preliminary Engineering Memorandum was utilized to

evaluate the feasibility of the new pressure zone. Two alternative boundaries for the pressure zone were developed and modeled separately as Option 2 and Option 3. Another alternative, Option 4, utilizes dedicated pipelines in addition to a new pressure zone.

Option 2. A parallel waterline along Orchard Road from Southland to Division Streets and four valves were added to the model to isolate Area B (Figure 3). An isolation valve was placed on Orchard and Southland to close the connection between the parallel and existing waterline. Two pressure reducing valve (PRV) stations were positioned: 1) on Frontage Road between Division Street and Martita Place, and 2) on the existing Orchard Road waterline between Story and Grande. Both PRV stations were set at a hydraulic grade of 520 ft (83 psi and 87 psi, respectively). A closed isolation valve was placed along the 6-inch waterline that runs across Belanger Dr. and Avenida Montecito Verde between Division and Story Streets.

Option 3. This option uses a parallel waterline along Orchard Road, running from Southland to Grande Avenue, with three PRV stations and three isolation valves to isolate Area C (Figure 4). The PRV stations were placed in the following locations: 1) on the existing Orchard Road waterline, north of Division Street 2) on Frontage Road South of Grande, and 3) on South Oakglen, between Darby Lane and Amado Street. The PRV stations were set to a hydraulic grade of 532 feet (78, 82, and 82 psi, respectively). Isolation valves were placed in the following positions: 1) at Orchard and Southland to close the connection between the parallel and existing waterline, 2) on Nopal Way, between Harrier Lane and Fir Place, and 3) on Avenida de Amigos.

Option 4. Option 4 utilizes the same improvements as Option 3, along with two 12-inch dedicated pipelines and a fourth PRV station (Figure 5). One dedicated 12-inch pipeline runs parallel to the existing waterline in Southland Street. The second 12-inch pipeline runs parallel to the existing Frontage Road waterline and ties in to the system at Grande Avenue. Both new pipelines were modeled to operate outside the new pressure zone (Area C). A PRV station was added between the existing and dedicated lines along Southland, between Drumm Lane and Honey Grove Lane. All PRV stations were modeled at a hydraulic grade setting of 532 feet (78, 82, 82, and 94 psi, respectively).

Model Conditions

All system improvement options were modeled under steady-state conditions with all wells off and tanks 75 % full. Two demand scenarios were run: average day demands[1] (2.67 mgd) for typical conditions, and 10 % of average day demands (0.27 mgd) to mimic low flow periods when pressures in the system are highest. Since NCSD system pressures are typically lower during times of higher demands, maximum and peak demand scenarios were not evaluated for this study. Based on recent correspondence between NCSD and the City of Santa Maria, a supplemental water inflow rate of 2,000-gpm was modeled. All Options were modeled with the existing water system infrastructure, except for the addition of the improvements discussed (i.e., no Master-planned improvements were added).

[1] Average day demands as defined in the Water and Sewer Master Plan Update (Cannon, December 2007).

Model Results

The improvement options were evaluated based on resultant pressures in the PRV Zone and near Joshua and Orchard which is where the supplemental water pipeline from the pump station would connect to the existing line in Orchard Road. Pressure at Joshua and Orchard is indicative of the pressure required at the Waterline Intertie Project pump station.

For Option 1, service-side pressures in Area A will be dictated by the settings on the individual service pressure regulators. Options 2, 3, and 4 provide the advantage of also protecting pipelines within the separate pressure zones from elevated pressures.

Results indicate that Options 2 and 3 required higher pressures at Joshua and Orchard to deliver flow into the system than required for Option 1. The existing 12-inch pipeline - along Orchard Road between Joshua and Southland Streets - was designed to be constructed with Pressure Class 150 AWWA C900 PVC pipe. Option 2 increased the required pressure at Joshua and Orchard from 146 to 153 psi. In addition, Option 2 increased pressures in the residential area between Division Street, Jessica Place, and Beverly Drive by approximately 10 psi to levels between 96 and 105 psi. Option 3 reduced the pressures in the residential area, but required 160 psi at Joshua and Orchard to deliver flow into the system. The additional dedicated pipelines in Option 4 cause a reduction in pressure at Joshua and Orchard to 144 psi, near what is required in Option 1, and maintained residential area pressures to levels near or below existing. Table 1 summarizes the model results for each improvement scenario under ADD conditions and Table 2 summarizes results for 10 % ADD conditions.

Table 1. Comparison of Pressure Ranges (psi)
for NCSD Water System Improvement Options under existing ADD

	Existing (Static Pressures)	Option 1 Individual pressure regulators	Option 2 PRV Zone B	Option 3 PRV Zone C	Option 4 PRV Zone C + dedicated lines & 4th sta.
Area A	93 – 100	98 – 107	–	–	–
Area B	85 – 100	–	77 – 91	–	–
Area C	64 – 100	–	–	61 – 97	61 – 97
Joshua & Orchard	105	146	153	160	144

Notes:

Option 1: Service-side pressures would be dictated by individual pressure regulator settings.
Option 2: Pressures calculated with PRVs set at hydraulic grade of 520 ft (83 & 87 psi).
Option 3: Pressures calculated with PRVs set at hydraulic grade of 532 ft (78, 82, & 82 psi).
Option 4: Pressures calculated with PRVs set at hydraulic grade of 532 ft (78, 82, 82, & 94 psi).

Table 2. Comparison of Pressure Ranges (psi)
for NCSD Water System Improvement Options under 10% existing ADD

	Existing Static Pressures	Option 1 Individual pressure regulators	Option 2 PRV Zone B	Option 3 PRV Zone C	Option 4 PRV Zone C + dedicated lines
Area A	96 – 103	100 – 109	–	–	–
Area B	88 – 103	–	77 – 91	–	–
Area C	66 – 103	–	–	61 – 98	61 – 98
Joshua & Orchard	107	148	158	165	150

Notes:

Option 1: Service-side pressures would be dictated by individual pressure regulator settings.
Option 2: Pressures calculated with PRVs set at hydraulic grade of 520 ft (83 & 87 psi).
Option 3: Pressures calculated with PRVs set at hydraulic grade of 532 ft (78, 82, & 82 psi).
Option 4: Pressures calculated with PRVs set at hydraulic grade of 532 ft (78, 82, 82, & 94 psi).

Fire Flow Analysis

A fire flow analysis was run to compare the fire flow availability under the preferred improvement options (Option 1 and Option 4) with existing fire flow availability and with the availability under improvements as recommended in the Water and Sewer Master Plan Update (Cannon Associates, December 2007). The analysis was conducted on the nodes contained in the new pressure zone created in Option 4 (Area C). The minimum required fire flow for the area is 1,500 gpm. A minimum residual pressure criterion of 20 psi was applied to the entire system except the nodes immediately adjacent to the Quad Tanks. Each scenario was modeled under steady-state conditions with maximum day demands[2] (4.53 mgd), all wells off, no supplemental water inflow, and tanks 75% full.

Fire Flow Results

The fire flow analysis indicated that during existing conditions 7 out of the 128 nodes tested in Area C fail to meet fire flow criteria. Under the Master-planned improvement scenario, one node failed to meet fire flow criteria. Under Option 1, three nodes failed and under Option 4, five nodes failed. These results are summarized in Table 3, below. All nodes failing fire flow criteria are at dead-ends.

[2] Maximum day demands as defined in the Water and Sewer Master Plan Update (Cannon, December 2007).

Table 3. Summary of Fire Flow Availability for Nodes Failing to meet Fire Flow Criteria

Nodes with fire flow availability < 1500 gpm		Fire Flow Availability (gpm)			
		NCSD Water Distribution System Improvement Scenario			
WaterCAD Node Label	Location	Existing System	Master-Planned	Option 1	Option 4
J-610	January St & Juno Ct	**1,497**	1,637	1,521	**1,485**
J-1325	Ashland Ln	**1,348**	1,646	1,628	**1,451**
J-1586	End of Drumm Ln	**1,446**	1,966	1,992	1,791
J-4457	End of Juno Ct	**1,383**	1,503	**1,403**	**1,373**
J-5200	Division St @ January St	**1,391**	1,508	**1,411**	**1,381**
J-5277	End of Ashland Ln	**1,252**	**1,484**	**1,464**	**1,333**
J-6138	End of Widow Ln	**1,488**	2,059	2,076	1,833

Conclusions

The introduction of supplemental water to the southern region of NCSD water distribution system increases already high pressures. One mitigation option is to add pressure regulators to approximately 200 individual services, as recommended in the Preliminary Engineering Memorandum. Another option is to isolate the high pressure area using valves and create a separate pressure zone. Though Option 2 effectively reduces pressures within the separate pressure zone, it causes an increase in pressures (to levels greater than 100 psi) between the northern zone boundary and Division Street. Therefore Option 3 was investigated as an expanded pressure zone to include Area B and the influenced area to the north. Because Options 2 and 3 require higher pump discharge pressures at Orchard and Joshua, the fourth Option included two dedicated waterlines along Southland and Frontage and an additional PRV station.

The modeling indicates that a separate pressure zone is feasible and has the potential to protect infrastructure from increased pressures due to the inflow of supplemental water at Orchard and Southland. Under Option 1, the pressure at Orchard and Joshua ranges from 146 - 148 (when

modeled with conditions as described). Pressures at Orchard and Joshua are increased with Options 2 and 3 (153 – 165 psi), causing increased electricity requirements at the pump station and high pressures for the existing Orchard Road waterline, which is rated for 150 psi[3]. The improvements modeled as Option 4 reduce pressures at Orchard and Joshua (144 – 150 psi) and protect services from high pressures, similar to the Option 1 improvements recommended in the PEM. However, the fire flow analysis indicates a higher number of nodes failing fire flow criteria under Option 4 improvements, than under Master-planned or Option 1 improvements. Five nodes under Option 4 have less than 1,500 gpm fire flow available, as opposed to three nodes under Option 1, or one node under master-planned improvements. All of these nodes are located at the ends of 6-inch water lines. When 8-inch pipe is added to the model to loop these dead ends, results indicate that all nodes in Area C meet minimum fire flow criteria for Option 1 and Option 4. Less than 800-feet total of 8-inch pipe to loop these dead ends would be required, but is not included in the cost opinion. An opinion of probable construction cost for improvements under Options 1 and 4 is summarized in Table 4, attached. Life-cycle costs would be similar because of the similar pressure conditions experienced at the pump station under both Options (Tables 1 and 2).

Attachments: Figure 1. Project Components and Phasing (Preliminary Engineering Memorandum)

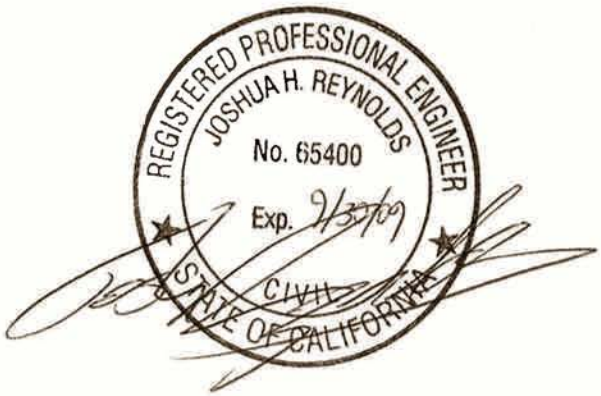
Figure 2. NCSD System Improvements Option 1

Figure 3. NCSD System Improvements Option 2

Figure 4. NCSD System Improvements Option 3

Figure 5. NCSD System Improvements Option 4

Table 4. Opinion of Probable Construction Cost



[3] The Orchard Road waterline pressure rating is based on Record Drawings for Orchard Road and Santa Maria Vista Waterlines (12-12-05). The pressure rating should be reevaluated, and perhaps tested, to ensure the Orchard Road waterline can sustain increased pressures from the supplemental water.

DWG: W:\Nipomo CSD (19996)\Waterline Intertie Project 19996.12\Phase 4 – UPDATE to Draft Prelim Engr Memo\CAD\Exhibits\Figure ES-1-rev.dwg USER: eshields
DATE: Aug 26, 2008 3:08pm XREFS: IMAGES: img20600389 Aerial Photo-LITE-SMALL.jpg

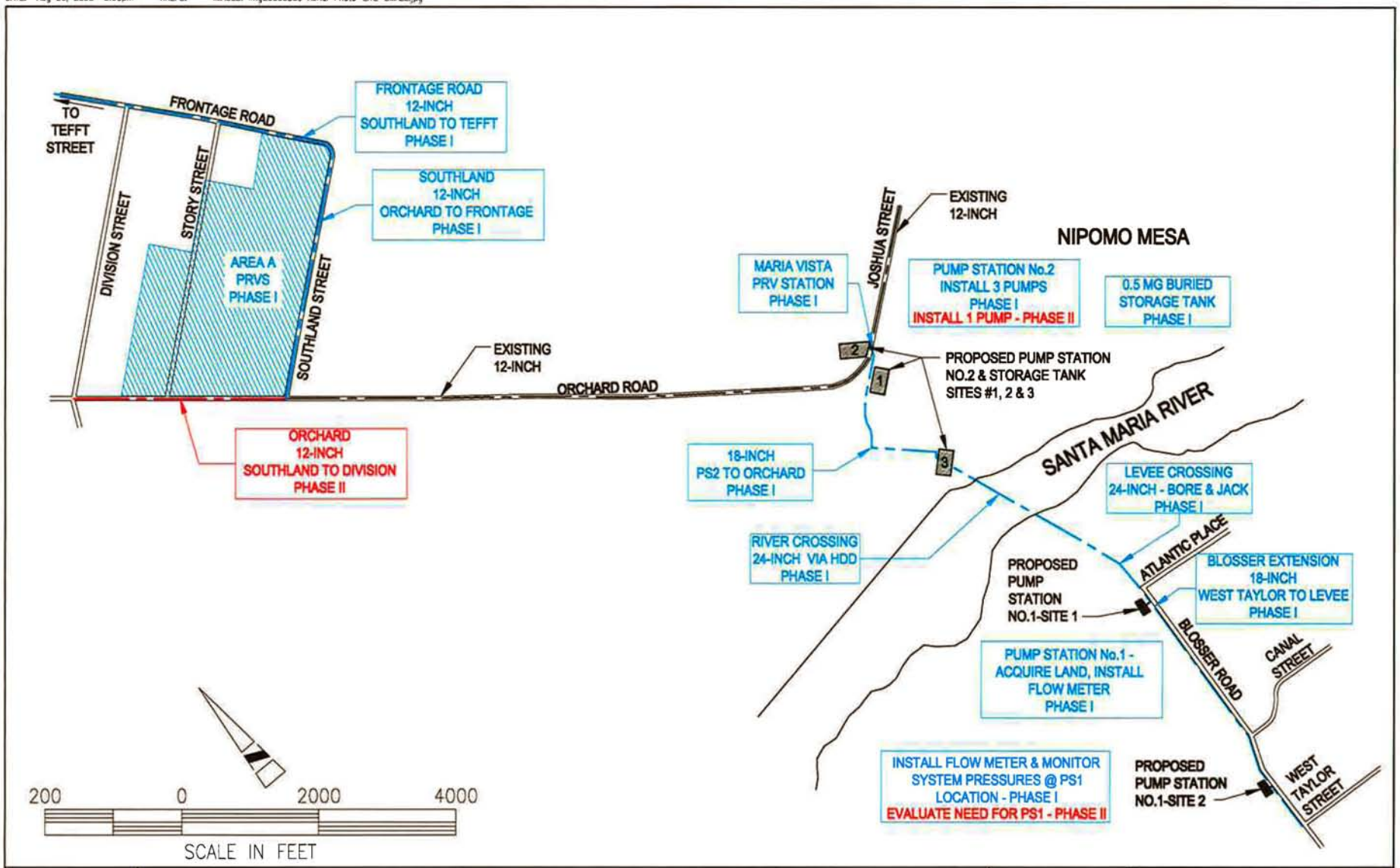


FIGURE		BEC PROJECT NO.	
1	**NCSD WATERLINE INTERTIE**	19996.12	BOYLE ENGINEERING CORPORATION
	PROJECT COMPONENTS AND PHASING		

Figure 2: NCSD System Improvements Option 1

Figure 3: NCSD System Improvements Option 2

Figure 4: NCSD System Improvements Option 3

Figure 5: NCSD System Improvements Option 4

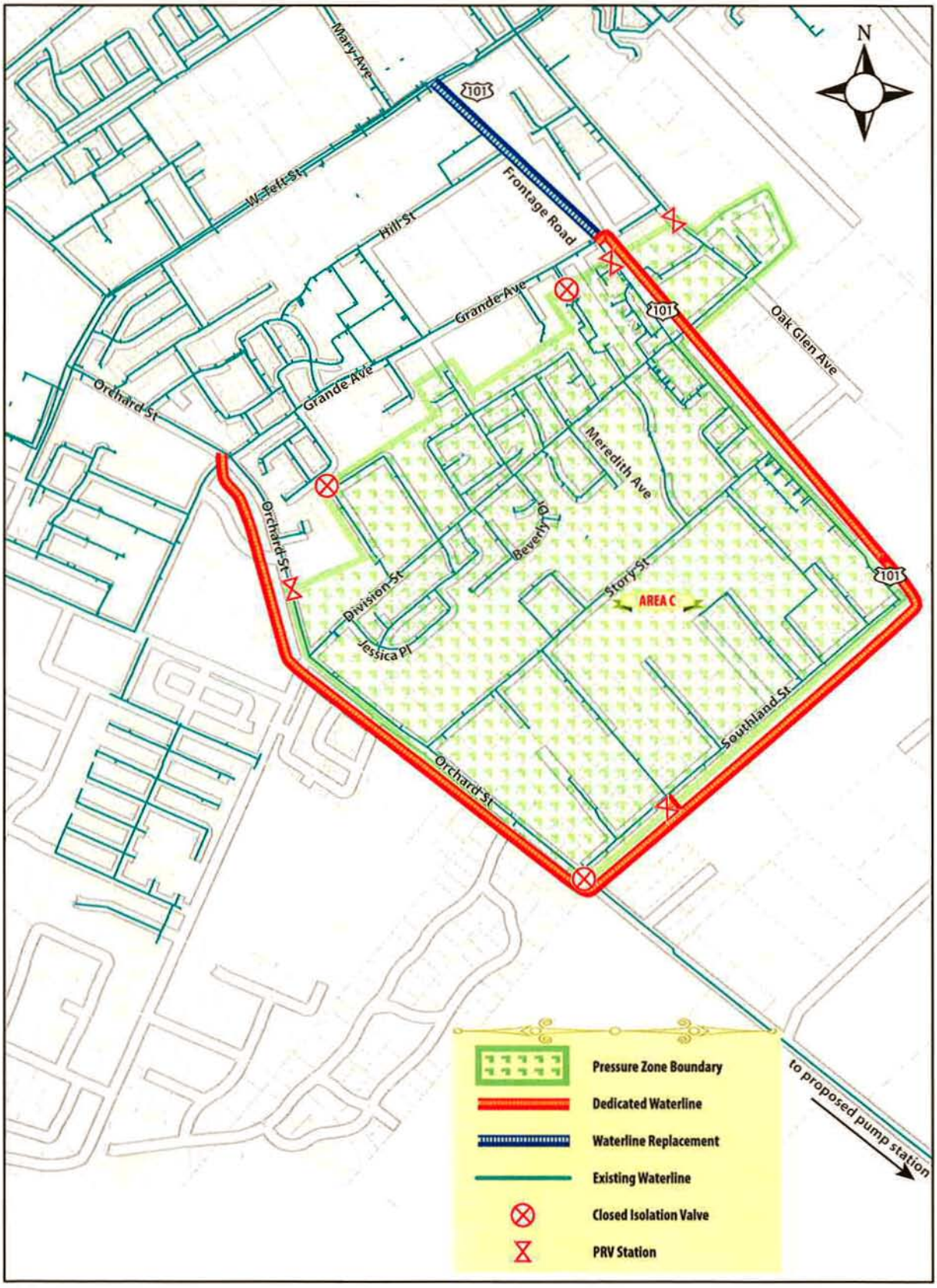


Table 4
Nipomo Community Services District
WATERLINE INTERTIE PROJECT
NCSD Water Distribution System Improvements
OPINION OF PROBABLE CONSTRUCTION COST

Item	Description	Quantity	Unit	Unit Price	Amount
Supplemental Inflow Rate = 2,000 gpm					
Option 1. As recommended in Preliminary Engineering Memorandum (Boyle, May 2008)					
1	Pressure regulators on individual services in Area A	200	EA	$200	$40,000
2	Southland St Incremental Upgrade 10" to 12"	3900	LF	$40	$156,000
3	Orchard Rd 12" Upgrade (Southland to Division)	3200	LF	$145	$464,000
4	Traffic Control for Orchard Rd	3200	LF	$7	$22,400
5	AC Pavement Overlay on Orchard Rd (assume 12-ft lane)	4267	YD^2	$36	$153,600
	Option 1 Subtotal				$836,000
	Master Planned Improvements *				
7	Southland St 10" Upgrade (Frontage to Orchard) *	3900	LF	$160	$624,000
8	Frontage Rd 12" Upgrade (Southland to Tefft) *	6470	LF	$200	$1,294,000
	Master planned Improvements Subtotal				$1,918,000
	Option 1 Adjusted Subtotal				$2,754,000
	Contingency	30%			$826,200
	Option 1 Total				$3,580,200

Option 4. PRV Zone					
1	Parallel Orchard Rd waterline 12" (Southland to Grande)	5200	LF	$145	$754,000
2	Traffic Control	5200	LF	$7	$36,400
3	AC Pavement Overlay (assume 12-ft lane)	6933	YD^2	$36	$249,600
4	Parallel Southland St waterline 12"	3900	LF	$145	$565,500
5	Traffic Control	3900	LF	$7	$27,300
6	AC Pavement Overlay (assume 12-ft lane)	5200	YD^2	$36	$187,200
7	Parallel Frontage Rd waterline 12" (Southland to Grande)	4400	LF	$145	$638,000
8	Traffic Control	4400	LF	$7	$30,800
9	AC Pavement Overlay (assume 12-ft lane)	5867	YD^2	$36	$211,200
10	Pressure Reducing Valve Station to isolate zone	4	EA	$18,000	$72,000
11	Isolation Valves to isolate zone	3	EA	$4,000	$12,000
	Option 4 Subtotal				$2,784,000
	Contingency	30%			$835,200
	Option 4 Total				$3,619,200

Notes:

Engineering and administration costs not included

Mobilization costs not included

Pipeline to loop dead-end waterlines not included

Division Street upgrade (from Preliminary Engineering Memorandum) removed from Option 1, as determined already complete

* The Master Planned project costs presented in this table have been modified from the Master Plan and the Preliminary Engineering Memorandum to reflect Boyle's opinion of costs and to be consistent with the unit costs used in this comparative analysis. These unit costs include traffic control and pavement overlay for these Master Plan projects, whereas these items are separate in the other opinions.

TO: COMMITTEE MEMBERS

FROM: BRUCE BUEL BBB

DATE: Sept. 4, 2008

AGENDA ITEM
4
SEPT. 8, 2008

DISCUSS OPTIONS TO PAY FOR WIP DEBT SERVICE

ITEM

Discuss options to pay for WIP debt service [Forward Recommendations to Board].

BACKGROUND

Staff has assumed that the District would borrow the capital cost of constructing the WIP minus available reserves (accumulated Supplemental Water Capacity Charges and Replacement Fund). Attached is a spread sheet illustrating the probable range of the borrowing and the resultant annual debt service. Prior to awarding the contracts for construction of the works, NCSD must secure the funding to cover this annual debt service. As discussed in the 2006, White Paper on Funding, NCSD could use user fees, assessments/standby charges, special taxes or CFD taxes.

User Fees can be collected from existing customers, if there is not a majority protest amongst the property owners responsible for paying for the User Fee. If the merger between Blacklake and Town has not occurred at the time of the protest proceeding, separate proceedings would be required for each division. This process does require the preparation of a rate study. Although vacant property owners can buy-in at the time of development, it is the existing customers that must be obligated to pay for the annual debt service.

Assessments can be collected from all properties within the District within a reasonable distance from existing main and Standby Charges can be collected from the remaining parcels if the majority of property owners that participate return ballots in favor of forming the assessment district. There would only be one proceeding for the entire District. This process requires the preparation of an assessment role and an Engineer's Report. This option has the virtue of spreading the annual debt service cost to all properties in the District and it is the most secure of any of the options resulting in a lower interest rate on the borrowing.

Special Taxes can be collected from all properties in the District if 2/3rds of the registered voters in the District support the Special Tax measure on the ballot. This process requires a certified election of all registered voters in the District. This option has the virtue of spreading the annual debt service cost to all properties in the District.

Although CFD funding is technically possible, the market will not support it at this time.

Staff believes that the assessment option is the most cost effective and secure.

RECOMMENDATION

Staff recommends that the Committee discuss this recommendation and formulate a recommendation to the Board.

ATTACHMENT

* WIP FUNDING SPREADSHEET

T:\BOARD MATTERS\BOARD MEETINGS\BOARD LETTER\BOARD LETTER 2008\SWP COMMITTEE\080908ITEM4.DOC

SUPPLEMENTAL WATER PROJECT COST ESTIMATES				8/12/2008
PROJECT	**assumption**	**FAVORABLE**	**assumption**	**UNFAVORABLE**
CAPITAL				
TOTAL CAPITAL COST		$18,000,000		$20,000,000
RESERVES		$8,000,000		$6,000,000
NET CAPITAL COST (Total - Reserves)		$10,000,000		$14,000,000
NET DEBT SERVICE/MONTH	Int @ 5%	$72,396	Int @ 6%	$109,839
OTHERS SHARE DEBT SERVICE/Mo	At 33%	$24,132	At 20%	$21,968
CAPACITY FEE SHARE DS/Mo	At 33%	$24,132	At 20%	$21,968
NCSD CUSTOMER SHARE DS/Mo		$24,132		$65,903
NET CAP COST/MO/CUSTOMER	4,500 Meters	$5.36	4,300 Meters	$15.33
OPERATIONS & MAINTENANCE				
O&M COST/MO	At 2,000 AFY	$225,000	At 2,500 AFY	$279,500
OTHERS SHARE O&M COST/MO	At 33%	$75,000	At 20%	$55,900
CAPACITY FEE SHARE COST/MO	At 33%	$75,000	At 20%	$55,900
NCSD CUSTOMER SHARE COST/MO		$75,000		$167,700
NET O&M COST/MO/CUSTOMER	4,500 Meters	$16.67	4,300 Meters	$39.00
CAPITAL & O&M				
NET TOTAL COST/MO/CUSTOMER	4,500 Meters	$22.03	4,300 Meters	$54.33