TO: BOARD OF DIRECTORS

FROM: BRUCE BUEL

DATE: JUNE 15, 2007

AGENDA ITEM D

JUNE 20, 2007

EDIT WATER PROJECTS PRIORITY LISTING

ITEM

Receive recommended Water & Sewer Master Plan project priorities listings from Cannon and edit listings [EDIT LISTINGS & SET AUGUST 15 WORKSHOP].

BACKGROUND

Attached from Cannon Associates is a cover letter, a listing of water projects and plan sheet assuming constant flow, and a listing of water projects and plan sheet assuming variable flow. The constant flow listing/plan is based on the assumption that the supplemental water feed is provided at a fixed rate similar to that described in the Santa Maria Waterline Intertie Project MOU. The variable flow listing/plan is based on the assumption that either the feed or NCSD's plumbing allow for significant modulation of the feed volume to match system demand.

Larry Kraemer and Jeff Spannbauer from Cannon will present these materials to your Honorable Board and answer questions.

RECOMMENDATION

The intent of this item is to provide sufficient information to your Honorable Board so that you can discuss the options presented and edit the proposed listings of projects. If your Honorable Board can reach a consensus on selection of projects at this meeting, then staff recommends that your Honorable Board set a follow-up workshop for Wednesday August 15, 2007 to discuss the Draft Master Plan including the sewer projects discussed on May 16, 2007, the water projects discussed at this meeting, and the balance of the Water and Sewer Master Plan chapters.

ATTACHMENTS

- Cannon Cover Letter
- Constant Flow Projects Listing
- Constant Flow Plan Sheet
- Variable Flow Projects Listing
- Variable Flow Plan Sheet

Cannon ASSOCIATES

ENGINEERS
PLANNERS
SURVEYORS

Document Transmittal

June 13, 2007

To: Bruce Buel
Nipomo Community Services District

From: Larry Kraemer, PE
Jeff Spannbauer, PE

Subject: Proposed Water System Improvement Projects

A computer model of the water system was developed to analyze existing supply and demand conditions, and to determine needs for supplemental supply under both existing and anticipated future demand scenarios.

To create the model, a base map was first prepared in AutoCAD. GIS data provided by NCSD was used to create the base map showing parcel lines, zoning, contours, and the existing water system itself. Separate NCSD-provided maps were used to delineate service area boundaries.

The model was based on water usage projections discussed in Tech Memo 1. Scenario 1 (see Tech Memo 1) was used as the basis for analysis of future conditions. Current observed conditions were used to calibrate the model, and to confirm appropriate duty factors for analysis of future conditions. Field measurements were taken as well, to determine physical properties and flows for model calibration.

A version of the model was also developed with the assumption that the District would be receiving supplemental water from an outside water source, as mandated. Two supply conditions were considered: variable flow and constant (or fixed) flow. Variable flow supply assumes that the District can specify the amount of water needed on a limited term basis, such as daily or weekly, so the quantity of supplemental water purchased can be adjusted to meet District needs. Constant flow assumes that the same amount of supplemental water is delivered to the District each day, regardless of need. These two supplemental supply conditions were considered for both existing and future conditions.

The water system was analyzed to review system design requirements, storage requirements, and supply requirements. District system design criteria specify that pipeline velocities must remain less than five feet per second, or that residual pressure remains at or above 20 psi. Tank storage requirements require that sufficient volume be maintained for fire flow storage, emergency storage of at least 50 gallons per day per capita, and equalization storage to maintain availability of water during peak conditions. District supply requirements specify that the supply system be capable of replenishing maximum daily demand draw on the system within 24 hours.

The model was run to determine pressures at nodes and velocities in pipelines under both maximum daily demand plus fire flow conditions and peak hour demand conditions. Storage

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calculations were performed using the District's historical demand data and future usage projections. SCADA data on the existing system was reviewed to confirm adequacy of current supply; and calculations were performed to analyze the adequacy of system supply with supplemental water for existing and future conditions. If model results or calculations indicated failure of any of the District requirements for system design, storage or supply, then recommendations were determined to correct the problem.

The following scenarios were analyzed: existing conditions with existing supply; existing condition with supplemental water supply; and, future conditions with supplemental water supply. For each scenario, the model was run to evaluate flow bottlenecks and dead end mains, and production deficiencies, and to identify appropriate solutions. Anticipated future improvements were built into the model to accommodate new demands, and additional projects were identified to address current and future needs. The attached "Recommended Model System Improvements" draft figures show the recommended water systems improvements modification which were considered.

Other water system projects considered include relocation of water lines to accommodate planned County drainage structure improvements, conversion of the Eureka well from electric power to natural gas, improvements to reservoir mixing, and general system backbone improvements and maintenance.

Two "Recommended Water System Improvements" draft tables are attached: one for constant flow and one for variable flow. Both tables show the recommended water system projects and estimated costs for each project. Recommended priorities are indicated as well. These project lists are broken down by projects designed to meet existing needs, those designed to meet existing needs with supplemental water supply, and those designed to meet future needs.

Projects and priorities will be discussed in more detail in subsequent technical memoranda/master plan report after obtaining feedback from NCSD Board and Staff.

RECOMMENDED WATER SYSTEM IMPROVEMENTS - CONSTANT FLOW

IMPROVEMENTS TO MEET EXISTING NEEDS

	Diam. (in)	Unit	Quantity	Unit Cost[1]	Total Cost[2]
PRIORITY 1 - ELIMINATING EXISTING BOTTLENECKS					
Camino Caballo - Blue Gum west to existing 16" main	16	LF	1,325	$200	$270,000
Willow Road - Pomeroy west to existing 14" main	14	LF	1,500	$180	$270,000
Grande from Cyclone to Orchard	8	LF	660	$140	$93,000
Frontage from Story to Banyon	8	LF	290	$140	$41,000
Frontage from Hill to Grande	8	LF	1,180	$140	$170,000
				Subtotal	*$850,000*
PRIORITY 1 - ELIMINATING EXISTING BOTTLENECKS - BLACK LAKE					
Misty Glenn Place - Willow Road north to existing 8" main	8	LF	85	$140	$12,000
				Subtotal:	*$12,000*
PRIORITY 1 - SLO COUNTY DRAINAGE PROJECT - RELOCATING WATER MAINS					
Tefft Street Box Culvert Improvements	10	LF	150	$160	$24,000
Thompson Avenue Arch Culvert Improvements	8	LF	150	$140	$21,000
Mallagh Arch Culvert Improvements	8	LF	150	$140	$21,000
Mallagh Box Culvert Improvements	8	LF	150	$140	$21,000
Burton Street Box Culvert Improvements	8	LF	150	$140	$21,000
				Subtotal	*$110,000*
PRIORITY 2 - OPERATIONAL IMPROVEMENTS					
Standpipe Mixing		LS	1	$200,000	$200,000
Eureka Well - Conversion from Electricity to Natural Gas		LS	1	$70,000	$70,000
				Subtotal	*$270,000*
PRIORITY 2 - LOOPING DEAD-END MAINS					
Brytec Ct - extend 8" dead-end to Division	8	LF	20	$140	$2,800
N. Blume - extend 8" dead-end to Grande	8	LF	370	$140	$52,000
N. Crosby - extend 8" dead-end to Camino Caballo	8	LF	90	$140	$13,000
Eve Street - from Burton to Thompson	8	LF	440	$140	$62,000
Colt Lane from Glory to Amada	8	LF	1,800	$140	$260,000
Grove from Oak Glen to Colt	8	LF	650	$140	$91,000
Branch from Wilson to Carrillo	8	LF	730	$140	$110,000
Camino Caballo from Lindon to Frontage	8	LF	500	$140	$70,000
				Subtotal	*$670,000*
PRIORITY 3 - PIPE REPLACEMENT PROGRAM					
Replace 5% of Valves per year (1840 total)		EA	92	$2,000	$190,000
Replace 5% of Fire Hydrants per year (660 total)		EA	33	$4,500	$150,000
Replace 5% of Air/Vac's per year (205 total)		EA	11	$2,000	$22,000
Replace 10% of Water Meters per year (3000 total)		EA	300	$1,250	$380,000
				Subtotal:	*$750,000*
PRIORITY 3 - SUMMIT STATION PRESSURE/FIRE PROTECTION UPGRADES					
Hydro-pneumatic Tanks, Booster Pump Station, & Valving		LS	1	$500,000	$500,000
				Subtotal:	*$500,000*
			TOTAL COSTS TO MEET EXISTING NEEDS:		***$3,200,000***

NOTES:
1. Cost Estimate derived from adjusting 2001 Master Plan Estimate April 2001 cost to May 2007 ENR CCI.
2. Costs rounded to 2-significant figures.

IMPROVEMENTS TO MEET SUPPLEMENTAL WATER NEEDS - CONSTANT FLOW						
DISTRIBUTION SYSTEM	**Diam. (in)**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost[2]**	
PRIORITY 1 - BACKBONE IMPROVEMENTS TO ACCOMMODATE SUPPLEMENTAL WATER						
North Dana Foothill Road - Quad Tanks to Mehlshau	24	LF	4,900	$260	$1,300,000	
Mehlshau - North Dana Foothill Road to Thompson	24	LF	5,650	$260	$1,500,000	
Thompson - Mehlshau to High School	14	LF	900	$180	$170,000	
Mehlshau - Thompson to Oak Glen	20	LF	2,800	$230	$650,000	
Freeway Crossing - Oak Glen to Frontage at Mehlshau	20	LF	250	$230	$58,000	
S. Oak Glen - Tefft to Amado	14	LF	3,050	$180	$550,000	
Amado - S. Oak Glen to Highway 101	14	LF	650	$180	$120,000	
Freeway Crossing - Oak Glen to Frontage at Amado	14	LF	250	$180	$45,000	
N. Frontage - Hwy 101 Crossing to Lindon	16	LF	1,250	$200	$250,000	
N. Frontage - Lindon to Juniper	12	LF	1,600	$170	$280,000	
Calle Fresa - Pomeroy to Camino Caballo	10	LF	1,200	$160	$200,000	
Orchard - Tefft to Theodora	12	LF	850	$170	$150,000	
S. Frontage - Tefft to Southland	12	LF	6,400	$170	$1,100,000	
				Subtotal	*$6,400,000*	
STORAGE (depends on supplemental water supply)						
PRIORITY 1 - FIXED FLOW RATE SUPPLEMENTAL WATER SUPPLY EQUALIZATION STORAGE						
Tank Facility - 1MG		LS	1	$1,000,000	*$1,000,000*	
Land for 4MG Tank Site (2-acres)					*TBD*	
				Subtotal	*$1,000,000*	
SUPPLY (To be determined)						
PRIORITY 1 - SUPPLIMENTAL WATER FILL LINES TO THE QUAD TANKS						
Option 1 - 18" Fill line north of Tefft	18	LF	37,000	$215	*$8,000,000*	
Option 2 - 18" Fill line south of Tefft	18	LF	31,000	$215	*$6,700,000*	
Booster Station		LS	1	$750,000	*$750,000*	
				Subtotal	*$8,750,000*	
				TOTAL COST TO MEET SUPPLEMENTAL WATER NEEDS	***$16,150,000***	

NOTES:
1. Cost Estimate derived from adjusting 2001 Master Plan Estimate April 2001 cost to May 2007 ENR CCI.
2. Costs rounded to 2-significant figures.

IMPROVEMENTS TO MEET FUTURE DEMAND						
DISTRIBUTION SYSTEM	**Diam. (in)**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost[2]**	
PRIORITY 1 - BACKBONE IMPROVEMENTS TO ACCOMMODATE FUTURE GROWTH						
N. Frontage - from Hwy 101 Crossing to Future Road	12	LF	8,100	$170	$1,400,000	
N. Frontage - from Future Road to Summit Station	10	LF	1,100	$160	$180,000	
Willow Extension - N. Frontage to Hetrick	12	LF	4,300	$170	$740,000	
Willow Extension - Hetrick to Pomeroy	16	LF	3,200	$200	$640,000	
Juniper - Frontage to Mary	8	LF	600	$140	$84,000	
Future Road - N. Frontage to Pomeroy	12	LF	6,200	$170	$1,100,000	
Pomeroy - Willow to Future Road	12	LF	3,500	$170	$600,000	
Pomeroy - Future Road to Summit Station	10	LF	2,050	$160	$330,000	
Mesa - Charro to Viva	10	LF	6,800	$160	$1,100,000	
Viva - Mesa to Camino Caballo	10	LF	2,650	$160	$430,000	
Evergreen - Dead End to Mesa	8	LF	1,350	$140	$190,000	
Orchard - Southland to Joshua	12	LF	8,500	$170	$1,500,000	
Joshua - Orchard to S. Frontage	12	LF	3,350	$170	$570,000	
S. Frontage - Southland to Joshua	12	LF	8,600	$170	$1,500,000	
Hutton - Joshua to Cuyama	12	LF	6,300	$170	$1,100,000	
Southland - Frontage to Orchard	10	LF	3,900	$160	$630,000	
				Subtotal	*$13,000,000*	
PRIORITY 1 - ELIMINATING BOTTLENECKS - BLACK LAKE						
Augusta Drive - extend 8" to future line in Pomeroy	8	LF	20	$140	$2,800	
				Subtotal:	*$2,800*	
PRIORITY 1 - FIXED FLOW RATE SUPPLEMENTAL WATER SUPPLY EQUALIZATION STORAGE						
Tank Facility - 3MG		LS	1	$3,000,000	$3,000,000	
				Subtotal:	*$3,000,000*	
PRIORITY 2 - PROPOSED LOOPS						
Widow Lane / Twilight - extend 8" to loop dead-ends	8	LF	1260	$140	$180,000	
Tanis - extend 6" dead-end to Nellie	8	LF	500	$140	$70,000	
Spruce - extend 6" dead-end to Nellie	8	LF	325	$140	$46,000	
Bristlecone - extend 6" dead-end to Nellie	8	LF	285	$140	$40,000	
Terrace - extend 6" dead-end to Souza	8	LF	1850	$140	$260,000	
Souza - Terrace to Oak Glen	8	LF	300	$140	$42,000	
Glenhaven - San Ysidro to Amber	8	LF	820	$140	$120,000	
Hunter Ridge - Pomeroy to Glenhaven	8	LF	1050	$140	$150,000	
Future Road - Glenhaven to Pomeroy (between Jennie and Ten Oaks)	8	LF	1050	$140	$150,000	
Future Road - Honey Grove to Drum	8	LF	650	$140	$91,000	
				Subtotal	*$1,200,000*	
				TOTAL COST TO MEET FUTURE NEEDS:	***$18,000,000***	
				TOTAL COST OF IMPROVEMENTS:	***$37,350,000***	

NOTES:
1. Cost Estimate derived from adjusting 2001 Master Plan Estimate April 2001 cost to May 2007 ENR CCI.
2. Costs rounded to 2-significant figures.

SUMMIT STATION

BLACK LAKE

SUMMIT STATION

LEGEND

- NEW LINE IN SUMMIT PRESSURE ZONE
- EXISTING LINE IN SUMMIT PRESSURE ZONE
- NEW LINE IN TOWN PRESSURE ZONE
- EXISTING LINE IN TOWN PRESSURE ZONE
- FUTURE DISTRICT BOUNDARY
- EXISTING PARCEL LINE
- NEW PRESSURE REDUCING-SUSTAINING VALVE (PRV/PSV)
- NEW SHEAR VALVE
- HYDROPNEUMATIC TANK
- BOOSTER PUMP (NATURAL GAS POWER)

LEGEND

- IMPROVEMENTS TO MEET EXISTING DEMAND
- IMPROVEMENTS TO MEET FUTURE DEMAND
- FUTURE WATER SUPPLY LINE ALTERNATIVES
- IMPROVEMENTS TO MEET EXISTING DEMAND WITH SUPPLEMENTAL WATER
- COUNTY DRAINAGE IMPROVEMENT PROJECT LOCATION
- FUTURE DISTRICT BOUNDARY
- EXISTING WATER LINE
- EXISTING PARCEL LINE
- EXISTING CONTOURS
- EXISTING CREEK
- EXISTING WELL
- EXISTING STORAGE RESERVOIR

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2007 WATER AND SEWER MASTER PLAN

FIGURE X-X

RECOMMENDED WATER SYSTEM IMPROVEMENTS – CONSTANT FLOW

MARCH 2007

BOUNDARY DISCLAIMER

THIS SURVEY WAS COMPILED FOR MASTER PLANNING PURPOSES ONLY. THE BOUNDARY INFORMATION SHOWN HEREON IS INTENDED FOR ORIENTATION ONLY AND SUCH IS NOT INFERRED OR IMPLIED TO BE A BOUNDARY SURVEY.

DRAFT

RECOMMENDED WATER SYSTEM IMPROVEMENTS - VARIABLE FLOW

IMPROVEMENTS TO MEET EXISTING NEEDS

	Diam. (in)	Unit	Quantity	Unit Cost[1]	Total Cost[2]
PRIORITY 1 - ELIMINATING EXISTING BOTTLENECKS					
Camino Caballo - Blue Gum west to existing 16" main	16	LF	1,325	$200	$270,000
Willow Road - Pomeroy west to existing 14" main	14	LF	1,500	$180	$270,000
Grande from Cyclone to Orchard	8	LF	660	$140	$93,000
Frontage from Story to Banyon	8	LF	290	$140	$41,000
Frontage from Hill to Grande	8	LF	1,180	$140	$170,000
				Subtotal	*$850,000*
PRIORITY 1 - ELIMINATING EXISTING BOTTLENECKS - BLACK LAKE					
Misty Glenn Place - Willow Road north to existing 8" main	8	LF	85	$140	$12,000
				Subtotal:	*$12,000*
PRIORITY 1 - SLO COUNTY DRAINAGE PROJECT - RELOCATING WATER MAINS					
Tefft Street Box Culvert Improvements	10	LF	150	$160	$24,000
Thompson Avenue Arch Culvert Improvements	8	LF	150	$140	$21,000
Mallagh Arch Culvert Improvements	8	LF	150	$140	$21,000
Mallagh Box Culvert Improvements	8	LF	150	$140	$21,000
Burton Street Box Culvert Improvements	8	LF	150	$140	$21,000
				Subtotal	*$110,000*
PRIORITY 2 - OPERATIONAL IMPROVEMENTS					
Standpipe Mixing		LS	1	$200,000	$200,000
Eureka Well - Conversion from Electricity to Natural Gas		LS	1	$70,000	$70,000
				Subtotal	*$270,000*
PRIORITY 2 - LOOPING DEAD-END MAINS					
Brytec Ct - extend 8" dead-end to Division	8	LF	20	$140	$2,800
N. Blume - extend 8" dead-end to Grande	8	LF	370	$140	$52,000
N. Crosby - extend 8" dead-end to Camino Caballo	8	LF	90	$140	$13,000
Eve Street - from Burton to Thompson	8	LF	440	$140	$62,000
Colt Lane from Glory to Amada	8	LF	1,800	$140	$260,000
Grove from Oak Glen to Colt	8	LF	650	$140	$91,000
Branch from Wilson to Carrillo	8	LF	730	$140	$110,000
Camino Caballo from Lindon to Frontage	8	LF	500	$140	$70,000
				Subtotal	*$670,000*
PRIORITY 3 - PIPE REPLACEMENT PROGRAM					
Replace 5% of Valves per year (1840 total)		EA	92	$2,000	$190,000
Replace 5% of Fire Hydrants per year (660 total)		EA	33	$4,500	$150,000
Replace 5% of Air/Vac's per year (205 total)		EA	11	$2,000	$22,000
Replace 10% of Water Meters per year (3000 total)		EA	300	$1,250	$380,000
				Subtotal:	*$750,000*
PRIORITY 3 - SUMMIT STATION PRESSURE/FIRE PROTECTION UPGRADES					
Hydro-pneumatic Tanks, Booster Pump Station, & Valving		LS	1	$500,000	$500,000
				Subtotal:	*$500,000*
			TOTAL COST TO MEET EXISTING NEEDS:		***$3,200,000***

NOTES:
1. Cost Estimate derived from adjusting 2001 Master Plan Estimate April 2001 cost to May 2007 ENR CCI.
2. Costs rounded to 2-significant figures.

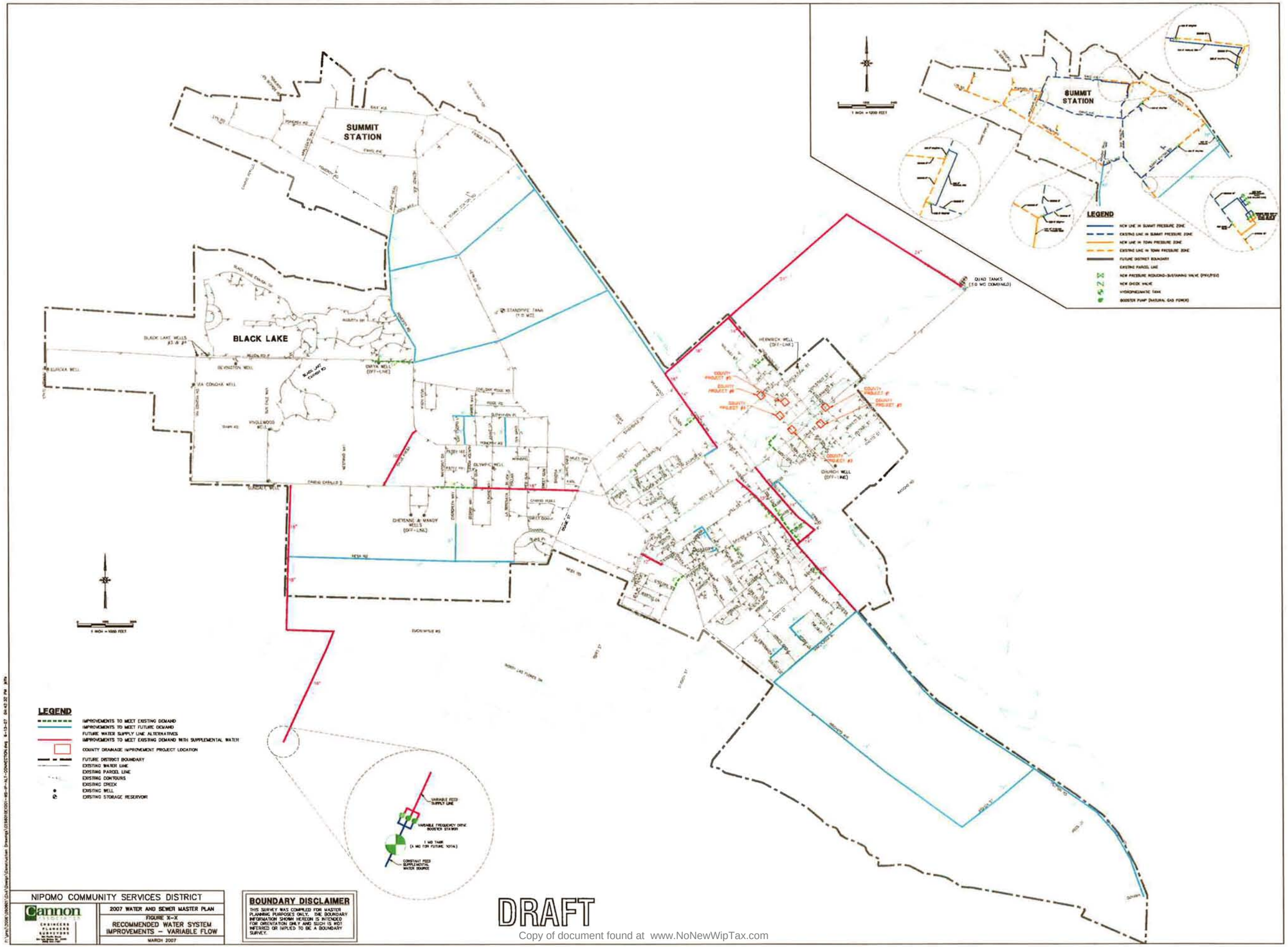
IMPROVEMENTS TO MEET SUPPLEMENTAL WATER NEEDS - ALTERNATIVE CONNECTION METHOD						
DISTRIBUTION SYSTEM	**Diam. (in)**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost[2]**	
PRIORITY 1 - BACKBONE IMPROVEMENTS TO ACCOMMODATE SUPPLEMENTAL WATER						
North Dana Foothill Road - Quad Tanks to Mehlshau	24	LF	4,900	$260	$1,300,000	
Mehlshau - North Dana Foothill Road to Thompson	24	LF	5,650	$260	$1,500,000	
Thompson - Mehlshau to High School	14	LF	900	$180	$170,000	
Mehlshau - Thompson to Oak Glen	18	LF	2,800	$215	$610,000	
Freeway Crossing - Oak Glen to Frontage at Mehlshau	18	LF	250	$215	$54,000	
S. Oak Glen - Tefft to Amado	14	LF	3,050	$180	$550,000	
Amado - S. Oak Glen to Highway 101	14	LF	650	$180	$120,000	
Freeway Crossing - Oak Glen to Frontage at Amado	14	LF	250	$180	$45,000	
N. Frontage - Hwy 101 Crossing to Sandydale	16	LF	650	$200	$130,000	
N. Frontage - Sandydale to Lindon	14	LF	650	$180	$120,000	
N.Frontage - Lindon to Juniper	12	LF	2,050	$170	$350,000	
Calle Fresa - Pomeroy to Camino Caballo	10	LF	1,200	$160	$200,000	
Orchard - Tefft to Theodora	12	LF	850	$170	$150,000	
S. Frontage - Tefft to Southland	12	LF	6,400	$170	$1,100,000	
Camino Caballo - Blue Gum to Osage	16	LF	3,800	$200	$760,000	
				Subtotal	*$7,200,000*	
STORAGE (depends on supplemental water supply)						
PRIORITY 1 - FIXED FLOW RATE SUPPLEMENTAL WATER SUPPLY EQUALIZATION STORAGE						
Tank Facility - 1MG		LS	1	$1,000,000	*$1,000,000*	
Land for 4MG Tank Site (2-acres)					*TBD*	
				Subtotal	*$1,000,000*	
SUPPLY (To be determined)						
PRIORITY 1 - SUPPLIMENTAL WATER FILL LINES						
18" Fill line from Oso Flaco to intersect of Viva and Camino Caballo	18	LF	11,350	$215	*$2,400,000*	
Booster Station		LS	1	$750,000	*$750,000*	
				Subtotal	*$3,200,000*	
				TOTAL COST TO MEET SUPPLIMENTAL WATER NEEDS	***$11,400,000***	

NOTES:
1. Cost Estimate derived from adjusting 2001 Master Plan Estimate April 2001 cost to May 2007 ENR CCI.
2. Costs rounded to 2-significant figures.

IMPROVEMENTS TO MEET FUTURE DEMAND

DISTRIBUTION SYSTEM	Diam. (in)	Unit	Quantity	Unit Cost[1]	Total Cost[2]
PRIORITY 1 - BACKBONE IMPROVEMENTS TO ACCOMMODATE FUTURE GROWTH					
N. Frontage - from Hwy 101 Crossing to Future Road	12	LF	8,100	$170	$1,400,000
N. Frontage - from Future Road to Summit Station	10	LF	1,100	$160	$180,000
Willow Extension - N. Frontage to Hetrick	12	LF	4,300	$170	$740,000
Willow Extension - Hetrick to Pomeroy	12	LF	3,200	$170	$550,000
Future Road - N. Frontage to Pomeroy	12	LF	6,200	$170	$1,100,000
Pomeroy - Willow to Future Road	12	LF	3,500	$170	$600,000
Pomeroy - Future Road to Summit Station	10	LF	2,050	$160	$330,000
Mesa - Charro to Viva	10	LF	6,800	$160	$1,100,000
Evergreen - Dead End to Mesa	8	LF	1,350	$140	$190,000
Orchard - Southland to Joshua	12	LF	8,500	$170	$1,500,000
Joshua - Orchard to S. Frontage	12	LF	3,350	$170	$570,000
S. Frontage - Southland to Joshua	12	LF	8,600	$170	$1,500,000
Hutton - Joshua to Cuyama	12	LF	6,300	$170	$1,100,000
Southland - Frontage to Orchard	10	LF	3,900	$160	$630,000
				Subtotal	*$12,000,000*
PRIORITY 1 - ELIMINATING BOTTLENECKS - BLACK LAKE					
Augusta Drive - extend 8" to future line in Pomeroy	8	LF	20	$140	$2,800
				Subtotal:	*$2,800*
PRIORITY 1 - FIXED FLOW RATE SUPPLEMENTAL WATER SUPPLY EQUALIZATION STORAGE					
Tank Facility - 3MG		LS	1	$3,000,000	$3,000,000
				Subtotal:	*$3,000,000*
PRIORITY 2 - PROPOSED LOOPS					
Widow Lane / Twilight - extend 8" to loop dead-ends	8	LF	1260	$140	$180,000
Tanis - extend 6" dead-end to Nellie	8	LF	500	$140	$70,000
Spruce - extend 6" dead-end to Nellie	8	LF	325	$140	$46,000
Bristlecone - extend 6" dead-end to Nellie	8	LF	285	$140	$40,000
Terrace - extend 6" dead-end to Souza	8	LF	1850	$140	$260,000
Souza - Terrace to Oak Glen	8	LF	300	$140	$42,000
Glenhaven - San Ysidro to Amber	8	LF	820	$140	$120,000
Hunter Ridge - Pomeroy to Glenhaven	8	LF	1050	$140	$150,000
Future Road - Glenhaven to Pomeroy (between Jennie and Ten Oaks)	8	LF	1050	$140	$150,000
Future Road - Honey Grove to Drum	8	LF	650	$140	$91,000
				Subtotal	*$1,200,000*
			TOTAL COST TO MEET FUTURE NEEDS:		***$17,000,000***
			TOTAL COST OF IMPROVEMENTS:		***$31,600,000***

NOTES:
1. Cost Estimate derived from adjusting 2001 Master Plan Estimate April 2001 cost to May 2007 ENR CCI.
2. Costs rounded to 2-significant figures.



NIPOMO COMMUNITY SERVICES DISTRICT

Cannon

2007 WATER AND SEWER MASTER PLAN

FIGURE X-X
RECOMMENDED WATER SYSTEM IMPROVEMENTS – VARIABLE FLOW

MARCH 2007

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