PRELIMINARY ENGINEERING REPORT

FOR

WOODRIDGE MUTUAL WATER AND PROPERTY OWNERS CORPORATION

TANK AND PUMPING SYSTEM REPLACEMENT PROJECT

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ABBREVIATIONS AND TERMS

The following abbreviations are used in this report:

ADD	Average Daily Demand. This is the average rate of water usage per day within a year. It can be expressed on an individual basis such as gallons per connection per day (GPCD), or on a community basis in gallons per day (GPD).
CEQA	California Environmental Quality Act
EDU	Equivalent Dwelling Unit
FH	Fire Hydrant
FY	Fiscal Year
GPD	Gallons per Day
GPM	Gallons per Minute
HP	Horsepower
MDD	Maximum Daily Demand. Same units as ADD.
MG	Million Gallons
MGD	Million Gallons per Day. NOTE: 1 MGD = 694 GPM = 3.07 Ac-ft/Day
mg/L	Milligram per Liter
MHD	Maximum Hourly Demand. Same units as ADD.
MMD	Maximum Month Demand. Same units as ADD.
PSI	Pounds Per Square Inch
PVC	Polyvinyl Chloride Pipe
USDA RD	United States Department of Agriculture Rural Development
VFD	Variable Frequency Drive

SECTION 1
PROJECT PLANNING

A. LOCATION

The unincorporated community of Shingletown is located approximately 30 miles east of the City of Redding in Shasta County California. The Woodridge Mutual Water and Property Owners Corporation (Corporation) service area boundary encompasses approximately 360 acres – See Figures 1 and 2. There are currently 64 active connections to the system and approximately 29 vacant lots available for construction, for a total of 93 ultimate connnections.

B. ENVIRONMENTAL RESOURCES PRESENT

Project elements consist of replacing infrastructure or construction of new facilities on previously disturbed sites and as such, do not appear to have any lasting, significant impact on land resources, historic sites, wetlands, flood plain, endangered species, or critical habitat. Based on this, the Corporation anticipates obtaining a California Environmental Quality Act (CEQA) Categorical Exemption for the project. The project design will include specific mitigation measures so as not to impact natural resources. These mitigation measures will need to be implemented and monitored during construction and are discussed in detail in a later section of this report.

C. POPULATION TRENDS

The Corporation service area has not been separated out in past Shasta County census counts, so there is no population information for this community. The current population of 138 persons was estimated based on the number of metered residential customers multiplied by 2.3 people per connection.

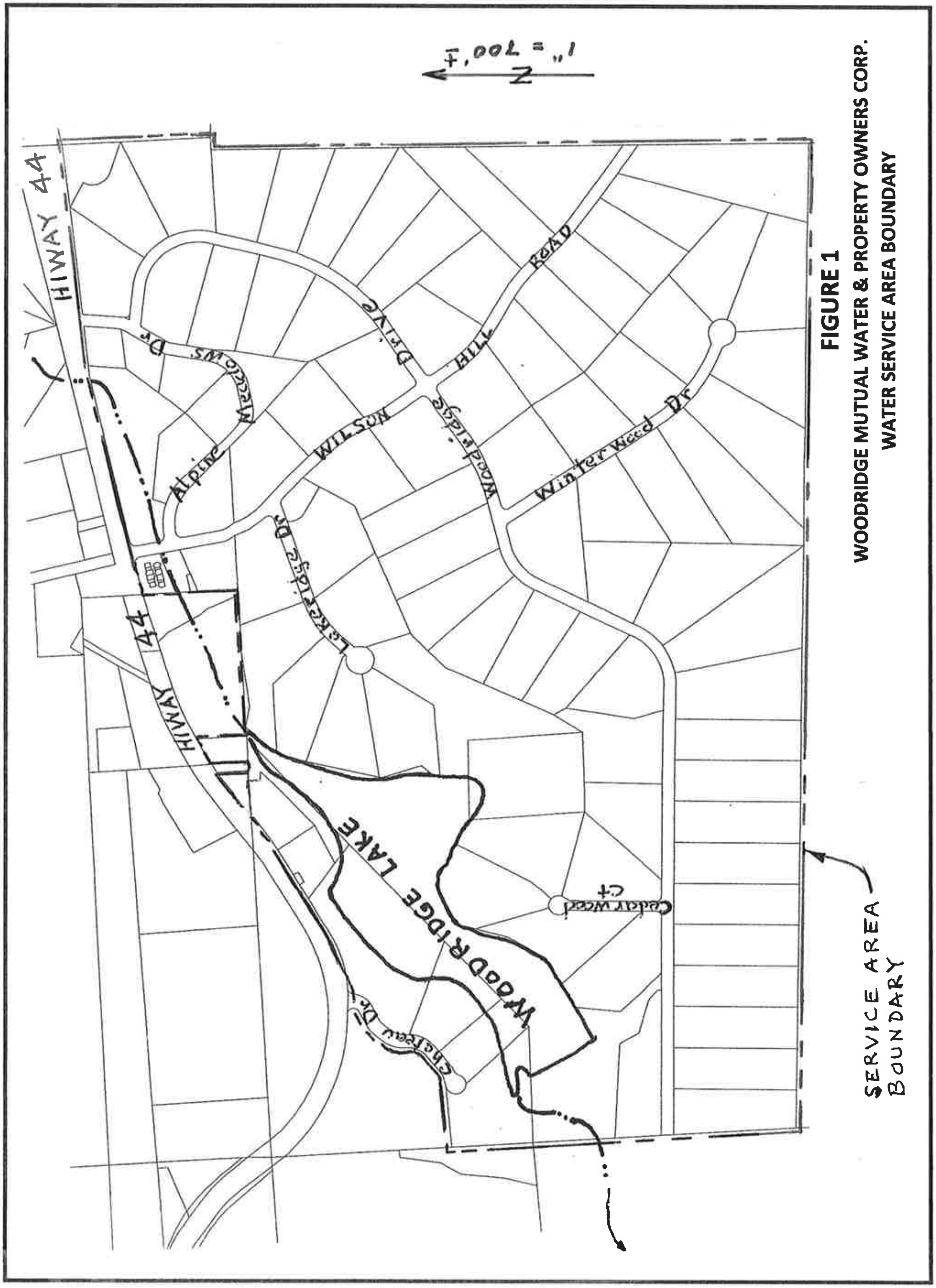


FIGURE 1
WOODRIDGE MUTUAL WATER & PROPERTY OWNERS CORP.
WATER SERVICE AREA BOUNDARY

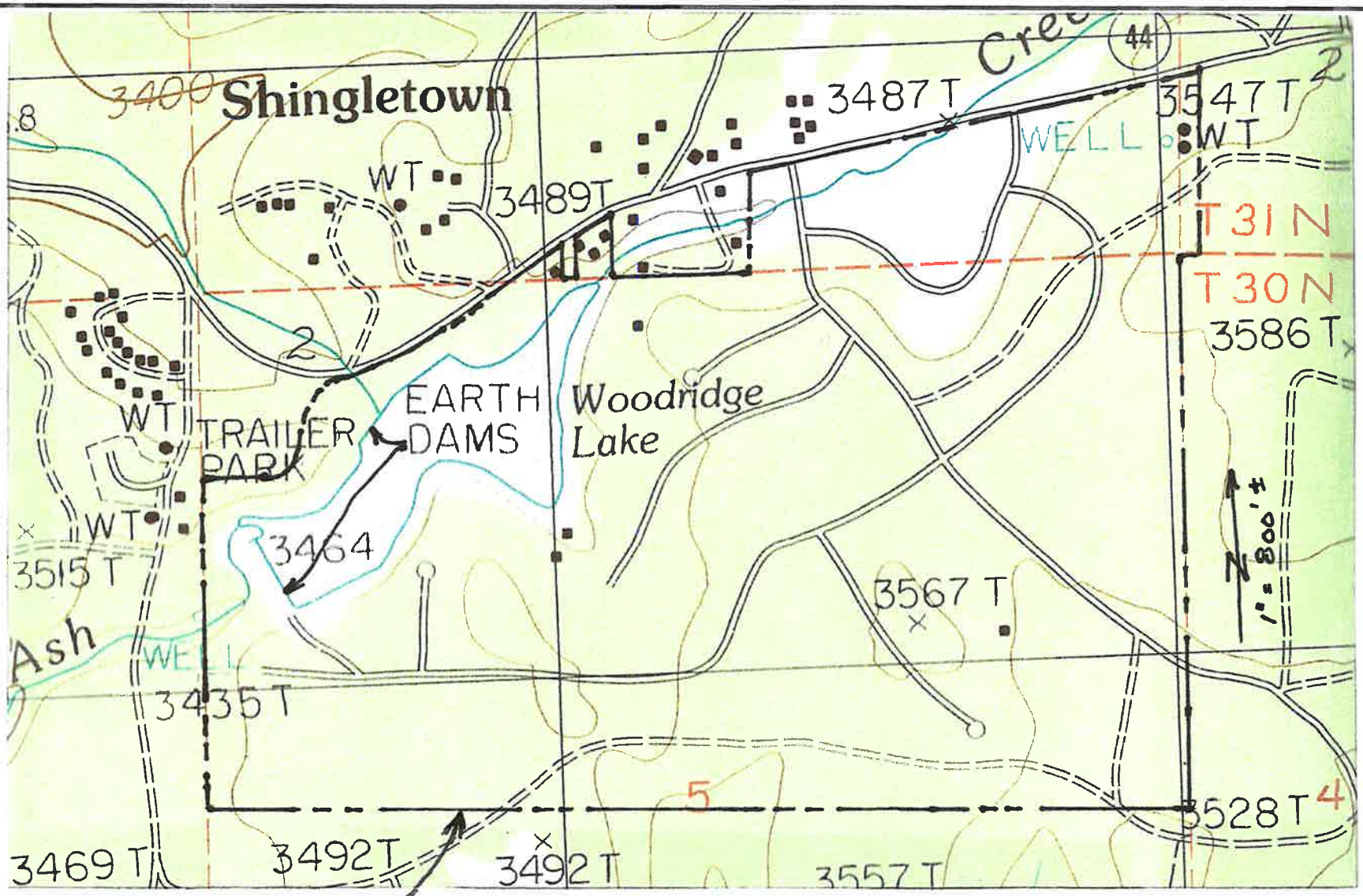


FIGURE 2

WOODRIDGE MUTUAL WATER & PROPERTY OWNERS CORP.
WATER SERVICE AREA TOPOGRAPHIC MAP

The estimated annual growth rate from 2000 to 2015 averaged about 1.3%. However, future growth will be primarily dependent on the economy and the ability of the vacant parcel owners to build on their property. There are no plans to expand the current service area.

The Corporation currently serves 64 total connections, 60 of which are residential and 4 are commercial. Ultimate development of the service area would result in 82 residential connections and 11 commercial connections for a total of 93 connections.

D. COMMUNITY ENGAGEMENT

The Corporation has quarterly board meetings in which progress on the proposed project is updated. In addition, information is posted on the Corporation's website, and the project information was also presented at the 2015 Woodridge Mutual Water and Property Owners Corporation annual meeting. An additional property owners meeting will be held once a funding commitment has been received.

SECTION 2
EXISTING FACILITIES

A. LOCATION MAP

Plate 1 (located at the end of the report) shows the location of the primary features of the water system, including the wells, storage tanks, booster pump station, water lines, and fire hydrants.

B. HISTORY

The Woodridge Mutual Water and Property Owners Corporation was incorporated in 1978 in accordance with the Corporations Code of the State of California. In 1993, a certificate of amendment was filed with the Secretary of State that changed the Corporation to a corporation organized under the Nonprofit Mutual Benefit Corporation Law.

The first elements of the water system were constructed in 1978 and served the 77 lots of the new Woodridge Lake Estates Subdivision. Then, in 1983 the Corporation accepted responsibility to operate and maintain the domestic water distribution system serving the Alpine Meadows Commercial Development, which is located between Woodridge Lake Estates and Highway 44. In 2001, the Corporation also added the four residential parcels on Chateau Drive to its service area.

The system water source is three groundwater wells located on and adjacent to the project site. Initially, the water supply system consisted of three wells pumping into a number of small hydro pneumatic tanks that were buried in the ground. In 1991, the Corporation installed two 9,000 gallon above ground storage tanks and a pump station consisting of a booster pumping system and eight 110-gallon hydro pneumatic tanks housed in a small building. One of the initial wells was abandoned due to poor water quality and a replacement well was drilled on an easement adjacent to the project site.

C. CONDITION OF EXISTING FACILITIES

Water Supply

The existing three wells produce high quality water that does not require any treatment or disinfection. A summary of the well data is shown in Table 1.

Water System Demand

Although the water system has always been metered, the meters are up to 38 years old. Beginning in 2012 the Corporation began a meter testing and replacement program. Over the last four years 26 meters have been replaced and those meters had errors of from 13 to 95%. Thus the historical consumption values are not considered to be reliable.

In June of 2014, a master meter was installed in the booster pump station to measure total production. Total 2015 production as measured by the master meter was 5.76 MG (million gallons) and the metered consumption was 4.95 MG. for an unaccounted for water loss of about 14%. It is estimated that the remaining water service meter inaccuracies account for about 3% of the water loss and the remaining 11% is due to distribution system losses, fire tanker truck filling, etc.

Based on a rough estimate of previous meter errors, it is believed that total water production has decreased about 20 to 25% from 2013 to 2015. However, it is not known if these reductions will continue once the current drought has officially ended. Based on the production meter reads, the 2015 average daily demand (ADD) was estimated at 15,500 gallons per day (GPD), the maximum daily demand (MDD) was about 35,000 GPD, and the maximum hourly demand (MHD) was approximately 70,000 GPD.

Water Supply Regulatory Compliance

Prior to 2010, Well No. 2 had a problem with positive coliform tests. However, after a number of years of chlorinating the well with tablets, it cleared up and chlorination is no longer required.

TABLE 1
WELL DATA SUMMARY

WELL NO.	1	2	4
Pumping Rate (GPM)	150	60	50
Pump Motor Size (HP)	15	7.5	5
Pump Depth (FT)	210	190	?
Well Depth (FT)	227	210	285
Well Casing Material	Steel	Steel	PVC
Well Casing Diameter (IN)	8	8	8
Well Age (YRS)	37	37	15

Storage Tanks

The two 9,000-gallon storage tanks are about 9'-6" in diameter and 18-feet tall. They are made of 1/8-inch steel and have not been recoated since they were installed. The exterior is not in bad shape, but the interior is corroding with numerous rust tubulars below the normal water level. The tanks were not constructed in accordance with the American Water Works Association Standards and they do not have the necessary seismic tie-downs to protect them from overturning during an earthquake. Some temporary cable tie-downs were installed recently in an attempt to keep the tanks from falling on the pump station during a moderate earthquake, but they do not meet current seismic requirements.

Two Existing 9,000 Gallon Tanks

Although these tanks were not put into service until 1991, they were probably fabricated in

1982 when the Alpine Meadows Commercial Development was being constructed. It is not known why they were not installed as part of that development, but they laid on the ground at the Corporation's old well site until 1991. In any event these tanks are substandard and need to be replaced as soon as possible.

The existing 18,000 gallons of storage does not provide adequate water to meet Shasta County's current fire flow requirements. Their requirement for rural residential areas is 500 gallons per minute for 2 hours, which equates to a fire storage requirement of 60,000 gallons. After adding in an allowance for normal operation needs the new tanks needs to be at least 80,000 gallons in effective capacity. It is recommended that a 100,000-gallon tank be installed to allow for adequate freeboard at the high water level condition, normal fill and draw conditions, and the fact that the pumps will not be able to completely empty the tank

Rusted Interior of Storage Tank

Booster Pump Station

The existing booster pump system consists of two 10-horsepower pumps that pump water from the storage tanks into the hydro pneumatic tanks and the distribution system. This pumping system was installed in 1991, but it was not sized adequately to meet the system

maximum daily demand (MDD) plus the 500 gallon per minute fire flow. In addition, it is 25 years old and approaching the end of its useful life. It is recommended that this existing pumping system be replaced with a new system that has larger pumps, larger suction and discharge headers, and variable speed pumps.

Existing Booster Pumps and 4 of 6 Hydro Pneumatic Tanks

Operational Management

There are 64 metered service connections in the distribution system. Twenty-six service connection meters have been replaced over the last four years and additional meters will be replaced in coming years. Meters are manually read quarterly. In June 2014, a master meter was added on the discharge of the booster pumping system to measure the total production

supplied to the distribution system.

The system operation is overseen by CR Water who is the Corporation's contract operator with the necessary State license.

SCADA System

There is no SCADA system needed for this system.

Security

The wells, pump station, and tank sites are all fenced and gated.

Standby Power Requirements

A 60 KW Standby generator provides standby power to all three wells and the booster pumping system. An automatic transfer switch starts the generator and transfers power supply when required.

60KW Standby Generator

D. FINANCIAL STATUS OF EXISTING FACILITIES

The total number of water service connections in 2015 was 63. There were 4 commercial accounts and 59 residential accounts. Table 2 summarizes the breakdown of equivalent dwelling units (EDU's) in 2015.

TABLE 2 EQUIVALENT DWELLING UNIT DETERMINATION				
User Type	**2015 Average Monthly Water Usage (2015)**	**Number of Users (Connections)**	**Average Monthly Usage per Connection (Gallons)**	**Number of EDUs**
Residential (Single Family)	404,388	59	6,854	59
Commercial	8,120	4	2,030	1
Total	**412,508**	**63**		**60**

The Corporation's existing water rate schedule is included in Appendix A. As can be seen, the Corporation's water rates are based on consumption and include a fixed quarterly service charge and consumption charge. During FY 2015, the 63 connections generated approximately $23,885 in water usage revenue for the Corporation. Thus the Corporation's average monthly user fee is estimated at $31.60. In addition, the Corporation collected $1440 in standby fees and $132 interest for a total income of $25,457 for 2015.

During the same year, the Corporation's operation and maintenance expenditures were approximately $19,710, excluding depreciation, for a net surplus of approximately $5,747. The FY 2015 income also included $6,050 in fees associated with connection of a new residence that was accepted as a member in 2015. This was a special case and is not anticipated to occur in the future. Future connection fees will be associated with the 30 vacant parcels within the Corporation's service area in 2015 and no capacity charges or service line fees are anticipated. The standard connection fee is $750 for a ¾-inch meter. If a customer requests a larger meter he must pay all cost associated with changing out the ¾-inch meter to the larger size.

Table 3 shows the annual O&M budget approved for FY 2016

TABLE 3 ANNUAL OPERATION & MAINTENANCE EXPENSES	
Personnel (salary, benefits, payroll tax, insurance, training)	$6,730
Administrative Costs (office supplies, printing, etc.)	$650
Insurance	$3,050
Energy Cost (fuel and electrical)	$5,400
Monitoring and Testing	$700
Professional Services	$1,600
Contract Operator	$1,200
Other:	
County Health & Air Pollution Fees	$610
Maintenance	$3,460
Maintenance Supplies	$550
2016 TOTAL BUDGET	**$23,950**

Existing Capital Improvement Program

The Corporation has identified the storage tank and booster pumping system shortcomings as high-priority deficiencies and recommend that they be addressed immediately. The Corporation has an annual maintenance program included in its operating budget, which covers small preventative maintenance projects such as replacement of water meters; and inspection and repair of small deficiencies in the system. The Corporation currently does not have funds set aside to complete the necessary tank and booster pumping replacement project.

Existing Long-Term Debt

The Corporation does not have any existing long-term debt.

Existing Reserves

At the end of FY 2015 the Corporation had a total of about $33,150 in its checking and certificate of deposit accounts. Of this amount, $23,000 is considered as an emergency reserve to fund well pump replacements, pipeline leaks and other unforeseen repairs.

E. WATER/ENERGY/WASTE AUDITS

In 2015, the total water production was 5.76 MG versus a water consumption amount of 4.95 MG, which represents an unaccounted for water amount of approximately 14%. As indicated previously it is estimated that about 3% of this loss is due to meter inaccuracy and the remaining 11% loss is due to distribution system losses, fire tanker truck filling, etc.

The booster pumps maintain the distribution pressure at between 40 and 60 PSI. The few parcels that are slightly higher than the booster pump station do experience lower pressures, but they are within the health department minimum standards. It would be desirable to increase the operating pressure by 5 to 10 PSI once the new booster pumping system is installed, especially since all new homes will need to have fire sprinkler systems.

Sanitary Survey

In April 2002, the Shasta County Environmental Health Department conducted Drinking Water Source Assessments on the Corporation's three wells. These assessments concluded that the wells may be vulnerable to low density septic systems in the area. However, no contamination has been detected in the monthly testing of the system.

SECTION 3
NEED FOR PROJECT

A. HEALTH, SANITATION, AND SECURITY

Water supply capacity from the three existing wells appears to be more than sufficient for the projected buildout of the service area.

Current compliance issues center around storage capacity for fire flow and normal operations; fire flow capacity at the fire hydrants; and minimal operating pressures at some of the higher elevation parcels.

B. AGING INFRASTRUCTURE

Storage Tanks

The two existing storage tanks have been in service for 25 years. They are badly corroded on the inside and their wall thickness is only 1/8-inch. These tanks do not meet current AWWA Standards and they are not equipped with the required seismic tie-downs to prevent them from overturning during an earthquake. Temporary cable tie-downs were recently installed and the maximum water level was dropped from 17-feet to 10-feet in an attempt to keep the tanks from falling on the pump station building during a moderate earthquake.

The existing 18,000 gallons of storage does not provide adequate water to meet Shasta County's current fire flow requirements. Their requirement for rural residential areas is 500 gallons per minute for 2 hours, which equates to a fire storage requirement of 60,000 gallons. After adding in allowance for normal operation needs the new tanks needs to be at least 80,000 gallons in effective capacity. It is recommended that a 100,000-gallon tank be installed to allow for adequate freeboard at the high water level condition, normal fill and draw conditions, and the fact that the pumps will not be able to completely empty the tank.

Booster Pumping System

The existing 25-year old booster pumping system is nearing the end of its useful life and it is

does not capable of meeting the system MDD plus the required 500 GPM fire flow.

C. REASONABLE GROWTH

Since the Corporation was created in 1978, there have been a total of 64 connections to the water system, which is about 68% of the ultimate buildout to the service area. From 2000 to 2015 the Corporation had an averaged historical annual growth rate of about 1.3%. In 2015 the MDD was about .035 million gallons per day (MGD) and with a 1.3% annual growth rate the 2035 MDD would be about 0.046 MGD. However, the State of California was under drought restrictions during 2014 and the Corporation's water use was reduced by about 25%. Thus without drought restrictions the 2035 MDD could reach about 0.058 MGD (41 GPM).

Based on the California Regulations Related to Drinking Water, the estimated current maximum hour demand (MHD) for the Corporation should be calculated at 1.5 times the MDD. Thus, it is estimated that the 2035 MHD would be approximately 0.087 MGD (61 GPM). At ultimate buildout it is estimated that the MMD and MHD could reach about 0.064 MGD (45 GPM) and 0.096 MGD (67 GPM), respectively.

The estimated capacity of the Well 1, Well 2, and Well 4 is 150 GPM, 60 GPM, and 50 GPM, respectively. Thus, the total capacity of 260 GPM is more than sufficient to meet the future demands, but the potential impact of prolonged drought conditions is not known.

SECTION 4
ALTERNATIVES CONSIDERED

A. DESCRIPTION

The proposed project includes replacement of the two 9,000 gallon storage tanks and replacement of the booster pumping system.

Storage Tank Alternatives

The following alternatives were considered:

- Alternative 1 – Replace the existing tanks with a 100,000-gallon tank
- Alternative 2 – Replace the existing tanks with a 20,000-gallon tank
- Alternative 3 – Replace the existing tanks with two 50,000-gallon tanks
- Alternative 4 – No project.

Alternative 1 – Replace the existing tanks with a 100,000-gallon tank: This alternative would consist of removing the existing tanks and constructing a single 100,000-gallon tank with larger outlet piping to the booster pumping system.

Alternative 2 –Replace the existing tanks with a 20,000-gallon tank: This alternative would consist of the same components as Alternative 1, except the replacement tank would be much smaller. This alternative is infeasible because it would not provide adequate fire flow and does not meet the goals of the Corporation.

Alternative 3 –Replace the existing tanks with two 50,000-gallon tanks: This alternative would consist of the same components as Alternative 1, except there would be two replacement tanks. This alternative may be preferable, but it is not financially feasible due to the significantly higher cost of constructing two tanks and the significantly larger footprint would have greater potential for environmental impacts.

Alternative 4 – No project: The no project alternative is considered infeasible because once the interior coating of the existing tanks fail and the tanks begin leaking the booster pumping operation would have to end. Then the operation would revert back to the old system with the

wells pumping directly into the distribution system and hydro pneumatic tanks. This would reduce the output capacity of the wells from 260 GPM to about 200 GPM because of the increased discharge pressure. Thus the end result would be that, there would be no emergency storage if there is a problem with the wells and the available fire flow would be reduces to less than 200 GPM.

Booster Pumping Alternatives

The following alternatives were considered:

- Alternative 1 – Replace the existing system with a larger system
- Alternative 2 – No project.

Alternative 1 – Replace the existing system with a larger system: This alternative would replace the existing booster pumping system with a new larger system with variable speed pumps and 6-inch suction and discharge header piping. The discharge piping from the pumps to the 6-inch distribution system would also be increased from 3-inch to 6-inch in order to reduce the head loss and power consumption. The new 20-HP pumps would have a combined capacity equal to the MDD plus the 500 GPM fire flow for a pumping system design flow of 540 GPM.

Alternative 2 – No project: The no project alternative is considered infeasible because the existing booster pumping system is near the end of its useful life and when it fails the operation would revert back to the old system with the wells pumping directly into the distribution system and hydro pneumatic tanks. The problems associated with this situation were outlined previously under Storage Tank Alternative 3- No Project. Replacing the booster pumping system with an identical system does not meet the Corporation's goal of providing adequate fire flows.

B. DESIGN CRITERIA

The design criteria used for evaluation of alternatives was generated from available historical

data as well as industry recognized design standards adopted by State and local regulatory agencies, including the State Division of Drinking Water. In addition, Shasta County Fire Standards were adhered to for determining fire flow requirements.

C. MAP

Refer to Figure 3 for an aerial map showing the location of the existing and proposed water facilities.

D. ENVIRONMENTAL IMPACTS

Proposed project alternatives do not appear to have any lasting, significant impacts on land resources, historic sites, wetlands, flood plain, endangered species, or critical habitat. The recommended project design and construction will need to take into account specific mitigation measures for short-term construction-related activities so as not to cause any long-term environmental impacts. Project mitigation measures will need to be monitored during active phases of the project. A preliminary mitigation monitoring checklist is included in Table 4. These measures will typically be required with all alternatives that include construction activities. The Corporation will verify these measures are included in the construction contracts and are adhered to both during and after construction of the project, where applicable. The Corporation anticipates obtaining a CEQA Categorical Exemption for the project.

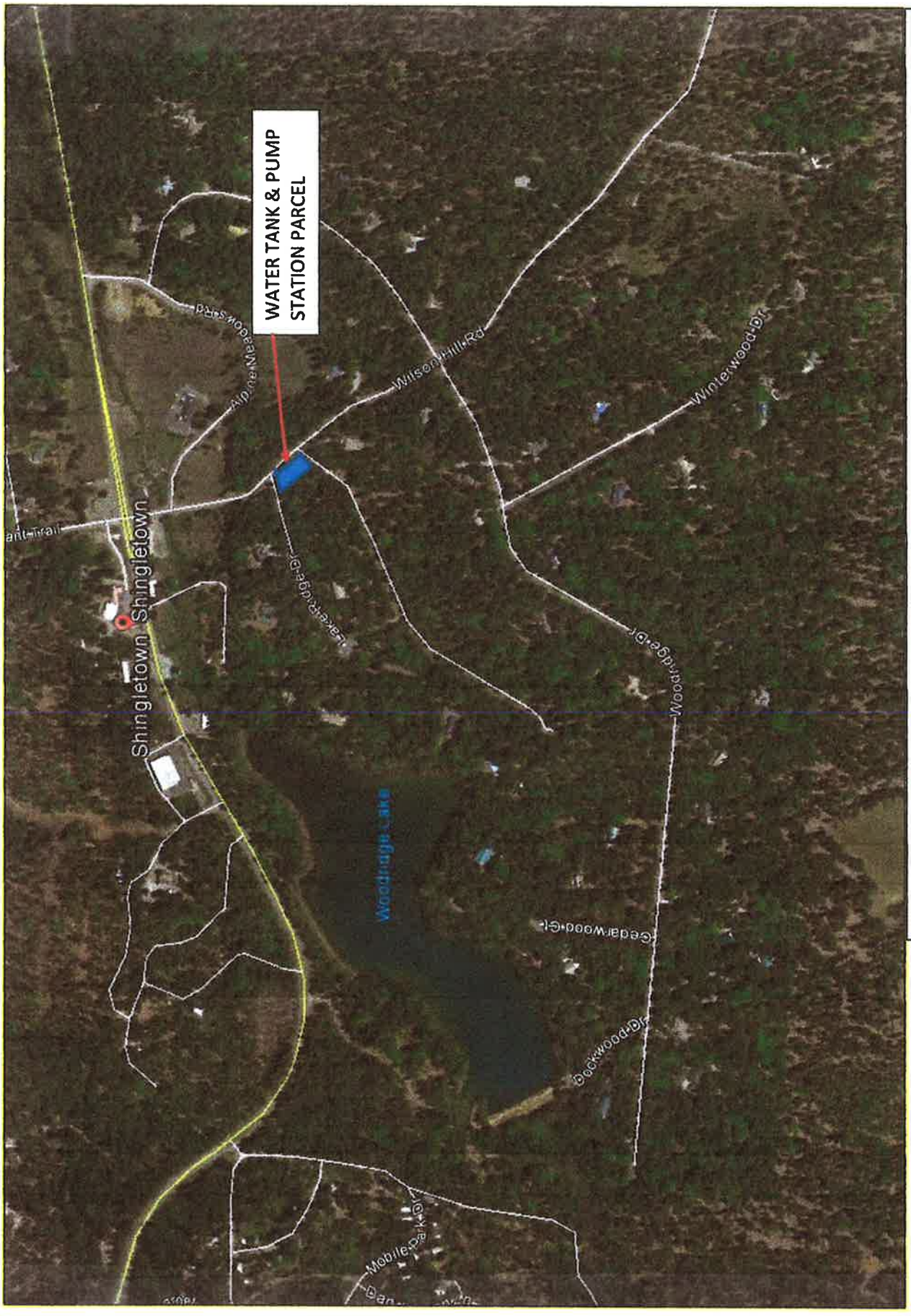


FIGURE 3. WOODRIDGE MUTUAL WATER & PROPERTY OWNERS CORP. – WATER FACILITIES

TABLE 4 PRELIMINARY MITIGATION MONITORING CHECKLIST	
Mitigation Measure	**Monitoring Action**
Work Area:	
Minimize work area	Define limits of work area in contract documents and delineate any sensitive areas that are to be left undisturbed.
Erosion Control	Establish erosion control procedures in contract documents including sensitive areas to be left undisturbed. Standard practices required by the County will be strictly adhered to by the construction Contractor and enforced by the Engineer.
Mulch Disturbed Areas	All areas disturbed shall be mulched
Construction Activities:	
Dust Control	Roads and work areas likely to generate dust shall be watered during construction activities and swept clean where possible.
Noise Control	Work hours will be limited typically to 7 a.m. to 7 p.m.
Sensitive Resources:	
Subsurface Cultural Resources	Where subsurface cultural materials are encountered during construction activities, all activities shall be halted within a 150-foot radius and an archaeologist called in to examine the artifacts and determine if additional mitigation measures are required.

E. LAND REQUIREMENTS

All work will be done on existing Corporation property and within existing easements; therefore, no additional easements will be required for any of the project alternatives.

F. POTENTIAL CONSTRUCTION PROBLEMS

No unusual construction-related issues, such as high water table, shallow rock, loose soil, steep slopes, access, or underground utilities have been determined that could impact the recommended project cost or feasibility. Mitigation measures described in Table 4 will be required to be implemented by the Contractor.

G. SUSTAINABILITY CONSIDERATIONS

Water quality and safety of the Corporation's distribution system will improve as a result of replacing the two corroding storage tanks.

H. COST ESTIMATES

Total project costs, including construction and indirect costs, for the feasible alternatives for the storage tank and booster pumping improvements are shown in Table 5. These costs are based upon similar projects in northern California and include a 10% construction contingency. Costs are based upon bidding in 2017 under favorable conditions. Cost estimates for alternative projects considered infeasible are not given.

Annual operation and maintenance costs for the new tank and booster pumping system should be essentially the same as the existing facilities.

TABLE 5
PRELIMINARY COST ESTIMATE FOR FEASIBLE ALTERNATIVES

Replacement Storage Tank					
1	Demolition of existing tanks	1	LS	$4,000	$4,000
2	Remove fencing and trees	1	LS	$2,000	$2,000
3	100,000 Gallon Tank	1	LS	$118,000	$118,000
4	Tank Footing	1	LS	$30,000	$30,000
5	Electrical	1	LS	$6,000	$6,000
6	Tank Piping	1	LS	$17,500	$17,500
7	Replace and Expand Fencing	1	LS	$7,200	$7,200
8	Site Work	1	LS	$2,000	$2,000
				Subtotal for Tank	**$186,700**
Booster Pump Station Upgrade					
1	Remove of existing booster pump station	1	LS	$5,000	$4,500
2	New Booster Pump Station	1	LS	$50,000	$50,000
3	Piping Modifications	1	LS	$18,000	$20,000
4	Flow meter and Instrumentation	1	LS	$11,000	$9,800
5	Upgrade Electrical Service	1	LS	$16,000	$16,000
				Subtotal for Booster Pump Station Upgrade	**$100,300**

Total Estimated Construction Cost	**$287,000**
Contingency @ 10%	$29,000
Total Estimated Construction Cost with contingency	**$316,000**

Indirect Costs	
Environmental Documentation and Shasta County Permit	$2,000
Design engineering and services during construction	$65,000
Shasta County Building Permit	$5,000
Financing Costs	$3,000
Legal Expenses	$5,000
Miscellaneous Expenses	$4,000
Subtotal Indirect Costs:	**$84,000**

Total Estimated Construction & Indirect Costs with contingency	**$400,000**

SECTION 5
SELECTION OF AN ALTERNATIVE

A. LIFE CYCLE COST ANALYSIS

Normally, the cost feasibility is determined by life cycle (Net Present Worth) cost analysis in order to compare technically feasible alternatives for each project alternative. However, in this case there is only one feasible alternative for each improvement, so there is no need for a life cycle cost analysis.

B. NON-MONETARY FACTORS ANALYSIS

Non-monetary factors can be considered when evaluating alternatives if the range between present worth values is small. Non-monetary factors include ability to meet environmental mitigation measures, obtain easements, meet future regulations, maintain the facilities with the skill set locally available, and simplicity of operation. However, in this case there is only one feasible alternative for each improvement, so there is no need for a non-monetary factors analysis.

SECTION 6

PROPOSED PROJECT

A. DESCRIPTION

Recommended Storage Tank Alternative 1 - – Replace the existing tanks with a 100,000-gallon tank

Storage Tank Alternative 1 includes the following construction items:

- Relocate existing fencing.
- Remove existing tanks.
- Construct new tank.
- Install new piping to booster pumping system
- Connect well discharge piping to new tank
- Install new level controls for the wells.

Recommended Booster Pumping Alternative 1 – Replace the existing booster pumping system with a larger one

Booster Pumping Alternative 1 includes the following construction items:

- Remove existing system and install new system
- Upgrade discharge piping to the hydro pneumatic tanks and distributions system to 6-inch.
- Modify electrical from 10 HP to 20 HP pumps
- Modify standby generator so the wells will not run if the fire pump is running during a power failure.

Figure 4 shows a preliminary design layout of the new tank and site piping.

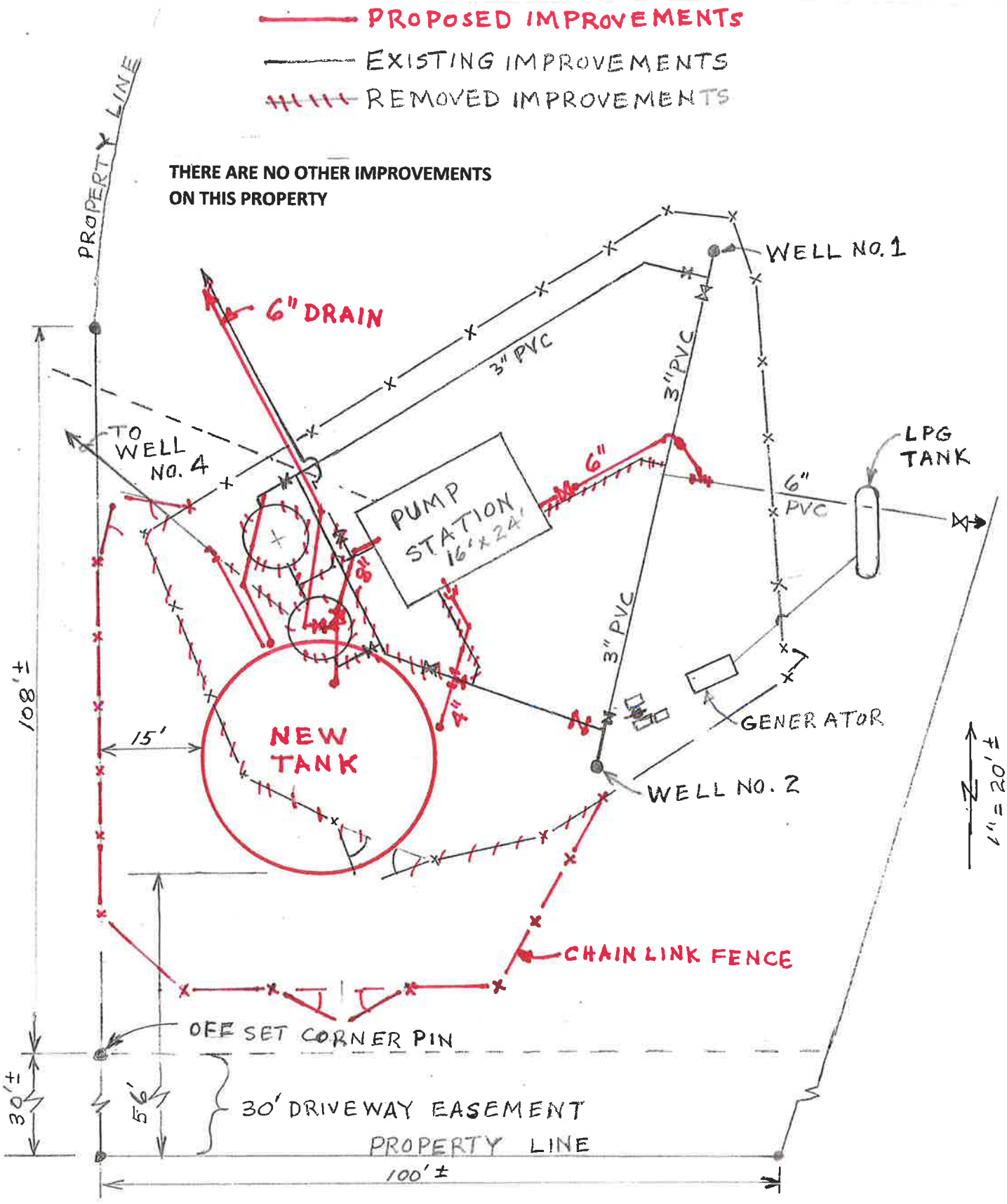


FIGURE 4

TANK AND PUMPING SYSTEM REPLACEMENT PROJECT

PRELIMINARY SITE PLAN

B. PROJECT SCHEDULE

A preliminary project schedule is presented in Table 6.

TABLE 6
PRELIMINARY PROJECT SCHEDULE

Item	Action	Target Date	Completion Date
1	PER completed	7/13/2016	
2	CEQA Categorical Exemption posted	7/15/2016	
3	Corporation submits PER and CEQA to USDA RD	7/15/2016	
5	Corporation reviews USDA RD Letter of Conditions	1/5/2017	
6	Corporation obtains members approval to proceed with loan	2/15/2017	
Construction of Improvements			
7	District authorizes an engineer to prepare Contract Documents	2/20/2017	
8	Draft design submitted to Corporation & USDA RD	5/1/2017	
9	Final design and specifications submitted to Corporation	6/15/2017	
10	Corporation approves final design and specifications	6/30/2017	
11	Corporation approves advertising for bids	6/30/2017	
12	Corporation invites construction bids	7/10/2017	
13	Construction bids received	8/10/2017	
14	Construction contract awarded	9/1/2017	
15	Begin construction	9/15/2017	
16	End construction	6/15/2018	

C. PERMIT REQUIREMENTS

The Corporation will obtain a building permit from Shasta County for this project.

D. SUSTAINABILITY CONSIDERATIONS

Water quality and safety of the Corporation's distribution system will improve as a result of replacing the two corroding storage tanks and the fire flow capabilities will enhance fire protection within the Corporations service area.

E. TOTAL PROJECT COST ESTIMATE

The total project cost estimate for recommended Alternative 1 for the tank and pumping

system replacement is $400,000 as summarized in Table 7.

F. ANNUAL OPERATING BUDGET

The Corporation's existing water rate schedule is included in Appendix A. The Corporation's FY 2016 Budget is shown in Table 3.

Income: During FY 2015, an estimated 63 connections and 30 standby parcels generated approximately $25,457 in water revenues for the Corporation. During the same year, the Corporation's operation and maintenance expenditures were approximately $19,710, excluding depreciation, for a net surplus of approximately $5,747. No new users will result from completion of this project.

Annual O&M Costs: Budgeted 2016 annual O&M costs are shown in Table 3. As described previously, no additional O&M costs should result from this project. However the annual O&M costs do tend to fluctuate from year to year based on varying chemical testing and routine maintenance needs.

TABLE 7
TANK AND PUMPING SYSTEM REPLACEMENT
TOTAL PROJECT COST ESTIMATE - USDA FORMAT

No.	Item	Subtotal	Total
INDIRECT COSTS			
1	**Building Permit**		$5,000
2	**Easement Acquisition/Rights-of-Way/Water Rights**		$0
3	**Financing Deed of Trust**		$3,000
4	**Legal Counsel**		$5,000
5	**Miscellaneous Expenses**		$4,000
6	**Environmental Services**		
7	Shasta County Permit and CEQA Environmental	$2,000	
8	NEPA Environmental Report by USDA RD	$0	
9	Environmental Mitigation Contract Services	$0	
10	**Total Environmental Services**		$2,000
ENGINEERING SERVICES			
12	***Basic Services:***		
13	Preliminary Engineering Report (PER)	$0	
14	Preliminary and Final Design Phase Services	$35,500	
15	Bidding/Contract Award Phase Services	$5,000	
16	Construction and Post-Construction Phase Services (w/o inspection)	$10,000	
17	***Resident Project Representative Services (Resident Inspector)***	$10,000	
18	***Additional Services:***		
19	Permitting	$0	
20	Regulatory Compliance Report	$0	
21	Environmental Mitigation Services (Construction Phase)	$0	
22	Easement Acquisition/ROWs Services (Construction Phase)	$0	
23	Construction Surveying Services	$0	
24	Operation & Maintenance Manual	$0	
25	Geotechnical Services	$4,000	
26	Hydrogeologist Services	$0	
27	Materials Testing Services (Construction Phase)	$500	
28	**Total Engineering Services**		$65,000
29	Equipment/Materials (Direct purchase by City separate from construction bid)		
30	Construction Cost Estimate		$287,000
31	Construction Contingency		$29,000
TOTAL ESTIMATED PROJECT COST			**$400,000**

Debt Repayment: The Corporation plans to repay the USDA RD loan through its monthly service fees paid by all existing rate payers and annual standby fees paid by vacant parcels.

Debt Service Reserve: If both recommended improvements to be funded, based upon a $400,000, 40-year repayment period and an estimated 2.25% intermediate USDA RD annual interest rate, the annual loan repayment amount is approximately $15,272. The debt service reserve will be approximately $1,527, or equal to one-tenth of the annual debt payment requirement.

Short-Lived Assets Reserve: Short-lived assets reserve accounts for equipment that has an estimated 5- to 15-year life for which the Corporation needs to establish a reserve account. Table 8 includes short-lived asset estimates for equipment used for water production and distribution.

TABLE 8
TYPICAL LIFE EXPECTANCIES OF WATER SYSTEM EQUIPMENT

Equipment Category	Component	Useful Life
Drinking Water Source	Pumping Equipment	15 years
Tanks	Hydro Pneumatic Tanks	10 years
Valves	Mechanical Valves	15 years
Electrical Systems	Variable Frequency Drives	10 years
	Sensors	7 years

Note: These expected useful lives are drawn from a variety of sources. The estimates assume that assets have been properly maintained. The adjusted useful life of an asset will be equal to or less than typical useful life. (EPA 816-K-03-002)

TABLE 9 SHORT-LIVED ASSETS RESERVE SCHEDULE			
Asset Description	**Replacement Period (Years)**	**Total Estimated Cost**	**Estimated Annual Replacement Cost**
Hydro Pneumatic Tanks (6)	10	$3,600	$360
Well Pumps (3)	15	$24,000	$1,600
Booster Pumps (2)	15	$10,000	$670
Variable Speed Drives (2)	10	$5,000	$500
Pressure Reducing Valve	15	$1,500	$100
		Equivalent Annual Replacement Cost	$3,230

SECTION 7
CONCLUSIONS AND RECOMMENDATIONS

The Corporation currently serves 64 total connections, 60 of which are residential and 4 are commercial. Thus the number of EDUs is currently 61. The Corporation pumps groundwater with three wells. The Corporation's existing wells have a maximum capacity of 0.371 MGD, which exceeds the estimated 2035 MDD of 0.058 MGD.

As previously described, the two storage tanks and booster pumping system have met their useful life and need to be replaced in order to meet local and regulatory codes.

Recommended upgrades to the Corporation's existing water system include the following:

- Replace the two existing storage tanks with one 100,000-gallon tank.
- Replace the existing booster pumping system with a larger system.

The estimated project cost if this project were to be constructed is approximately $400,000, including construction and indirect costs. The debt repayment schedule is summarized in Table 10 along with required debt reserve and short-lived assets reserve.

TABLE 10
DEBT REPAYMENT SCHEDULE

Loan Amount	$400,000
Repayment Period	40
Interest Rate	2.25%
Annual Repayment Amount	$15,272
Debt Service Reserve at 10%	$1,527
Short-Lived Assets Reserve	$3,230
Total Annual Cost	$20,029
Number of 2016 EDUs	61
Monthly Cost Per EDU	$27.36

In keeping with the plan presented to our members at the 2015 Annual Property Owners Meeting, the Board of Directors intends to spread the debt service costs to all members and not just the current water users. Since the Woodridge Lake Estates parcels have fire hydrants in their distribution system, they will receive more benefit than the other parcels that do not have fire hydrants. Therefore, the Woodridge Lake Estates parcels would be allocated a higher share of the debt service cost. A portion of the debt service cost would also be allocated to all vacant parcels because of the improved water service potential provided by the improvements. A preliminary estimate of the proposed rate increases is shown below:

Woodridge Lake Estates active services	= $23.00 per month
Woodridge Lake Estates standby services	= $7.70 per month
Non-Woodridge Lake Estates active services	= $10.50 per month
Non-Woodridge Lake Estates standby services	= $3.50 per month

Once a funding commitment has been received from Rural Development, the Board of Directors will present a final recommendation for rate increase schedule to the Corporation members and request member approval to proceed with the project.

APPENDIX A

WOODRIDGE MUTUAL WATER COMPANY RULES AND POLICIES

UPDATED 1/ 16 / 2016 **

(NOTE: SINCE JANUARY 2014, THE BOARD OF DIRECTORS ADDED THE WATER CONNECTION POLICY)

WATER FEES AND BILLING POLICIES

METER FEE - A fee of $750.00 must be paid in advance of receiving water service. This fee includes the cost of a ¾" water meter and the installation of the meter. All cost over and above a standard ¾" meter shall be borne by the user. (Pursuant to Board Actions on December 5, 1996 and January 31, 2014.)

- WATER USE RATES are as follows:
  - $75.00 per quarter fixed fee with 31,500 gallons of water use allowed
  - $3.00 per 1,000 gallons usage over 31,501 to 50,000 gallons
  - $5.00 per 1,000 gallons usage over 50,001 to 75,000 gallons
  - $6.00 per 1,000 gallons usage over 75,001 to 100,000 gallons
  - $7.00 per 1,000 gallons usage over 100,001 to 125,000 gallons
  - $8.00 per 1,000 gallons usage over 125,001 to 150,000 gallons
  - $9.00 per 1,000 gallons usage over 150,000 to 175,000 gallons
  - Water usage over 175,001 gallons will be charged at the rate of $10.00 per 1000 gallons.

  This is a cumulative rate. For example, if you use 175,000 gallons you will be billed $1005.50

- STANDBY SERVICE FEE – A standby service fee of $12.00 per quarter. This fee will be billed annually in January of each year in the amount of $48.00, and is subject to late fees as defined below.

- ** BILLING AND LATE FEES – Your water meter will be read near the end of each quarter and you will receive your bill by the 10th of the following month. Payment is due by the last day of the month following the end of the quarter (i.e. January, April, July & October). If your payment is not received by the 10th of the following month, a $35.00 LATE FEE WILL BE ADDED TO YOUR BILL and a new invoice will be sent. In addition, you will be charged interest at 1 1/2 percent per month until your payment is received. IF YOUR BILL IS NOT PAID BY THE 10TH OF THE 3RD MONTH, YOUR WATER WILL BE LOCKED OFF. If your water is turned off due to non-payment, there will be a $45.00 unlock fee due at the time the water is turned back on. If you have not made payment arrangements for paying your Property owner's maintenance fee or your Standby Fee is late, a $35,00 late fee will be charged each

quarter it is late and an accompanying 1 1/2 percent fee per month will be charged and sent out on a new quarterly invoice.

After receiving your water bill and you find that you need to make payments on the bill please call Linda Smith, Treasurer, at 474-3809 to make arrangements.

BACKFLOW PREVENTION REQUIREMENTS FOR THE WATER SYSTEM

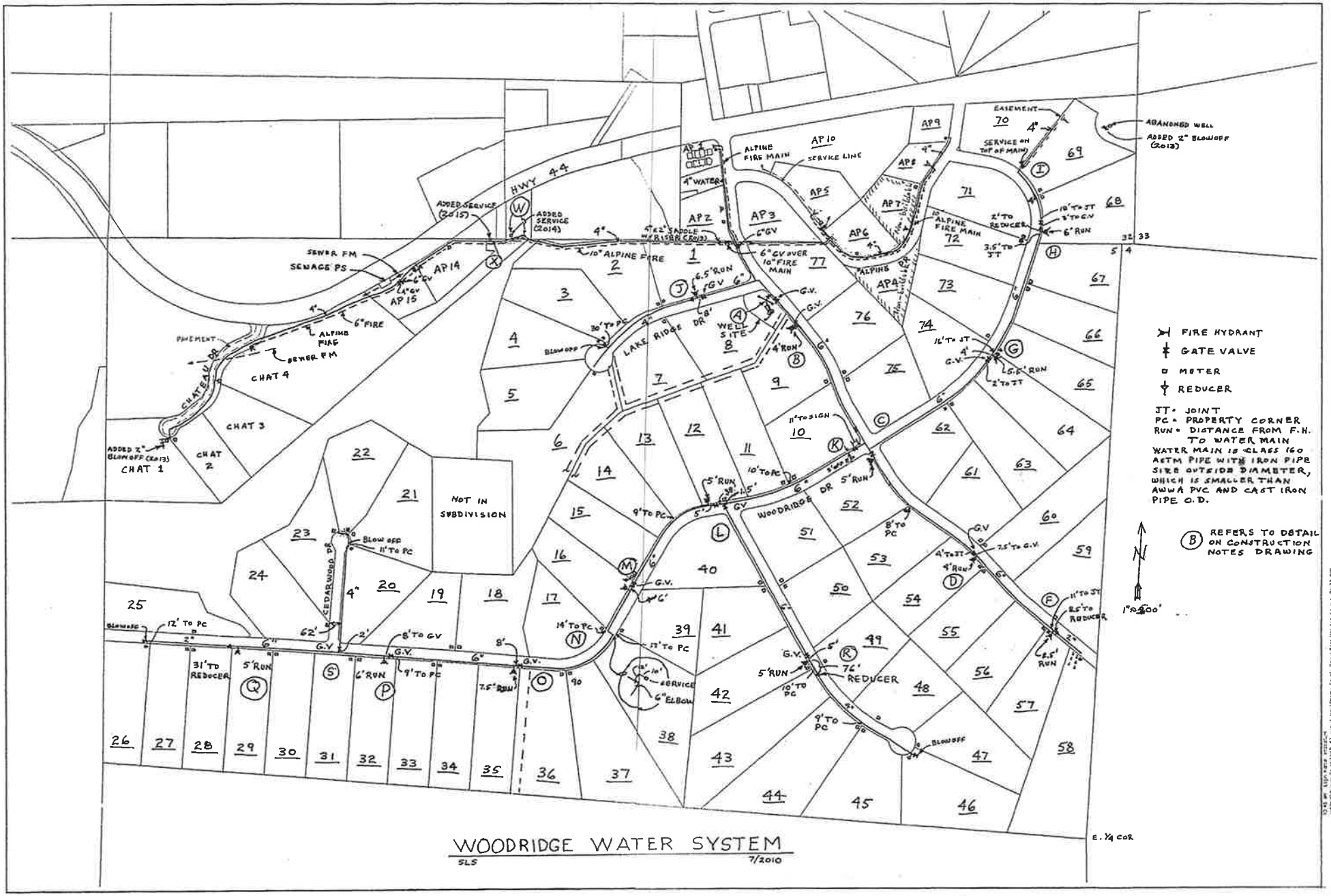
- Any property, residential or otherwise, connected to the water system of the Woodridge Mutual Water Company (WMWC) and is also connected to any alternate source of water, shall be required to have installed a reduced pressure principal backflow prevention device pursuant to California Code of Regulations Title 17. This backflow device shall be listed on the California Department of Health Services list of approved devices and shall be subject to annual testing by a third party backflow device tester that has been certified by the California Department of Health Services. Results of the annual testing are to be submitted in writing to the Water Company within 10 days following the testing procedure.

- Property owners who do not comply, or where the device does not pass the annual required testing, will be immediately physically disconnected from the WMWC water system and revert to standby billing. No reconnection will be allowed until the requirements stated in paragraph 1 are met and approved by the Water Master of WMWC and a reconnection fee in the amount of $2,000.00 has been paid.

WATER CONNECTION POLICY

Woodridge Mutual Water (WMW) was formed in 1978 to operate and maintain the water system for Woodridge Lake Estates (Tract 1532) which has 77 lots. In 1983 WMW increased its service area to include the Alpine Meadows Development (Tract 1626) with its 12 lots. In 2005 the 4 lots of the Chateau Drive Development (Parcel Map 99-21) were added after the developer contributed $18,000 toward drilling a new WMW well. Thus, the WMW has committed to serve water to a total of 93 lots.

Subsequently, the US Army Corps of Engineers conducted a wetlands investigation of the Alpine Meadows Development that resulted in two of its lots being deemed non-buildable. Thus the WMW Board of Directors has decided that it can potentially provide service to two other lots that are immediately adjacent to its existing water mains. Since these potential service lots have not contributed to the cost of the WMW's water infrastructure, then the owner of each lot would have to pay a capacity charge of $5,000 or provide another acceptable form of compensation. The owner of each lot would also have to pay the standard meter fee of $750 and for the service line extension from the water main to their property line at a cost of $15 per foot. (Adopted by the Board of Directors on 2/25/2015)



WOODRIDGE WATER SYSTEM

SLS 7/2010

PLATE 1