

Connecticut Department of Public Health Drinking Water Section

EXAMPLE for the Fictional ABC123 Homeowners Association

Fiscal and Asset Management Plan for Community Public Water Systems (PWS) Serving less than 1,000 Residents

This plan was created as a tool for Small Community PWS to use to 1) help PWS in meeting the new statutory requirement of Connecticut General Statutes (CGS) §19a-37e and 2) create and maintain a sustainable water system that provides safe and adequate water quality to its customers now and into the future. Many of the small community water systems serving less than 1,000 people are run by volunteer home or condominium association boards, property management companies or by a sole owner of a complex. These groups may not have a background in the water industry and/or be familiar with all regulations pertaining to the ownership and operation of Community PWS. Owning and maintaining a PWS is a large responsibility and all customers of Community PWS deserve access to safe and adequate water regardless of the type of PWS ownership.

Fiscal and Asset Management is a **Public Water System Tool**. Hopefully PWS will find this template useful in organizing and assessing their water system finances and assets. The physical condition of the water system and financial decisions the system makes can have a direct impact on your customers' health as well as impact other factors such as property values. PWS that use this tool effectively can provide safe water to their customers, boost PWS efficiency, save PWS staff time, improve customer service, tackle increasing costs of infrastructure and back up budget discussions with facts to make informed decisions. Fiscal and Asset Management Plans will be required for all small Community PWS by January 1, 2021. While this template was designed for small Community PWS, this template may also be used by larger Community PWS and/or Non-Community PWS at their discretion. Further, if PWS wish to expand upon this template, there are many asset management services that PWS may utilize both free and also for a fee to continue their asset management journey.

Date Plan Created	February 24, 2020
Signature of PWS Owner/Legal Contact	
Printed Name PWS Owner/Legal Contact	Stan Roper, President, ABC123 Homeowner's Association

SECTION 1: PWS GENERAL INFORMATION

Public Water System Name: ABC123 Homeowners Association **PWSID:** CT0169041 **Town Served:** Bridgewater

Type of Ownership:
 (check appropriate box) Private Owner Homeowners Association / Condominium Association Municipality / Water Authority Incorporated, Investor-Owned
 Other (specify): _____

Public Water System Description

Source Type:
 (Check all that apply) Ground Water Surface Water Surface Water (Purchased) Ground Water (Purchased)

Number of Service Connections:	17 single family homes	Total Population Served:	68 people
Number of Metered Service Connections:	0	Interconnections (list, if applicable):	N/A
Number of Lead Service Lines:	0		

Contact Information

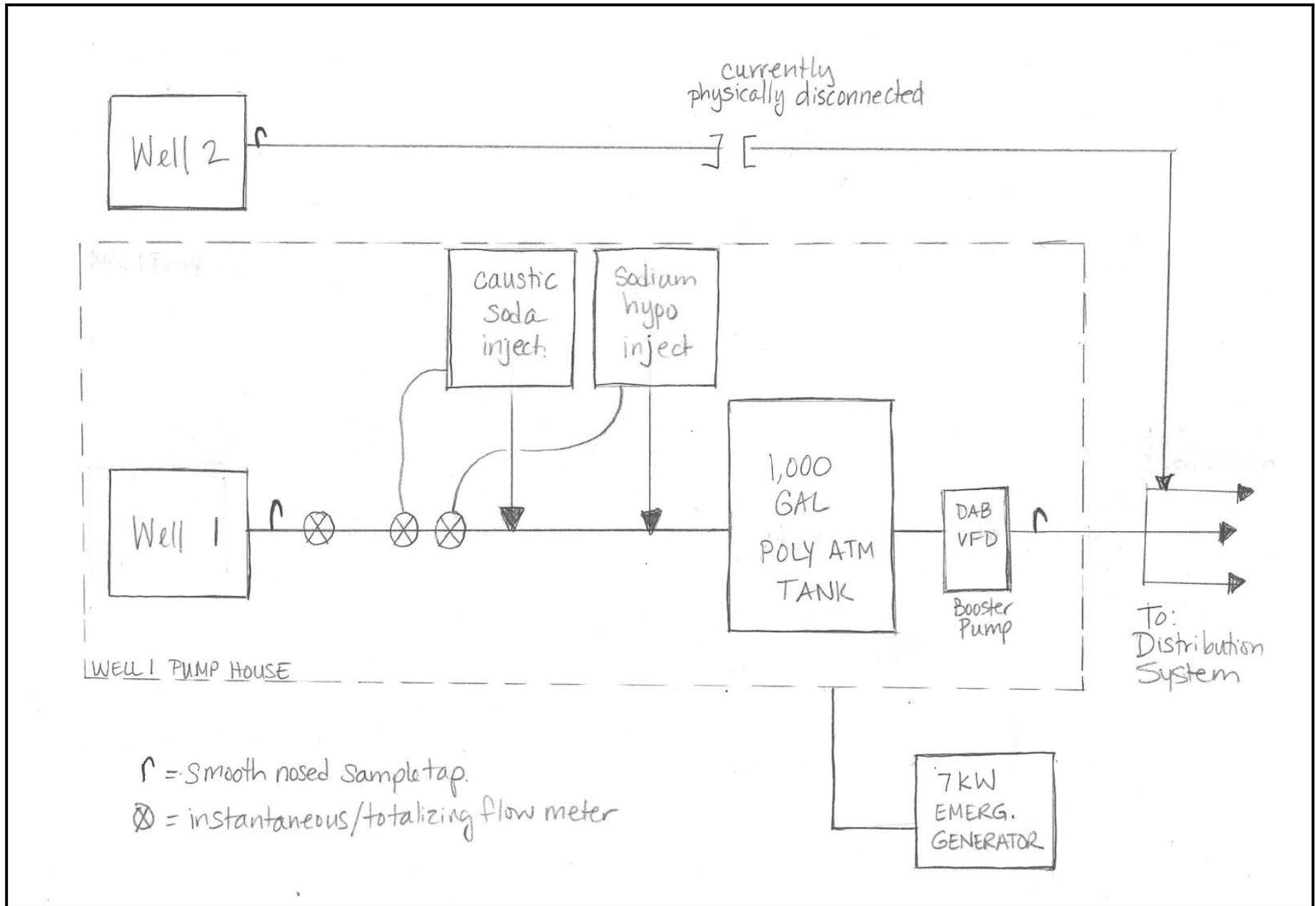
Contact Type	Name	Phone	Email	Current Address
Owner	Stan Roper, Assoc. Pres.	111-555-1234	stanleyroper@fakemail.com	10 Water Street, Bridgewater, CT
Manager	N/A			
Financial Contact	Valerie Westin, Treasurer	111-555-1874	treasurerval@fakemail.com	15 Water Street, Bridgewater, CT
Chief Certified Operator	Paul Troeg, GoodH ₂ O, Inc.	111-555-1212	PaulT@fakemail.com	1453 Town Road, Danbury, CT
Sampler	Environment Laboratory	111-555-6210	LisaSmalls@fakemail.com	25 Summer Street, Danbury, CT
Head Maintenance Personnel	Stan Roper	111-555-1234	stanleyroper@fakemail.com	10 Water Street, Bridgewater, CT

Fiscal and Asset Management Team

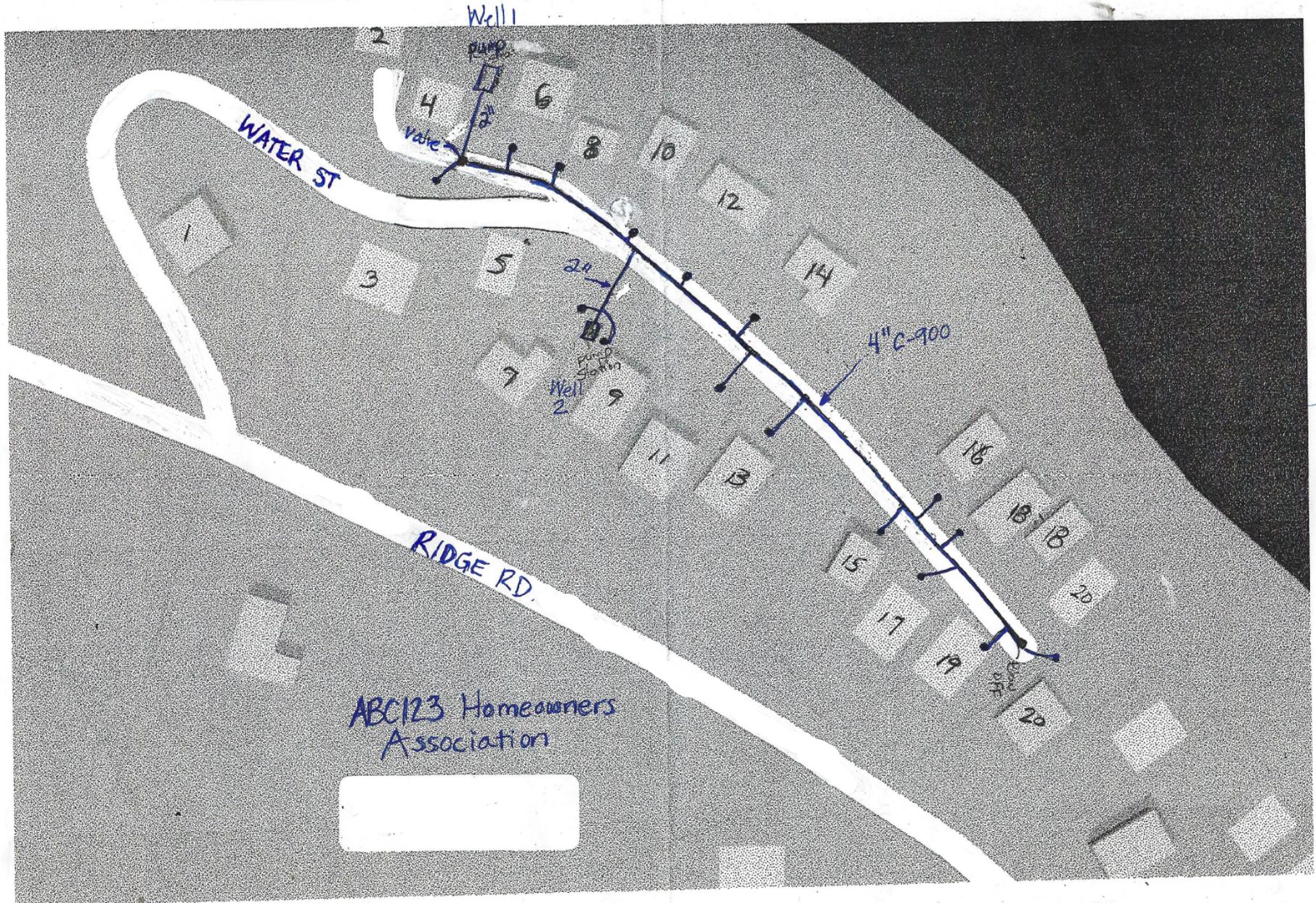
Name	Responsibility
Stan Roper	ABC123 Association President, Oversee PWS operations, Customer Complaints, Communication with Association Board Members of needs of PWS
Valerie Westin	ABC123 Association Treasurer; Annual Budget Preparation, Rate Setting Plan, Rate Collection and Paying PWS Bills
Al Boardman	ABC123 Association Vice President; Association Communication/Outreach, issues with customer non-payment
Paul Troeg	Certified Operator; Day to Day Operations of PWS, Communicate with Association Board about PWS needs and issues

Water System Schematic & Distribution System Map

Use this space to draw a detailed schematic of the water system including as many of the system assets as possible, or attach a copy of your own. Additionally, an up-to-date distribution system map should be attached to the plan to show all distribution system assets.



ABC123 Homeowners Association Distribution System Map



PWS Level of Service (LoS)

Please fill in the blanks for the metrics below that describes the targeted level of service that your water system provides to its customers. Identify your system's current state (i.e., if you are currently able to meet the goal) and explain why or why not. In the last column, identify your system's plan for maintaining acceptable LoS, or what are you doing to correct or improve the situation?

Category	Level of Service (LoS) Goal	Current State	Plan to Maintain or Improve PWS
Public Health & Safety	Meet all federal and state Drinking Water Standards.	Yes / No; Explain: All WQ test results within levels	Maintain sources & water sys infrastructure in good repair.
	Maintain high level of confidence in water quality by completing all regulatory monitoring and reporting requirements and reporting results to customers annually in the consumer confidence report.	Yes / No; Explain: no recent M&R violations, complete CCR annually and distribute to residents	Continue to communicate water sys results to residents annually in consumer confidence report and conduct monitoring on time.
Customer Service	Provide average water pressure of <u>75</u> PSI and minimum water pressure of <u>50</u> PSI throughout the distribution system.	Yes / No; Explain: Constant Pressure set point 75 psi	Consider investing in redundant booster pump with VFD
	Fewer than <u>1</u> complaints received regarding color, taste and/or odor per month.	Yes / No; Explain:	Maintain current treatment system to maintain good water quality
	Customers will receive _____ hour(s) notice for planned outages. Planned outages will last no longer than 8 hours per event.	Yes / No; Explain: No standard for planned outages	Set goal to give customers 24 hours notice for any planned outages
Response Time	Respond to water quality complaints by the next business day.	Yes / No; Explain:	Assn President responds in a timely manner to any WQ complaints
	Main line breaks will be fixed within <u>12</u> hours of discovery. Service line breaks will be fixed within <u>36</u> hours of discovery.	Yes / No; Explain:	Need to create a break response plan with list of contractors available to conduct work in a timely manner
PWS Management	The PWS employs an appropriately classified certified water operator that has direct responsible charge of the water system 100% of the time, and there is open communication between operator and the PWS owners/administrators.	Yes / No; Explain: Current Operator Paul Troeg: conducts weekly site visits	Add in CO contract to provide a quarterly written water system update and maintenance report
	The PWS will implement this Fiscal and Asset Management Plan to maintain defined levels of service at the lowest life cycle costs. This Plan will be reviewed and updated annually.	Yes / No; Explain: This is the first time this PWS has a Fiscal and Asset Plan.	Will implement plan moving forward and take an active role in ownership of the PWS.
	Water distribution integrity as measured by the number of leaks/breaks per year – will be collected. This information will be used to guide planned pipe replacement/repair expenditures.	Yes / No; Explain: Records of breaks not currently maintained	Begin recording main and service line breaks and leaks
	Water rates will be maintained sufficient enough to meet the needs of the water system as outlined in this Plan.	Yes / No; Explain: Rates only cover current expenses	Will conduct annual fiscal reviews to proactively pay for infrastructure

SECTION 2. ASSET MANAGEMENT INFORMATION

Asset Inventory Worksheet

Asset Component	Asset ID	Size, Length, Diameter and / or Capacity, and Location (Where necessary, list each individual component separately)	Year Constructed or Installed	Estimated Life Expectancy (Yrs)	Condition (1-5) ¹	Estimated Remaining / Adjusted Service Life ² (Yrs)	Probability of Failure (1-5) ³	System Impact (1-5) ⁴	Risk Score (1-25) ⁵
Well	Well-1	Lower Well, 600' deep, 6" drilled well	1950	50	4	-20	4	5	20
	Well-2	Upper Well (not currently active or tied in)	1952	50	4	-18	4	1	4
Well Pump	WPump-1	Gould 7GS10 submersible pump, 1 HP set at 560'	2017	10	2	7	3	5	15
	WPump-2	Unknown	unk						
Source Meter	WMeter-1	5/8" Badger meter, instantaneous and totalizing	2017	20	2	17	2	1	2
	WMeter-2	5/8" Badger meter, instantaneous and totalizing (not connected)	Unk	20					
Well/Pump House	W1PH	Lower Pumphouse, Masonry Block Construction	1950	30	3	-40	4	3	12
	W2PH	Upper Pumphouse, Concrete Below Grade Vault (roof caving in)	1952	30	5	-38			
Atmospheric Tank	ATMTank-1	1,000 Gallon Polyethylene Storage tank	2017	30	1	27	1	5	5
Booster Pumps	BPump-1	DAB E-Sybox	2017	10	1	7	3	5	15
Bladder Tank	BLTank-1	(built-in DAB E-sybox)	2017	10	1	7	3	5	15
Hydropneumatic Tank ⁶		Not applicable							
Distribution Pipe and all in-line valves and boxes	Dist Main	1,700 linear feet of 4" blue polyethylene distribution piping	2000	35-50	2	30	2	5	10
Treatment System	Cl2 Feed	55 Gal day tank, LMI feed pump, paced proportional to flow	2017	5	2	2	3	5	15
	KOH Feed	55 Gal day tank, LMI feed pump, paced proportional to flow	2017	5	2	2	3	4	12

Asset Component	Asset ID	Size, Length, Diameter and / or Capacity, and Location (Where necessary, list each individual component separately)	Year Constructed or Installed	Estimated Life Expectancy (Yrs)	Condition (1-5) ¹	Estimated Remaining / Adjusted Service Life ² (Yrs)	Probability of Failure (1-5) ³	System Impact (1-5) ⁴	Risk Score (1-25) ⁵
Hydrants and Blow-offs	BlowOff-1	2" blowoff at end of Terrace Rd between houses #2 and #4	2015	40	1	35	2	1	1
Back-up Generator	Gen-01	Honda 7 kW gen. with pigtail connection – located at Well 1	2005	10	4	-5	4	2	8
Customer Meters		System does not meter houses							
Electrical Service	Electrical-1	W1PH: dedicated 60 AMP service	1950	40	4	-30	3	5	15
	Electrical-2	W2PH: currently electrical is disconnected							
Telemetry/SCADA or other Remote Monitoring System		System has no telemetry							
Other									

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Score	Condition	Description
1	Excellent	New or relatively new condition. Asset has required little to no preventative or corrective maintenance.
2	Good	Acceptable condition. It still functions and requires minor preventative or corrective maintenance.
3	Fair	Deterioration of the asset can be seen. It needs preventative or corrective maintenance frequently to be able to perform.
4	Poor	Failure of the asset is likely and will need to be replaced in the next few years.
5	Very Poor	Failure has occurred or is going to occur. Major maintenance is required, or replacement needs to occur.

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Score	Probability of Failure
1	Highly Unlikely
2	Unlikely
3	Likely
4	Very Likely
5	Imminent

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Score	System Impact	Description
1	Insignificant	Can continue normal operations of the water system without this asset
2	Minor	Redundant systems in place; loss of the asset has a minor impact on the ability of the system to operate.
3	Moderate	Some redundancy in place; loss of the asset has a moderate impact on the ability of the system to operate
4	Major	Greatly reduced capacity (major impact) to operate water system without this asset
5	Catastrophic	Cannot operate water system without this asset

² **Remaining / Adjusted Service Life:** Remaining or adjusted service life will be the difference between the current year and the year an asset was installed /constructed. This value may change depending on specific asset maintenance practices and current asset condition rating.

⁵ **Risk Score** is a number which is the result of Probability of Failure Score multiplied by System Impact Score

⁶ Attach the Hydropneumatic Tank Fiscal and Asset Assessment Form that was completed for each active hydropneumatic tank, if applicable.

Water System Operation and Maintenance (O&M) Plan

A Water System Operation and Maintenance Plan is written procedures explaining how a public water system is to be operated on a day-to-day basis to ensure public health, safety and compliance with applicable regulations. It also describes maintenance practices and frequency to assure that the physical components of the water system are maintained in such a way to maximize the useful life of the assets.

Copies of these procedures should be kept with this Fiscal and Asset Management form for reference purposes. If your utility already has a written water system operation and maintenance plan that is routinely updated, please attach the latest version of this plan to this document. If not, please outline the current operation and maintenance practices for each category in the space provided below:

Day-to-Day Operations		
Task	Frequency	Description
Record instantaneous and totalizing meter readings for all source of supply	weekly	Contract operator performs task as part of weekly visits
Check and record water levels in storage tanks	weekly	Contract operator performs task as part of weekly visits
Inspect pumps, motors and controls	monthly	Contract operator performs task as part of weekly visits, second booster pump recommended for redundancy as part of 4-log approval in 2017
Check chemical solution tanks and record amounts used, replenish tanks	weekly	Contract operator performs task as part of weekly visits
Conduct field operating tests for treatment parameters (pH, Cl ₂ and PO ₄ residual)	weekly	Contract operator performs task as part of weekly visits; Volunteer resident takes daily chlorine residuals and pH readings under operator supervision
Check instrumentation for proper signal input/output	monthly	Contract operator performs task as part of weekly visits – no telemetry or online analyzers
Complete security check of pumphouse	daily	Volunteer resident asked to report any security incidents as part of daily visits for daily chlorine residual and pH monitoring
Inspect heater operation during winter	daily	Volunteer resident asked to report heat failures in winter

Read customer meters	Not Applicable	
Routine Maintenance		
Task	Frequency	Description
Exercise Valves	none	Cited as Minor Deficiency as part of 2017 sanitary survey; need to implement
Implement flushing program	none	Cited as Minor Deficiency as part of 2017 sanitary survey; need to implement
Insect tank hatches, vents, pipes	none	Need to implement on as at least bi-yearly basis now that system added atmospheric storage tank (main purpose was contact time for required 4-log)
Inspect and lubricate pumps	N/A	
Calibrate chemical feed pumps and/or treatment instrumentation	weekly	Contract operator performs task as part of weekly visits; spare parts available; second permanently installed chemical feed pump recommended as part of 2017 sanitary survey report.
Inspect and conduct repairs to water system facilities – wellheads, pump house, etc., as needed	monthly	Contract operator performs task as part of weekly visits
Inspect and clean chemical feed lines and solution tanks	weekly	Contract operator performs task as part of weekly visits

Water Quality Monitoring	
Sampling Schedule	Attach copy of DWS Water Quality Monitoring & Compliance Schedule
Sample Locations	Attach copy of DWS- Approved Sampling Site Plan with sampling point map
Certified Laboratory: Name and Contact Information	WaterTech Laboratories, LLC – 12 Main Street, Brookfield Trevor Padma, Lab Director
WQ Sampler: Name and Contact Information	List laboratory or certified operator who is responsible for sample collection

Capital Improvements

Input the assets with the top ten highest Risk Scores from the Asset Inventory Worksheet on pages 5 and 6, starting with the highest score first. Fill out the columns in the table in accordance with the instructions in order to develop a Capital Improvement Project List and Budget.

Risk Score	Asset ID	Asset	Description of Action Required to Improve Asset	Years Until Action Required	Approx. Total Cost of Required Action: Replacement, Rehabilitation, Repair	Reserves Required Each Year (Total Cost ÷ # of Years)
20	Well1	Lower Well, 600' deep, 6" drilled well	Replace, re-drill or re-case well	0	\$20,000	\$20,000
20	Electrical-1	W1PH: dedicated 60 AMP service	Replaced dedicated electrical service in pumphouse for active well	0	\$3,000	\$3,000
15	WPump-1	Gould 7GS10 submersible pump, 1 HP set at 560	Replace well pump when it fails	7	\$3,500	\$500
15	BPump-1	DAB E-Sybox	Replace booster pump when it fails (second booster pump has been recommended for redundancy)	7	\$2,100	\$300
15	Cl2 Feed	55 Gal day tank, LMI feed pump, paced proportional to flow	Replace chlorine feed system when necessary (4-log chlorination system is mandatory and was installed as a result of an acute E.Coli event; analyzer and chart recorder has been recommended)	2	\$3,000	\$1,500
12	W1PH	Lower Pumphouse, Masonry Block Construction	Re-build pumphouse when needed (cost is low because pumphouse is likely to be rebuilt using volunteer labor from residents)	0	\$5,000	\$5,000
12	KOH Feed	55 Gal day tank, LMI feed pump, paced proportional to flow	Replace pH chemical feed system when necessary (soda ash feed system is proactive and replaced calcite filters; analyzer and recorder has been recommended)	2	\$3,000	\$1,500
10	Dist Main	1,700 linear feet of 4" blue polyethylene distribution piping	Distribution main was replaced in 2000 and is in good condition with low amount of breaks/leaks.	30	\$170,000	\$5,666
8	Gen-01	Honda 7 kW gen. with pigtail connection located at Well 1	When generator is replaced, it should be replaced with a propane powered one	0	\$15,000	\$15,000
5 and less	Miscellaneous	Miscellaneous items with low risk score	Budget \$1500 per year for miscellaneous low risk items (items with relatively low risk scores/low costs are lumped together as one yearly contingency item to simplify the form)	n/a		\$1,500
Totals:						\$53,966

Capital Improvement Funding:

For the actions you’ve listed on the table above, where is the funding for these projects included in your budget? Is the money included in the capital reserve? Is it included in your Operation & Maintenance budget? Please explain.

Currently, ABC123 Homeowners Association does not have enough money to fund the projects listed above. We maintain a maintenance budget for emergency repairs, which is only about 15% of the annual budget. We need to start working toward building the reserves of **\$54,000** that we should already have since many of our assets are past their useful service lives. To improve our current financial backlog, the association may consider an annual assessment of all water system users to build up its reserve funds. Currently our water system lacks redundancy- for example with only one well and one booster pump, a failure in either would cause the neighborhood to be out of water almost immediately. This means that our small water system should also work toward building additional reserves for a second source of supply (\$20,000+) and a second booster pump (approx. \$2100). Also with an additional source of supply (whether it is rehabilitating our old well which has not been used in years or drilling a new one), consideration should be given to configure the water system so that it consists of a single entry point to minimize testing and treatment costs (currently the inactive well is a configured as a separate point-of-entry pumping directly into distribution).

Explain how the system is or will be developing/managing a reserve fund for water system capital improvements. Be sure to include how the reserve fund will be generated and used and how often funds are/will be added to the account.

At the next Board meeting, the Association’s Board will review this plan and determine an appropriate amount of money to be dedicated to a reserve fund in order to proactively pay for infrastructure repairs/upgrades. The amount determined will be voted on upon the membership but will plan on a rate increase on the quarterly Association water bill and a special assessment. Possible amount is shown in the projected year budget.

SECTION 3. FISCAL MANAGEMENT INFORMATION

Fiscal Information – Answer the questions and complete the tables below. If a line item is not applicable you can leave it blank.

Water Rates: (complete all rows that apply)

Flat Fee	<input checked="" type="radio"/> Y / <input type="radio"/> N	Current Rate	\$192.50 /quarter	Frequency of Billing:	Monthly		Quarterly	<input checked="" type="radio"/> X	Other (Specify):	
Metered Usage	<input type="radio"/> Y / <input type="radio"/> N	Current Rate	_____ Base Rate _____ Volume Charge	Frequency of Billing:	Monthly		Quarterly		Other (Specify):	
Other	<input type="radio"/> Y / <input type="radio"/> N	Current Rate		Frequency of Billing:	Monthly		Quarterly		Other (Specify):	

Average Residential Annual Water Bill \$770 Average Commercial Annual Water Bill N/A Are water rates combined with any other rates/fees? (If yes, list) No

When was the last time the water rates were reviewed?

2019- annually

When was the last time the water rates were changed? If so, how were they changed?

2016 - Increased \$25 per quarter per service connection

Types of Accounts Maintained by the Water System (check all that apply):

Operating Account Reserve Account Emergency Account Other (list) _____

****Please note that for the purposes of this example, all numbers are fictitious and not necessarily representative of actual costs. For example, Certified Operator costs may vary based on the complexity of water system, division of responsibilities included in contract and if water quality monitoring is conducted by the operator or not. This example is NOT what your costs are supposed to be, just an example made using rough estimates from DPH staff.**

PWS Revenue (complete or attach PWS budget)		Actual Last Year	Budget Current Year	Projected Next Year	Comments
Total Water Usage Revenue:		\$12,705	\$13,090	\$13,600	Plan rate increase to \$200/qtr
Other Fees and Service Charges (late fees, new connection fee, etc.):		--	--	--	
Special Assessments:		--	--	\$4,250	\$250 x17
Secured Funding (e.g. loan):		--	--	--	
Interest:		\$7.87	\$7.95	\$7.99	
Amount transferred from Reserve Fund:		--	--	--	
Amount transferred from Emergency Fund:		\$865.00	--	--	to meet 3 months cash on hand
Other:		--	--	--	
		--	--	--	
TOTAL REVENUE:		\$13,577.87	\$13,097.95	\$17,857.99	

PWS Operating Expenses		Actual Last Year	Budget Current Year	Projected Next Year	Comments
Expenses					
Maintenance:		--	--	--	Covered by Cert. Op/residents
Certified Operator:		\$4,300.00	\$4,400.00	\$4,500.00	
Utilities (power, telephone, internet, etc.):		\$1,015.20	\$1,020.00	\$1,030.00	
Salaries and Benefits:		N/A	N/A	N/A	
Equipment Cost:		--	--	\$1,000.00	Analyzer & chart recorder
Water Quality Sampling & Testing:		\$3,308.76	\$3,400.00	\$3,500.00	

Water Treatment (Chemicals, etc.):		\$1,608.43	\$1,700.00	\$1,800.00	
Capital Improvement Project:		--	--	\$3,000.00	Electrical Improvements Well 1
Rent or Mortgage:		N/A	N/A	N/A	
Insurance:		\$600.00	\$625.00	\$650.00	
Professional Services (property management, legal, accounting, engineering, etc.):		N/A	N/A	N/A	
Training Costs:		N/A	N/A	N/A	
Billing costs:		N/A	N/A	N/A	
Fees (state PWS fee, Annual Secretary of State Filing):		\$175	\$175	\$175	DPH \$125; Sec. filing \$50
Security:		--	--	--	
Debt payments:		\$1,000.00	\$1,000.00	\$1,000.00	
Taxes:		\$47	\$50	\$55	
Amount transferred to Reserve Fund:		--	--	\$1,250.00	New fund; from special assmt.
Amount transferred to Emergency Fund:		--	--	--	
Other:	ASRWVA Dues	\$165	\$165	\$165	
		--	--	--	
TOTAL EXPENSES:		\$12,219.39	\$12,535.00	\$18,125.00	
Net Income/Loss:					
Total Revenue:		\$13,577.87	\$13,097.95	\$17,857.99	
Total Expenses:		\$12,219.39	\$12,535.00	\$18,125.00	
Net Income/loss:		\$ 1,358.48	\$ 562.95	(\$267.01)	

Overall Account Balances	Actual Last Year	Budget Current Year	Projected Next Year	Comments
Operating Account Balance (cash on hand, etc.)				
Opening balance:	\$1,691.52	\$3,050.00	\$3,612.95	
Annual income/loss:	\$1,358.48	\$ 562.95	(\$267.01)	
Ending balance:	\$3,050.00	\$3,612.95	\$3,345.94	
Approx. number of months of operating monies on-hand:	3	3	3	Need at least 3 months
Emergency Fund Account Balance				
Opening balance:	\$2,208.84	\$1,343.84	\$1,343.84	
Annual inflow/outflow:	(\$865.00)	--	--	
Ending balance:	\$1,343.84	\$1,343.84	\$1,343.84	
Reserve Fund Account Balance				
Opening balance:	--	--	--	
Annual inflow/outflow:	--	--	\$1,250.00	From special assessment
Ending balance:	--	--	\$1,250.00	
Required Reserves				
Total Annual Required Reserves:	Unknown	\$54,000.00	\$51,000.00	Reduced for elec. imp. project
Opening Reserve Fund Balance:	--	--	--	
Annual inflow/outflow:	--	--	\$ 1,250.00	
Required Reserves Ending Balance:	--	--	\$ 1,250.00	
Additional Reserves Needed:	Unknown	\$54,000.00	\$49,750.00	
Debt Balance(s)				
Opening Balance:	\$3,500.00	\$2,500.00	\$1,500.00	
Annual Outflow (Payments):	\$1,000.00	\$1,000.00	\$1,000.00	
Ending Balance:	\$2,500.00	\$1,500.00	\$ 500.00	

Fiscal Management Review

How often are the water system revenues and expenses reviewed? By whom and how are they reviewed?

These are reviewed annually by the treasurer with the overall budget. She ensures that we can pay the routine bills which are due and expected over the next year. When there is shortfall, funds are taken from elsewhere in the association's funds, the water emergency account, or a special assessment has been added.

If the water system revenues were insufficient to meet expenses, what steps is the PWS using to rectify the situation including reserving funds for anticipated capital improvements and other reserve purposes such as emergencies and debt expenses?

If shortfall, we raise rates or add special assessment. When we have had to make a major improvement, we issue special assessment. We do not maintain any reserve fund, but have a small emergency fund. We have a small loan from recent water treatment system. The total cost was \$10,000; \$5400 was paid by a special assessment in 2017 and a loan taken for the rest (\$4600). Original loan repayments began in 2018 @ 4% interest with approx. \$2,500 remaining in principal to be paid off in 2022. We plan to charge a special assessment next year to pay for electrical improvements at the well house and will put any excess money into a new reserve fund.

What fiscal controls are in place to ensure that monies are collected and spent appropriately, and the financial needs of the system are met?

Bills are paid by the treasurer. Expected activities are reviewed once a year by the board. If there is an emergency expense, the treasurer will handle the payment.

How many customer accounts were unpaid or delinquent during the year? How are these unpaid or delinquent accounts resolved?

One or two may be unpaid or late. The Association Vice President will contact the homeowner and it is usually resolved in some way. There is no penalty.

SECTION 4. UNACCOUNTED FOR WATER LOSS INFORMATION

“Unaccounted for Water Loss” means water that the small community water system supplies to its distribution system, but never reaches its consumers. Types of unaccounted for water loss can be leaks, main breaks, flushing, tank cleaning, etc. The vast majority of water systems have unaccounted for water loss. It should be noted that unaccounted for water for the purpose of this exercise encompasses both Real Water Loss such as leaks, main breaks, etc. and PWS approved, but Unbilled Water Loss such as water main flushing, treatment backwashing or make up water, firefighting, etc.

Determination of PWS Unaccounted for Water Loss (UWL)

Do you have Unaccounted for Water Loss? YES X NO _____ (zero water loss is rare to non-existent)

If No, How do you know? We typically repair 1-2 water main breaks annually. Bulk deliveries of approximately 2-5,000 gallons per incident

If yes, What is the total annual amount of unaccounted for water loss for your PWS? (use either Option A or Option B below to determine this amount)	29,000 gallons / year
--	-----------------------

****Note: In this Example Plan, Both Sections A and B were completed as reference, but for your specific PWS, only Option A OR Option B would need to be completed.**

Option A: PWS that meters both supply production and distribution consumption

Use the table below to organize your meter reading data and complete the calculation to determine the amount of unaccounted for water loss.

Month	Total Production (Gallons)	Total Distribution (Gallons)	Unaccounted for Water Loss (Real Water Loss & Unbilled Water Loss) (Gallons)
January	19800	17920	1880
February	18100	16680	1420
March	16400	15505	895
April	20300	19070	1230
May	22600	20430	2170
June	40300	38170	2130
July	41700	37430	4270
August	38300	33570	4730
September	33600	31140	2460
October	34100	31490	2610
November	27100	24290	2810
December	26800	24120	2680
Annual Totals	339100	309815	29285
Calculation	Total Production (minus) -	Total Distribution (equals) =	Unaccounted For Water Loss

Option B: PWS that do not include distribution meters must estimate the total amount of unaccounted for water loss

Unaccounted for water loss can be estimated by calculating the total amount of water produced (and/or purchased) and examining water usage trends and applying established estimates on the amount of water used. This option is only for systems that do not utilize distribution meters. Per RCSA Section 19-13-B102(n) public water systems are required to conduct weekly meter readings for each source of supply. Weekly water produced should be tabulated from the meter readings and compiled in order to determine long-term trends. According to record retention requirements, PWS should maintain these records for ten years.

Populate the total amount of water produced (as calculated by adding up all of your source meters weekly readings) for each week of the year in the table below.

Weekly Readings	Year: 2018		Year: 2019		Year: 2020	
Week Number	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ 7 = Gallons/Day)	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ 7 – Gallons/Day)	Meter Readings (Gallons)	Est. Daily Production (Gal Produced/Week ÷ 7 – Gallons/Day)
1	207400	400	599100	657		
2	212200	686	603700	629		
3	218300	871	608100	660		
4	223900	800	614700	625		
5	229700	829	617200	586		
6	234900	743	621300	557		
7	245200	1471	625200	620		
8	257000	1686	631400	550		
9	264800	1114	633600	629		
10	269100	614	638000	743		
11	276800	1100	643200	829		
12	281900	729	649000	700		
13	286800	700	653900	729		
14	293100	900	659000	857		
15	299900	971	665000	760		
16	306100	886	668800	856		
17	311500	771	676500	1057		
18	317900	914	683900	1329		
19	328700	1543	702500	1000		
20	338600	1414	709500	1043		
21	349100	1500	716800	1057		
22	362000	1843	724200	1986		
23	376500	2071	738100	1529		

24	389100	1800	748800	1386		
25	402200	1871	758500	1371		
26	413600	1629	768100	1433		
27	426400	1829	776700	1238		
28	435500	1300	786600	1457		
29	444300	1257	796800	1029		
30	453300	1286	804000	1371		
31	464400	1586	813600	1371		
32	472100	1100	823200	1029		
33	483100	1571	830400	729		
34	493400	1471	835500	1086		
35	499400	857	843100	1700		
36	506400	1000	861800	675		
37	515100	967	864500	800		
38	517500	600	874900	657		
39	523700	886	879500	1050		
40	528800	729	883700	1129		
41	534600	829	891600	357		
42	538900	614	894100	731		
43	544900	857	905800	900		
44	549300	629	912100	1814		
45	556400	710	924800	971		
46	558600	550	931600	850		
47	566000	673	940700	650		
48	574500	850	947000	900		
49	579300	686	952200	743		
50	585900	943	958000	829		
51	590300	629	963100	729		
52	594600	614	968000	490		
Annual Totals	387200		368900			

Use the tabulated production readings above to determine trends and/or look for anomalies such as exceedingly high water usage, etc. Also, by calculating the estimated customer usage, you will be able to easily see trends. To estimate customer usage, take the total gallons produced each month and divide by the number of customers or by the number of service connections. Try to identify the cause for anomalies such as annual flushing programs, water main breaks or service line leaks, etc. Then estimate the amount of unaccounted for water by comparing the anomalies to the typical water production averages. Space is available for 3 years worth of water production readings in order to compare trends which are more easily seen over a longer period of time.

Please note: The Department of Public Health strongly recommends that any long-term solution for reducing unaccounted for water loss should include the addition of distribution meters to allow for more accurate estimates for unaccounted for water loss. In some instances “zone metering” may be an allowable compromise to individual “customer” metering.

Causes for Unaccounted for Water Loss

Check “Yes” or “No” for each category and provide an adequate description for each item checked “Yes”

Yes	No	Category	Description (Size and Number of Occurrences per Year)	Estimated/Actual Volume
X		Water main breaks (Real)	2-3 breaks/year resulting in bulk deliveries	15,000 gallons/yr approx
X		Distribution system leaks (Real)	Unknown but assumed we have a few	unknown
X		Water main flushing (Unbilled)	1/yr	5,000 gallons/yr. approx
	X	Treatment system backwash/process (Unbilled)		
	X	Fire Protection (Unbilled)		
	X	Distribution Bleeder (Unbilled)		
		Other:		
Total Estimated Unaccounted for Water Loss Volume (gallons):				~29,000 estimated
Volume Water Produced in Year (gallons):				387,200 gallons
Estimated Percentage of UWL = UWL ÷ Total Volume Produced in Year:				13.35% UWL

Measures Being Taken to Reduce the Amount of Unaccounted for Water Loss

Check "Yes" or "No" for each category and provide an adequate description for each item checked "Yes"

Yes	No	Category	How Often	Description
	X	Conduct Leak Detection Survey		
X		Water Main Replacement Program	As needed	We replace approximately 150 ft per year based on age and history.
	X	Conduct Routine Water Audits		
	X	Meter Replacement/ Calibration Program		
	X	Trend Meter Reading Data		
	X	Midnight - 4 am Meter Read		
		Other:		

SECTION 5. Annual Update Record- to be completed yearly beginning one year after the completion of the plan. Any changes made to the plan each year during the update should be summarized below for historical records purposes. – Example below

Date of update:	March 2021	Signature of PWS Owner/Legal Contact	<i>al Boardman</i>
Brief description of update (items considered, changes made, etc.): Team has been updated as Stan Roper has stepped down as Association President and Al Boardman is the new President. Level of Service has been updated based on new tracking initiatives. Asset Management Inventory and Capital Improvement Table updated based on emergency maintenance and upgrade projects conducted during previous calendar year. Current rates and budget updated. Current Unaccounted for Water Loss totals have been entered and additional steps being taken to prevent unaccounted for water loss added to the plan.			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			
Date of update:		Signature of PWS Owner/Legal Contact	
Brief description of update (items considered, changes made, etc.):			

