**Connecticut Department of Public Health Drinking Water Section**

**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 use by Small Community PWS to assist PWS in meeting the new statutory requirement of Connecticut General Statutes (CGS) §19a-37e; and help provide safe and adequate drinking water to its customers now and into the future. Small community water systems serving less than 1,000 people are often 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 **fundamental component of PWS ownership and a comprehensive Fiscal and Asset Management Plan (F&AM) is essential for the long-term success of any PWS.** Hopefully, PWS will find this template useful as a tool to assist PWS in organizing and assessing their water system finances and assets. It is anticipated that Small Community PWS can populate this template themselves based on their records and in working with their certified operator. 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. In addition to providing safe and reliable water, PWS that maintain a comprehensive F&AM Plan can boost PWS efficiency, save PWS staff time, improve customer service, tackle increasing costs of infrastructure and support 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 available to continue their asset management journey.

|  |  |
| --- | --- |
| Date Plan Created |  |
| Signature of PWS Owner/Legal Contact |  |
| Printed Name PWS Owner/Legal Contact |  |

**SECTION 1: PWS GENERAL INFORMATION**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Public Water System Name:** |  | **PWSID:** |  | **Town Served:** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **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: | |  | | Total Population Served: | |  |
| Number of Metered Service Connections: | |  | | Interconnections (list, if applicable): | |  |
| Number of Lead Service Lines: | |  | |

**Contact Information**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Contact Type*** | ***Name*** | ***Phone*** | ***Email*** | ***Current Address*** |
| *Owner* |  |  |  |  |
| *Manager* |  |  |  |  |
| *Financial Contact* |  |  |  |  |
| *Chief Certified Operator* |  |  |  |  |
| *Sampler* |  |  |  |  |
| *Head Maintenance Personnel* |  |  |  |  |

**Fiscal and Asset Management Team**

|  |  |
| --- | --- |
| ***Name*** | ***Responsibility*** |
|  |  |
|  |  |
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**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; an existing copy may be attached in lieu of a drawing. Additionally, an up-to-date distribution system map should be attached to the plan to show all distribution system assets.

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| --- |
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**PWS Level of Service (LoS)**

Please fill in the blanks for the metrics below that describe 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 during the last 12 months. | Yes / No; Explain: |  |
| 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: |  |
| **Customer Service** | Provide average water pressure of \_\_\_\_\_ PSI and minimum water pressure of \_\_\_\_\_ PSI throughout the distribution system. | Yes / No; Explain: |  |
| Fewer than \_\_\_\_\_ complaints received regarding color, taste and/or odor per month. | Yes / No; Explain: |  |
| Customers will receive \_\_\_\_\_ hour(s) notice for planned outages. Planned outages will last no longer than 8 hours per event. | Yes / No; Explain: |  |
| **Response Time** | Respond to water quality complaints by the next business day. | Yes / No; Explain: |  |
| Main line breaks will be fixed within \_\_\_\_\_ hours of discovery. Service line breaks will be fixed within \_\_\_\_\_ hours of discovery. | Yes / No; Explain: |  |
| **PWS Manage-ment** | 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: |  |
| 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: |  |
| 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: |  |
| Water rates will be maintained sufficient enough to meet the needs of the water system as outlined in this Plan. | Yes / No; Explain: |  |

**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 Life2 (Yrs)*** | ***Probability of Failure***  ***(1-5) 3*** | ***System Impact***  ***(1-5) 4*** | ***Risk Score***  ***(1-25) 5*** |
| Well |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Well Pump |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Source Meter |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Well/Pump House |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Atmospheric Tank |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Booster Pumps |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Bladder Tank |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Hydropneumatic Tank 6 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Distribution Pipe and all in-line valves and boxes |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Treatment System |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***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 Life2 (Yrs)*** | ***Probability of Failure***  ***(1-5) 3*** | ***System Impact***  ***(1-5) 4*** | ***Risk Score***  ***(1-25) 5*** |
| Hydrants and Blow-offs | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Back-up Generator | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Customer Meters | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Electrical Service | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Telemetry/SCADA or other Remote Monitoring System | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Other | |  |  |  |  |  |  |  |  |  |
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|  | |  |  |  |  |  |  |  |  |  |
| ***1*** | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ***Score*** | ***Condition*** | ***Description*** | ***3*** | ***Score*** | ***Probability of Failure*** | ***4*** | ***Score*** | ***System Impact*** | ***Description*** | | *1* | *Excellent* | *New or relatively new condition. Asset has required little to no preventative or corrective maintenance.* |  | *1* | *Highly Unlikely* |  | *1* | *Insignificant* | *Can continue normal operations of the water system without this asset.* | | *2* | *Good* | *Acceptable condition. It still functions and requires minor preventative or corrective maintenance.* |  | *2* | *Unlikely* |  | *2* | *Minor* | *Redundant systems in place; loss of the asset has a minor impact on the ability of the system to operate.* | | *3* | *Fair* | *Deterioration of the asset can be seen. It needs preventative or corrective maintenance frequently to be able to function.* |  | *3* | *Likely* |  | *3* | *Moderate* | *Some redundancy in place; loss of the asset has a moderate impact on the ability of the system to operate.* | | *4* | *Poor* | *Failure of the asset is likely and will need to be replaced in the next few years.* |  | *4* | *Very Likely* |  | *4* | *Major* | *Greatly reduced capacity (major impact) to operate water system without this asset.* | | *5* | *Very Poor* | *Failure has occurred or is going to occur. Major maintenance is required, or replacement needs to occur.* |  | *5* | *Imminent* |  | *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 a written procedure 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 spaces provided below:

|  |  |  |
| --- | --- | --- |
| **Day-to-Day Operations** | | |
| Task | Frequency | Description |
| Record instantaneous and totalizing meter readings for all sources of supply |  |  |
| Check and record water levels in storage tanks |  |  |
| Inspect pumps, motors and controls |  |  |
| Check chemical solution tanks and record amounts used; replenish tanks |  |  |
| Conduct field operating tests for treatment parameters (pH, Cl2 and PO4 residual) |  |  |
| Check instrumentation for proper signal input/output |  |  |
| Complete security check of pumphouse |  |  |
| Inspect heater/dehumidifier operation |  |  |
| Read customer meters |  |  |

|  |  |  |
| --- | --- | --- |
| **Routine Maintenance** | | |
| Task | Frequency | Description |
| Exercise Valves |  |  |
| Implement flushing program |  |  |
| Insect tank hatches, vents, pipes |  |  |
| Inspect and lubricate pumps |  |  |
| Calibrate chemical feed pumps and/or treatment instrumentation |  |  |
| Inspect and conduct repairs to water system facilities – wellheads, pump house, etc., as needed |  |  |
| Inspect and clean chemical feed lines and solution tanks |  |  |

|  |  |
| --- | --- |
| **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 |  |
| WQ Sampler:  Name and Contact Information |  |

**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)*** |
|  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |
|  | ***Totals:*** | | | |  |  |

**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.

|  |
| --- |
|  |

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.

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**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 | Y / N | Current Rate |  | Frequency of Billing: | Monthly |  | Quarterly |  | Other (Specify): |  |
| Metered Usage | Y / N | Current Rate | \_ \_\_ Base Rate  \_\_ \_ Volume Charge | Frequency of Billing: | Monthly |  | Quarterly |  | Other (Specify): |  |
| Other | Y / N | Current Rate |  | Frequency of Billing: | Monthly |  | Quarterly |  | Other (Specify): |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Average Residential Annual Water Bill |  | Average Commercial Annual Water Bill | |  | Are water rates combined with any other rates/fees? (If yes, list) |  | |
| When was the last time the water rates were reviewed? | | |  | | | |
| When was the last time the water rates were changed? If so, how were they changed? | | |  | | | |

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Operating Account |  | Reserve Account |  | Emergency Account |  | Other (list) |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PWS Revenue**(complete or attach PWS budget) | | **Actual Last Year** | **Budget Current Year** | **Projected Next Year** | **Comments** |
| Total Water Usage Revenue: | |  |  |  |  |
| Other Fees and Service Charges (late fees, new connection fee, etc.): | |  |  |  |  |
| Special Assessments: | |  |  |  |  |
| Secured Funding (e.g. loan): | |  |  |  |  |
| Interest: | |  |  |  |  |
| Amount transferred from Reserve Fund: | |  |  |  |  |
| Amount transferred from Emergency Fund: | |  |  |  |  |
| Other: |  |  |  |  |  |
|  |  |  |  |  |
| **TOTAL REVENUE:** | | $ | $ | $ |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PWS Operating Expenses** | | | **Actual Last Year** | | **Budget Current Year** | | **Projected Next Year** | **Comments** |
| **Expenses** | | | | | | | | |
| Maintenance: | | |  | |  | |  |  |
| Certified Operator: | | |  | |  | |  |  |
| Utilities (power, telephone, internet, etc.): | | |  | |  | |  |  |
| Salaries and Benefits: | | |  | |  | |  |  |
| Equipment Cost: | | |  | |  | |  |  |
| Water Quality Sampling & Testing: | | |  | |  | |  |  |
| Water Treatment (Chemicals, etc.): | | |  | |  | |  |  |
| Capital Improvement Project: | | |  | |  | |  |  |
| Rent or Mortgage: | | |  | |  | |  |  |
| Insurance: | | |  | |  | |  |  |
| Professional Services (property management, legal, accounting, engineering, etc.): | | |  | |  | |  |  |
| Training Costs: | | |  | |  | |  |  |
| Billing costs: | | |  | |  | |  |  |
| Fees (state PWS fee, etc.): | | |  | |  | |  |  |
| Security: | | |  | |  | |  |  |
| Debt payments: | | |  | |  | |  |  |
| Taxes: | | |  | |  | |  |  |
| Amount transferred to Reserve Fund: | | |  | |  | |  |  |
| Amount transferred to Emergency Fund: | | |  | |  | |  |  |
| Other: |  | |  | |  | |  |  |
|  | |  | |  | |  |  |
| **TOTAL EXPENSES:** | | | $ | | $ | | $ |  |
| **Net Income/Loss:** | | | | | | | | |
| Total Revenue: | | $ | | $ | | $ | |  |
| Total Expenses: | | $ | | $ | | $ | |  |
| Net Income/loss: | | $ | | $ | | $ | |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Overall Account Balances** | **Actual Last Year** | **Budget Current Year** | **Projected Next Year** | **Comments** |
| **Operating Account Balance (cash on hand, etc.)** | | | | |
| Opening balance: |  |  |  |  |
| Annual income/loss: |  |  |  |  |
| Ending balance: |  |  |  |  |
| Approx. number of months of operating monies on-hand: |  |  |  |  |
| **Emergency Fund Account Balance** | | | | |
| Opening balance: |  |  |  |  |
| Annual inflow/outflow: |  |  |  |  |
| Ending balance: |  |  |  |  |
| **Reserve Fund Account Balance** | | | | |
| Opening balance: |  |  |  |  |
| Annual inflow/outflow: |  |  |  |  |
| Ending balance: |  |  |  |  |
| **Required Reserves** | | | | |
| Total Annual Required Reserves: |  |  |  |  |
| Opening Reserve Fund Balance: |  |  |  |  |
| Annual inflow/outflow: |  |  |  |  |
| Required Reserves Ending Balance: |  |  |  |  |
| **Additional Reserves Needed:** |  |  |  |  |
| **Debt Balance(s)** | | | | |
| Opening Balance: |  |  |  |  |
| Annual Outflow (Payments): |  |  |  |  |
| Ending Balance: |  |  |  |  |

**Fiscal Management Review**

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

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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?

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|  |

What fiscal controls are in place to ensure that monies are collected and spent appropriately, and the financial needs of the system are met? Who is responsible for collecting water bill/fees from customers?

|  |
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|  |

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

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**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 |  | NO |  | (zero water loss is rare to non-existent) |
| If No, How do you know? |  | | | | | |

|  |  |
| --- | --- |
| 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) |  |

***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 |  |  |  |
| February |  |  |  |
| March |  |  |  |
| April |  |  |  |
| May |  |  |  |
| June |  |  |  |
| July |  |  |  |
| August |  |  |  |
| September |  |  |  |
| October |  |  |  |
| November |  |  |  |
| December |  |  |  |
| **Annual Totals** |  |  |  |
| **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:** | | **Year:** | | **Year:** | |
| **Week Number** | **Meter Readings (Gallons)** | **Est. Daily Production (Gal Produced/Week ÷ # of Days = Gallons/Day)** | **Meter Readings (Gallons)** | **Est. Daily Production**  **(Gal Produced/Week ÷ # of Days – Gallons/Day)** | **Meter Readings (Gallons)** | **Est. Daily Production**  **(Gal Produced/Week ÷ # of Days – Gallons/Day)** |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
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| **Annual Totals** |  |  |  |  |  |  |

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 daily and/or customer usage, you will be able to more easily see trends. To estimate daily usage, divide the total gallons produced each week by the number of days between readings. To estimate customer usage, take the total gallons produced each week 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.

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| **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** |
|  |  | Water main breaks (Real) |  |  |
|  |  | Distribution system leaks (Real) |  |  |
|  |  | Water main flushing (Unbilled) |  |  |
|  |  | Treatment system backwash/process (Unbilled) |  |  |
|  |  | Fire Protection (Unbilled) |  |  |
|  |  | Distribution Bleeder (Unbilled) |  |  |
|  |  | Other: |  |  |
| **Total Estimated Unaccounted for Water Loss Volume (gallons):** | | | |  |
| **Volume Water Produced in Year (gallons):** | | | |  |
| **Estimated Percentage of UWL = UWL ÷ Total Volume Produced in Year:** | | | |  |

**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** |
|  |  | Conduct Leak Detection Survey |  |  |
|  |  | Water Main Replacement Program |  |  |
|  |  | Conduct Routine Water Audits |  |  |
|  |  | Meter Replacement/ Calibration Program |  |  |
|  |  | Trend Meter Reading Data |  |  |
|  |  | Midnight - 4 am Meter Read |  |  |
|  |  | Other: |  |  |

**SECTION 5. Annual Update Record** Complete as necessary each year when plan is updated.

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| --- | --- | --- | --- |
| 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.): | | | |
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