

# The Hawaii DWSRF:

## Development of a Technical, Managerial, and Financial (TMF) Capacity Survey for Public Water Systems (PWSs) in Hawaii

*Developed for:  
Hawaii Department of Health  
Safe Drinking Water Branch*

March 2022

# Acknowledgements

This research was funded by the US Environmental Protection Agency (EPA) through the Region 9 Environmental Finance Center (EFC) at California State University, Sacramento (Sacramento State), and the Environmental Finance Center Network (EFCN). Hawaii's Department of Health, Safe Drinking Water Branch, provided in-kind services.



# Table of Contents

1	Introduction.....	4
1.1	Background .....	4
1.2	Objectives and Tasks.....	5
2	Review of Capacity Development Programs and Asset Management Strategies.....	6
2.1	Existing Hawaii Capacity Development Program .....	6
2.2	Existing Hawaii Asset Management Activities.....	6
2.3	Other States’ Capacity Development Programs.....	8
2.4	Other States’ Asset Management Activities.....	8
3	Capacity Development Survey Methodology.....	9
3.1	Selection of TMF Questions and Survey Format.....	9
3.2	Development of Hawaii Capacity Development Survey .....	9
3.3	Survey Distribution .....	10
4	Survey Results .....	11
5	Recommendations.....	14
5.1	Top Non-Asset Management TMF Elements in Need and Possible Support Services .	14
5.2	AWIA Asset Management Strategies .....	14
5.3	Hawaii Sanitary Survey Update .....	15
	References.....	18
	Appendices.....	20

# Development of a TMF Capacity Survey for Public Water Systems in Hawaii

## 1 Introduction

This report documents the development, administration, findings, and recommendations of a Capacity Development Survey aimed at assisting the Hawaii Department of Health (DOH) Safe Drinking Water State Branch (SDWB) in updating its capacity development program. The program is intended to help water systems acquire and maintain adequate technical, managerial, and financial (TMF) capacity, so the systems may consistently provide safe and affordable drinking water to the public.

### 1.1 Background

The Safe Drinking Water Act (SDWA) Amendments of 1996 required that each state implement a capacity development program that includes 3 major components:

1. New Systems (Section 1420[a]): Ensure that all new water systems demonstrate TMF capacity with respect to each national primary drinking water regulation.
2. Capacity Development Strategies (Section 1420[c]): Develop a strategy to assist public water systems in acquiring and maintaining TMF capacity.
3. Assessment of Capacity (Section 1452[a][3]): Do not provide Drinking Water State Revolving Fund (DWSRF) loan assistance to systems which lack the TMF capability to ensure compliance, or if the system is in significant noncompliance with any drinking water standard or variance. The exception is when receiving such assistance will ensure the system's compliance, and the system has agreed to make the necessary changes in operation to ensure that it has the TMF capacity to comply over the long term.

America's Water Infrastructure Act (AWIA) of 2018 amended the SDWA. The amendments require state capacity development programs to include elements that encourage public drinking water systems (PWSs) to develop asset management (AM) plans, and to assist systems in training practitioners to implement such plans. Asset management refers to the process of maintaining a desired level of customer service for PWSs at the best appropriate cost, by inventorying assets, scheduling and tracking maintenance tasks, and managing budgeted and actual annual expenses and revenues (EPA 2019a). State drinking water programs are expected to create capacity development strategies incorporating these AM support services, and submit them to their US EPA regional offices for approval by December 31, 2022.

The state capacity development strategy must include a description of how asset management will be promoted through the following 5-core-questions framework (EPA 2019a):

- a) What is the current state of the utility's assets?
- b) What is the utility's required "sustainable" level-of-service?
- c) Which assets are critical to sustained performance?
- d) What are the utility's best "minimum life-cycle cost" capital improvement plan (CIP) and operations and maintenance (O&M) strategies?
- e) What is the utility's best long-term financing strategy?

## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

The 5-question framework is fully described in EPA’s “Updating State Capacity Development Strategies to Meet America’s Water Infrastructure Act of 2018 Asset Management Requirements” (EPA 2019a).

### 1.2 Objectives and Tasks

The US EPA’s Region 9 Environmental Finance Center (EFC)—operated by the Office of Water Programs (OWP) at California State University, Sacramento—was awarded funds to assist Hawaii’s SDWB in updating its capacity development program. After consulting with SDWB staff and discussing their needs, the team identified the following project objectives:

- Developing and administering a capacity development survey to understand the current state of TMF capacity in Hawaii’s PWSs, inform TMF capacity development priorities and challenges faced by PWSs, and identify plans and resources to address them.
- Assisting SDWB to develop and incorporate an asset management strategy into their capacity development program, per AWIA 2018, using the 5-core-questions framework.
- Updating SDWB’s sanitary survey to better assess system TMF capacity elements, including asset management, and informing SDWB staff of system capacity development needs in the future.

To achieve the identified objectives, the team completed the following general tasks:

- Reviewed capacity development requirements and state implementation programs: The project team reviewed information relevant to SDWB’s current capacity development services, and the new mandates requiring the incorporation of asset management strategies. The project team also gathered information on capacity development programs implemented by other states with demographics similar to Hawaii (e.g., Nevada, Vermont).
- Developed and distributed a capacity development survey: The project team gained insight from reviewing existing capacity development programs, along with feedback from SDWB staff. With this basis, the team developed the survey questions and scoring method, and identified potential elements of expansion for Hawaii’s capacity development program. The project team developed and administered a capacity development survey digitally using Qualtrics Management Software. SDWB staff distributed the survey to Hawaii water systems via email, and allowed approximately 4 weeks for systems to respond.
- Updated sanitary survey TMF capacity questions: The project team updated Hawaii SDWB’s sanitary survey with modified versions of select questions imported from the capacity development survey, including those that address the 5-question asset management framework mandated under AWIA 2018.
- Documented activities and findings: The project team drafted and submitted a report to the Hawaii SDWB staff. The report includes: a description of the regulatory framework of capacity development requirements; a review summary of capacity development programs in Hawaii and several other states; and an explanation of Hawaii’s capacity development survey methodology. The report also summarizes survey findings and recommendations for improving Hawaii public water systems’ TMF capacity. The report also includes asset management strategies that SDWBs can incorporate into their revised capacity development strategy reports, due to regional EPA offices for approval by December 31, 2022.

## 2 Review of Capacity Development Programs and Asset Management Strategies

This section reviews capacity development programs and asset management strategies in Hawaii and other states, which inform the methodology of the current capacity development survey.

### 2.1 Existing Hawaii Capacity Development Program

To comply with SDWA capacity development provisions, Hawaii SDWB developed TMF capacity approaches together with stakeholder groups such as the American Water Works Association (AWWA) Hawaii Section.

In 1999, DOH revised Hawaii Administrative Rules (HAR), Chapter 11-20, to comply with the requirements of Section 1420(a), relating to new water systems. The revised HAR, Chapter 11-20, requires new water systems to demonstrate adequate TMF capacity before they are authorized to begin operations, by meeting the following regulations (SDWB 2019):

- Before starting work on its infrastructure, the new water system must obtain DOH approvals on the new water source and system's construction plans, as well as demonstrate that pre-construction TMF capacity attributes have been met.
- After the new water system's infrastructure is constructed, approval to operate the system is granted once the water system:
  - Obtains DOH approval to use the raw water source to serve a public water system.
  - Provides a licensed professional engineer's certification that the water system has been constructed per approved plans and specifications.
  - Demonstrates that all TMF capacity attributes are met.
- To assist developers in demonstrating TMF capacity for their project, developers may transfer the water system to the community association, who can contract with private companies to operate and maintain the system, including taking on all TMF responsibility.

SDWA capacity development regulations under Section 1420(c)(2) also require states to develop a strategic plan to identify and prioritize existing PWSs that need assistance. Hawaii SDWB has met these regulations to enhance PWS capacity by (SDWB 2019):

- Implementing a self-sustaining water system operator training program on all islands.
- Instituting and implementing a circuit rider program to improve the TMF capacity of water systems using the diversity of technical, hands-on management and consulting services that the circuit rider staff offers.
- Instituting and implementing a sanitary survey program, which includes TMF capacity evaluation elements, to periodically inspect HI PWSs for pathways where insects, rain runoff water, or other contaminants can affect the safety of drinking water.

### 2.2 Existing Hawaii Asset Management Activities

Hawaii engages in various asset management initiatives to promote the requirements of the AWIA 2018, as listed in Table 1. The asset management initiatives that HI SDWB implements include

## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

funding activities, regulatory activities, assistance activities, and internal activities. Asset management initiatives implemented by HI SDWB in 2018 were acquired from EPA (2019b), and those implemented in 2021 were acquired from personal communication with HI SDWB staff.

**Table 1. Hawaii’s asset management (AM) initiatives in 2018 and 2021**

AM Activity	2018 AM Initiative	2021 AM Initiative
SRF priority points	None (under development at the time).	Systems are awarded 5 points for having an AM plan. Another 5 points are awarded for a project with a “fix-it-first” (before it breaks) approach.
Funding for AM planning	Utilizes DWSRF set-aside funding to provide an engineering services contract for small water systems. Funding enables these systems to develop an overall infrastructure condition assessment, identify acute infrastructure needs, and utilize DWSRF funding to meet prioritized needs.	Ongoing from 2018.
Utilizes DWSRF set-asides	Uses set-aside funding to conduct hands-on education for the water utilities to conduct their water loss audits, and funds a circuit rider contract (2018–2021) that assists small water systems with TMF priorities.	Ongoing from 2018.
Required training	May adopt admin rules requiring board training for all new PWSs and select existing PWSs.	Initiative might be suspended. But local technical assistance providers (TAPs) are being directed to specific water systems that need board training.
Sanitary survey	TMF capacity questions are included in the sanitary survey inspector questions.	TMF questions on sanitary survey forms were expanded in 2021.
Planning requirements	Requires all new PWSs to have a sustainable business plan that contains AM elements (e.g., reserve replacement fund).	Planning requirements are part of Hawaii’s TMF capacity review and approval process for new PWSs (same as 2018). Planning requirements refer to a business plan which consists of projected revenues and expenses, reserve funds, and critical infrastructure replacement life funding, as well as financial accounting, billing practices, shutoffs, communications, annual reports, audits, etc.
CUPSS support	Training on Check Up Program for Small Systems (CUPSS) is provided by Rural Community Assistance Corporation (RCAC).	Not a part of the current strategy, but may be considered when more SDWB staff can be hired.
On-site technical assistance	Continues to fund a circuit rider contract (2018–2021) with DWSRF set-asides assisting small water systems with TMF priorities.	Ongoing from 2018.
Considering incentives in SRF program	Provides \$1,000,000 in principal forgiveness funding for small systems in FY19. Principal forgiveness will provide a stimulus for these systems to utilize the DWSRF program for prioritized infrastructure needs.	Ongoing from 2018.

# Development of a TMF Capacity Survey for Public Water Systems in Hawaii

## 2.3 Other States' Capacity Development Programs

Information was also gathered on capacity development programs from other states with similar water system size distributions as Hawaii—i.e., Alaska, Nevada, and Vermont, states with predominantly very small, small, and medium-sized systems (Table 2). Alaska, Nevada, and Vermont's capacity development programs provided case studies that informed Hawaii's capacity development survey.

**Table 2. PWS size distribution, as a percent of the total, for Hawaii, Alaska, Nevada, and Vermont**

State (Population)	Very Small (0–500)	Small (501–3,300)	Medium (3,301–10,000)	Large (10,001–100,00)	Very Large (>100,000)
Alaska	89.0%	10.5%	0.4%	0.0%	0.0%
Hawaii	39.0%	25.4%	22.0%	11.9%	1.7%
Nevada	60.6%	22.2%	10.6%	4.5%	2.0%
Vermont	72.1%	20.1%	6.1%	1.7%	0.0%

Source: EPA 2021.

A review summary of the capacity development programs by Alaska, Nevada, and Vermont (NDEP 2019, DEC 2020a, DEC 2020b, DWGWPD 2020) is included in Table A.1 of Appendix A.

## 2.4 Other States' Asset Management Activities

The project team also collected and reviewed asset management initiatives that Alaska, Nevada, and Vermont implemented in 2018.

According to EPA (2019b), Nevada implemented no asset management initiatives in 2018. Similarly, except for providing a “guidance document” to their water systems, Alaska also did not engage in any asset management activities.

Vermont has an intensive asset management program that engages in a variety of funding, regulatory, assistance, and internal initiatives. Vermont's asset management initiatives in 2018 are compiled in Table A.2 of Appendix A.



### 3 Capacity Development Survey Methodology

This section explains the methodology used to develop and distribute a capacity development survey to Hawaii's PWSs. A complete copy of the survey is available in Appendix B.

#### 3.1 Selection of TMF Questions and Survey Format

Following guidance from Hawaii SDWB staff, who expressed interest in Vermont's Capacity Development and Operator Certification Program, an informational interview was conducted with Vermont's program team to learn about their program's intent, methods, outcomes, and challenges. Upon request, Vermont's team provided a copy of the latest capacity development survey that they had most recently administered.

Initially, Vermont's survey was considered as a potential template after which to model Hawaii's survey. However, after reviewing Alaska's and Nevada's capacity development programs, the project team determined—via an engaged iterative process with HI SDWB staff—that Nevada's survey was better suited to Hawaii's survey objectives by linking TMF questions to areas of services and support where capacity development assistance might be needed.

As a result, Nevada's capacity development survey was selected as a template for the Hawaii capacity development survey for the following reasons:

- Nevada's survey consists of TMF questions that allow PWSs to rate their system's capacity on a scale of 1 to 3, with 1 featuring a description that reflects weak or deficient TMF capacity, and 3 featuring a description that reflects strong TMF capacity.
- The closed-ended formatting of the TMF questions, which provides respondents with a predefined list of answer options, is ideal for a standardized and easy-to-analyze count of TMF capacity across systems.
- Nevada's survey's simple 1-3 scoring scale allows for simple additive aggregation, with which analysts can easily either rank systems by their total capacity development score, or rank TMF areas by performance across PWSs.
- Nevada's survey subcategorizes capacity development areas under the main TMF categories—a formatting method that is detailed, organized, intuitive for respondents, and facilitates grouping survey results by TMF category and services.

#### 3.2 Development of Hawaii Capacity Development Survey

Given the considerations mentioned in Section 3.1, Hawaii's capacity development survey was modeled after Nevada's capacity development survey. Consequently, Nevada's survey was adapted to fit Hawaii's institutional-, goal-, and site-specific considerations. Other adjustments were also made to streamline the survey.

Some of these changes included deleting questions that are not relevant to Hawaii. For example, a managerial question on whether systems have sufficient water supplies to sustain future populations was removed since significant population growth is not a concern in Hawaii. Redundant questions were consolidated to condense the survey and promote engagement from respondent PWSs.

## **Development of a TMF Capacity Survey for Public Water Systems in Hawaii**

As it relates to the asset management requirements of AWIA 2018, Nevada's survey questions also addressed the 5-core-questions framework. Except for rewording 1 of the 5 core questions to more adequately fit AWIA regulations, the core questions were imported verbatim into Hawaii's capacity development survey.

### **3.3 Survey Distribution**

The Hawaii capacity development survey was imported as an online survey into Qualtrics Management Software and distributed digitally by email from Hawaii SDWB staff to Hawaii PWSs. PWSs were able to access the survey using an anonymous link embedded in SDWB's outgoing email. Respondents were able to pause the survey and use the same link to return to the survey and complete it later. If the survey was paused, inputted answers were saved and respondents were able to resume the survey from where they left off.

The survey was distributed on Friday, October 8, 2021.

# Development of a TMF Capacity Survey for Public Water Systems in Hawaii

## 4 Survey Results

Only 11 of Hawaii’s 138 PWSs completed the survey, with 1 PWS not providing any identification information. Technical, managerial, and financial scores were additively aggregated to (1) rank systems by their total capacity development score, and (2) rank TMF subcategory performance across PWSs.

Refer to Table 3 for a breakdown of TMF scores and system rankings of the 11 respondent PWSs.

**Table 3. TMF capacity scores and system rankings of respondent Hawaii PWSs\***

System Number	System Name	Technical Score (/54)	Managerial Score (/99)	Financial Score (/33)	Total TMF Score (/186)	System Rank
HI150	Napuu Water Inc.	46	83	14	143	1
HI248	Kawela Plantation	42	89	12	143	1
HI428	Princeville	44	81	17	142	2
HI164	Kawaihae Unit 1	39	76	22	137	3
HI144	Kilauea Military Camp	49	79	9	137	3
HI325	Laie Water Company	45	75	11	131	4
HI166	Wood Valley Water and Farm Cooperative	32	85	12	129	5
HI156	Hawaiian Shores Community Center	45	72	7	124	6
HI239	Kalaupapa National Historical Park	38	67	9	114	7
HI230	Hoolehua	12	53	30	95	8
Unknown	Unknown	27	10	0	37	9

*\*A system with a higher TMF score and a lower system rank indicates a better TMF performance than a system with a lower TMF score and a higher system rank.*

TMF elements were scored and ranked to determine the strengths and weaknesses across the surveyed systems. TMF elements that scored less than 60 percent of the total score—less than 20 over the maximum score of 33—were deemed as TMF elements that require support services. Table 4 lists the elements identified as needing support. The full scoring and ranking of TMF elements are presented in Appendix C.

## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

**Table 4. TMF elements that require capacity development support\***

TMF Category	TMF Subcategory	Element	Description of Ideal Element Conditions	Is Element Part of Asset Management?
Technical	Mapping	As-built plans	As-built plans should be reviewed and be 100 percent accurate. Plans should also undergo annual review, and be updated as appropriate	Yes
Technical	Mapping	Water system assets	All current water system assets should be identified in maps (e.g., sources, storage tanks, booster pumps). Assets should also be reviewed annually and updated as appropriate	Yes
Technical	Mapping	Geographic information system	CAD/GIS maps should be up-to-date in both digital and paper format. CAD/GIS maps should be reviewed annually	Yes
Technical	Service reliability	Back-up equipment	PWS should maintain or have access to a back-up generator for each water source. PWS should also keep spare parts onsite and be able to obtain spare parts within 24 hours	
Technical	Storage	Storage under operational and emergency conditions	PWS should be able to supply water for at least 2 full days if wells can't be pumped	
Managerial	Emergency response	Communication with health authority in emergency	PWS should notify the health authority when an emergency occurs, and should submit necessary documentation	
Managerial	Record management	Project record keeping	PWS should maintain records regarding well maintenance, pumpage documentation, valve exercising, hydrant/dead-end flushing, backflow prevention assembly testing, etc.	
Managerial	Governing body	Training	At least a majority of the governing body members should attend training on water system management	
Managerial	Governing body	Customer communication	PWS should: <ul style="list-style-type: none"> <li>• open the meeting of the governing body to customers and staff</li> <li>• provide 3-day advance notice of meetings</li> <li>• provide public comment periods prior to each agendized action by the governing body</li> </ul>	
Financial	Budget management	Budget description	PWS budget should: <ul style="list-style-type: none"> <li>• project out 5 years</li> <li>• project all revenues and expenses</li> <li>• define line items properly and clearly</li> <li>• include a timeline for capital improvements and depreciation reserves</li> <li>• track revenues and expenses separately from general fund and other utilities</li> </ul>	Yes

## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

TMF Category	TMF Subcategory	Element	Description of Ideal Element Conditions	Is Element Part of Asset Management?
Financial	Budget management	Water rate	<p>PWS water rate should:</p> <ul style="list-style-type: none"> <li>• be a “reasonable” water rate that sufficiently covers all operating expenses (including depreciation reserves, debt service, capital improvements)</li> <li>• cover the full current and anticipated costs of providing safe and reliable drinking water</li> <li>• be reviewed and increased annually to keep up with costs</li> <li>• be understood as full cost of service by customers</li> </ul>	Yes
Financial	Billing and collections	Billing practices	PWS should accept all forms of payment: online payment, credit cards, automatic payments, cash, checks, money order, etc.	
Financial	Accounting	Approach to Generally Accepted Accounting Principles (GAAP)	PWS should have staff who are qualified in financial management and use GAAP	
Financial	Budget Management	Short-lived assets reserves	PWS should have funding to replace short-lived assets over the next 5–6 years	Yes
Financial	Budget Management	Capital reserve(s)	PWS should have a plan in place to finance long-term capital investments to the system	Yes
Financial	Budget Management	Operating cash reserve(s)	PWS should have enough set aside to cover expenses that occur before all payments come in	Yes
Financial	Billing and Collections	Approach to overdue accounts	Less than 10 percent of the PWS’s accounts should be overdue. PWS should enforce policies that address late payments	
Financial	Accounting	Financial record keeping	PWS should maintain excellent financial records that are available for review	
Financial	Budget Management	Emergency reserve(s)	PWS should have enough funding available to cover the most expensive component of the system	Yes
Financial	Accounting	Financial software	PWS should use widely accepted finance management software (Caselle, Inhance, Quickbooks, etc.)	Yes

*\*TMF elements scoring less than 60 percent of the total score were identified as needing support.*

# Development of a TMF Capacity Survey for Public Water Systems in Hawaii

## 5 Recommendations

This section identifies the top 10 TMF elements for which Hawaii systems need support (based on the capacity development survey results), and identifies possible resources available to address those needs. Additionally, this section lists asset management strategies that the Hawaii SDWB was implementing in 2021. It also lists some potential resources to develop and upgrade asset management plans, and to provide relevant training. Information on asset management strategies (Section 5.2) is intended to help Hawaii SDWB staff address AWIA’s mandate that state drinking water programs must submit capacity development strategies incorporating AM support services to their EPA regional offices for approval, by December 31, 2022.

### 5.1 Top Non-Asset Management TMF Elements in Need and Possible Support Services

Ten out of the 20 identified TMF elements that require capacity development support in HI are not related to asset management and the 5-core-question framework. Table 5 lists capacity development resources for non-asset-management related TMF elements.

**Table 5. Top 10 Non-Asset-Management TMF Elements in Need and Potential Capacity Development Resources**

TMF Element	Capacity Development Resources
Back-up equipment	<ul style="list-style-type: none"> <li>• Provide funding for needed equipment</li> <li>• Provide planning/design support from technical assistance (TA) providers</li> </ul>
Storage in operational/emergency conditions	
Communication with health authority in emergencies	<ul style="list-style-type: none"> <li>• Provide training and assistance in updating/developing plans from TA providers</li> <li>• <a href="#">EPA Emergency Response Resources</a></li> </ul>
Governing body training	<ul style="list-style-type: none"> <li>• Provide training for the governing body by TA providers</li> </ul>
Customer communication	<ul style="list-style-type: none"> <li>• Provide assistance for customer communication practices from TA providers</li> <li>• New England Water Works Association’s “Basic Training” for Drinking Water Board Members <a href="#">On-line Course Reference Guide 2012</a> (NEWWA 2012)</li> <li>• American Water Works Association <a href="#">E-Learning Courses</a> on management and leadership styles, roles, and responsibilities</li> </ul>
Project record keeping	<ul style="list-style-type: none"> <li>• Provide training and assistance in updating/developing financial protocols by TA providers</li> </ul>
Billing practices	
Approach to GAAP	
Approach to overdue accounts	
Financial record keeping	

### 5.2 AWIA Asset Management Strategies

The following section provides a description of efforts by the Hawaii SDWB to comply with EPA’s requirements for incorporating asset management support into state capacity development programs (2019a). Specifically, the materials provide information for the SDWB to 1) encourage

## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

PWSs to develop asset management plans, and 2) assist PWSs to train relevant and appropriate people to implement such plans.

Hawaii's existing asset management strategies follow EPA's 5-core-questions asset management framework (EPA 2019a), which guides PWSs through the development of an asset management plan. Table 6 presents the asset management initiatives that Hawaii SDWB implemented in 2021, and indicates which of the 5 core asset management components they address.

Many resources are available to aid in developing asset management plans. Resource topics span from completing an asset inventory to long-term financial planning. Table 7 lists available resources that Hawaii SDWB can utilize to incorporate asset management support into their capacity development program. Table 7 also notes which resource addresses each component of asset management planning.

### 5.3 Hawaii Sanitary Survey Update

Hawaii's sanitary survey was updated to include 10 additional questions to help address the asset management framework mandated under AWIA 2018. These questions were modified versions of select questions from Hawaii's capacity development survey. The addition of these questions to Hawaii's sanitary survey will provide the Hawaii SDWB with the ability to track asset management needs longitudinally, and to inform future efforts that encourage TMF capacity development. Two questions concerning potential contaminant sources were added to the technical capacity section; 6 questions concerning technical assistance, inventory, and emergency response were added to the managerial capacity section; and 2 questions concerning emergency expenses and capital improvements were added to the financial capacity section.

Appendix D provides a copy of Hawaii's updated sanitary survey form.

## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

**Table 6. Asset management (AM) strategies implemented by HI SDWB in 2021, and their respective core components**

AM Activity	2021 AM Initiative	What is the current state of the utility's assets?	What is the utility's required "sustainable" level-of-service?	Which assets are critical to sustained performance?	What are the utility's best "minimum life-cycle cost" CIP and O&M strategies?	What is the utility's best long-term financing strategy?
SRF priority points	Systems are awarded 5 points for implementing an AM plan. Another 5 points are awarded for a project with a "fix-it-first" (before it breaks) approach.	X	X	X	X	X
Funding for AM planning	Utilizes DWSRF set-aside funding to provide an engineering services contract for small water systems so that those systems can develop an overall infrastructure condition assessment, identify acute infrastructure needs, and utilize DWSRF funding to meet prioritized needs.	X		X		
Utilizes DWSRF set-asides	Uses set-aside funding to conduct hands-on education for the water utilities to conduct their water loss audits, and funds a circuit rider contract (2018–2021) that assists small water systems with TMF priorities.  Set-asides are also used to track system performance level of service and critical assets, to assess and identify defining actions that lead to capacity improvements.	X	X	X		
Required training	Local Technical Assistance Providers (TAPs) are directed to specific water systems that need board training. Required board training should include level of service and long-term funding plans.		X	X		X
Sanitary survey	TMF questions were expanded in Hawaii's sanitary survey forms in 2021.	X	X	X	X	X
Planning requirements	Planning requirements are part of Hawaii's TMF capacity review and approval process for new PWSs.				X	X
On-site technical assistance	Continues to fund a circuit rider contract (2018–2021) with DWSRF set-asides that assist small water systems with TMF priorities.	X	X	X	X	X
Considering incentives in SRF program	Provides \$1,000,000 in principal forgiveness funding for small systems in FY19. Principal forgiveness will provide a stimulus for these systems to utilize the DWSRF program for prioritized infrastructure needs.	X		X		X

Source: EPA 2019a.



## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

**Table 7. Resources available to assist HI SDWB in developing and implementing asset management (AM) plans**

Resource	Description	What is the current state of the utility's assets?	What is the utility's required "sustainable" level-of-service?	Which assets are critical to sustained performance?	What are the utility's best "minimum life-cycle cost" CIP and O&M strategies?	What is the utility's best long-term financing strategy?
Asset Management Plan Components and Implementation Tools for Small and Medium Sized Drinking Water and Wastewater Systems (EPA 2020)	Discusses each component of an AM plan. Includes a brief description of the component; a list of implementation tools—including, but not limited to, software, guidance manuals, handbooks, websites, spreadsheets, and more—that can be used to implement that particular AM component; and a description of corresponding Effective Utility Management attribute(s)	X	X	X	X	X
Technical Assistance Request Form (EFCN 2021a)	Free assistance offered by EFCN to systems serving 10,000 or fewer people in creating an AM plan with a focus on managerial and financial topics. Systems interested in requesting assistance from EFCN experts should fill out the <a href="#">form</a>	X	X	X	X	X
Asset Management and Debt Capacity Tool (SW EFC 2021a)	Excel-based worksheet template, developed by the Southwest Environmental Finance Center, for asset inventory and debt capacity tracking. This tool can help systems develop an asset inventory, e.g. determine asset age, condition, and importance, as well as prioritize asset repair and maintenance. This tool also provides a Debt Capacity Worksheet to track financial data for assets	X	X	X		X
Asset Management: A Handbook for Small Water Systems (EPA 2003)	This guide is for owners and operators of small community water systems (CWSs). It presents basic AM concepts and provides the tools to develop an AM plan, including: conducting a thorough asset inventory; prioritizing rehabilitation and replacement of assets; developing an annual estimate of needed reserves and annual budget; and implementing and reviewing an AM plan	X	X	X	X	X
Taking Stock of Your Water System: A Simple Asset Inventory for Very Small Drinking Water Systems (EPA 2004)	Document providing asset inventory worksheets. It also provides guidance on how to use them to conduct a thorough asset inventory and assess the overall state of a water system	X				
A.M. Kan Work! (SW EFC 2021b)	Online guidebook based on Australia's and New Zealand's AM approaches, as contained in the international Infrastructure Management Manual. Contains documents and videos that can help water and wastewater utility owners, operators, managers, and board members assess the status of their operations and develop strategic plans for water and wastewater service	X	X	X	X	X
AM/CMMS Evaluation and Recommendations Report (SW EFC 2021c)	Report that helps utilities determine if they need more sophisticated software, and discusses the various aspects of the software selection process. It walks utilities through integration and upgrade considerations, provides a needs-versus-cost table of several popular AM/CMMS companies, and includes some literature from these companies		X			
EFCN Workshops and Webinars (EFCN 2021b)	A list of available workshops hosted by the EFCN to build TMF capacity for small water systems	X	X	X	X	X

# Development of a TMF Capacity Survey for Public Water Systems in Hawaii

## References

- Alaska Department of Environmental Conservation (DEC). 2020a. *Alaska Capacity Development Program Report for State Fiscal Year 2020*. Juneau, AK.  
<https://test.dec.alaska.gov/media/21682/ak-capacity-dev-annual-report-sfy20.pdf>.
- Alaska Department of Environmental Conservation (DEC). 2020b. *Triennial Capacity Development Report to the Governor: State Fiscal Years 2018–2020*. Juneau, AK.  
<https://dec.alaska.gov/water/technical-assistance-and-financing/capacity-development/>.
- "Develop or Update an Emergency Response Plan." Environmental Protection Agency, accessed January 13, 2022. <https://www.epa.gov/waterutilityresponse/develop-or-update-emergency-response-plan>.
- American Water Works Association ELearning Courses. American Water Works Association, accessed January 14, 2022. <https://www.awwa.org/Events-Education/eLearning-Courses>.
- Environmental Finance Center Network (EFCN). 2021a. Technical Assistance Request Form. Accessed November 5. <https://efcnetwork.org/assistance/request-assistance/>.
- Environmental Finance Center Network (EFCN). 2021b. *Available Workshops: Building TMF Capacity for Small Public Water Systems Program Round 9*.
- Environmental Protection Agency (EPA). 2003. *Asset Management: A Handbook for Small Water Systems*. EPA 816-R-03-016. Washington, DC: Environmental Protection Agency.
- Environmental Protection Agency (EPA). 2004. *Taking Stock of Your Water System: A Simple Asset Inventory for Very Small Drinking Water Systems*. EPA 816-K-03-002. Washington, DC: Environmental Protection Agency.
- Environmental Protection Agency (EPA). 2019a. *Implementation of Capacity Development Program-Related Safe Drinking Water Act Amendments in the America's Water Infrastructure Act*. Memorandum from Jennifer McLain, Direct of the Office of Groundwater and Drinking Water to Water Division Directions Regions I-X. December 2. [https://www.epa.gov/sites/default/files/2019-12/documents/awia\\_sec\\_2012\\_reflections\\_memo\\_508.pdf](https://www.epa.gov/sites/default/files/2019-12/documents/awia_sec_2012_reflections_memo_508.pdf).
- Environmental Protection Agency (EPA). 2019b. *State Asset Management Initiatives*. EPA 800-F-19-002. Washington, DC: Environmental Protection Agency.
- Environmental Protection Agency (EPA). 2020. *Asset Management Plan Components and Implementation Tools for Small and Medium Sized Drinking Water and Wastewater Systems*. EPA 816-B-20-001. Washington, DC: Environmental Protection Agency.
- Environmental Protection Agency (EPA). 2021. Safe Drinking Water Information System (SDWIS) Federal Reporting Services.

## Development of a TMF Capacity Survey for Public Water Systems in Hawaii

- Hawaii Department of Health, Safe Drinking Water Branch (SDWB). 2019. *Report to the Governor on the Effectiveness of the Capacity Development Strategic Plan to Improve Public Water Systems in the State of Hawaii*. Pearl City, HI. [https://health.hawaii.gov/sdwb/files/2019/09/2019-Report-to-Gov.FINAL\\_.pdf](https://health.hawaii.gov/sdwb/files/2019/09/2019-Report-to-Gov.FINAL_.pdf).
- Nevada Division of Environmental Protection (NDEP). 2019. *Nevada's Capacity Development Program: Report to the Governor*. Carson City, NV. <https://ndep.nv.gov/uploads/water-financing-srf-capacitydevelopment-docs/2020-Governors-Report-FINAL.pdf>.
- New England Water Works Association (NEWWA). 2012. “*Basic Training*” for Drinking Water Board Members On-Line Course Reference Guide. New England Water Works Association. <https://www.mass.gov/doc/basic-training-for-drinking-water-board-members-on-line-course-reference-guide/download>.
- Safe Drinking Water Act Amendments of 1996, S.1316, 104th Cong. (1996). <https://www.congress.gov/bill/104th-congress/senate-bill/1316>.
- Southwest Environmental Finance Center (SW EFC). 2021a. Asset Management and Debt Capacity Tool. <https://swefcamswitchboard.unm.edu/am/product/asset-management-and-debt-capacity-tool/>.
- Southwest Environmental Finance Center (SW EFC). 2021b. *A.M. Kan Work!: An Asset Management and Energy Efficient Manual*. <https://swefc.unm.edu/home/amkan/main.php>.
- Southwest Environmental Finance Center (SW EFC). 2021c. *AM/CMMS Evaluation and Recommendations Report*. <https://swefc.unm.edu/home/wp-content/uploads/2021/06/CMMS-General-Recommendation-Report.pdf>.
- Vermont Drinking Water and Groundwater Protection Division (DWGWPD). 2020. *Vermont's Drinking Water Capacity Development Program Annual Report 2020*. Montpelier, VT.

# Appendices

# **Appendix A:**

Review Summary of Capacity Development Programs for  
the States of Alaska, Nevada, and Vermont

**Table A.1.** Capacity Development Strategic Plan regulations implemented to improve Alaska, Nevada, and Vermont public water systems

State	System Type	Actions Taken to Implement Regulations
Alaska	New systems	<ul style="list-style-type: none"> <li>✓ New PWSs undergo a financial review.</li> <li>✓ Assistance is offered to PWSs if the review determines that TMF capacity is insufficient.</li> <li>✓ New systems are tracked for 3 years to record compliance. Non-compliant systems are prioritized for assistance.</li> </ul>
Alaska	Existing systems	<ul style="list-style-type: none"> <li>✓ TMF capacity is biannually assessed by an O&amp;M Best Practice Score. This score is used to prioritize and determine eligibility for funding sources.</li> <li>✓ SRF program provides loans for infrastructure upgrades to acquire and maintain TMF capacity. A minimum O&amp;M Best Practice score is a prerequisite for loan eligibility.</li> <li>✓ EPA Enforcement Targeting Tool (ETT) is used to identify PWSs that are significantly non-compliant with SDWA.</li> <li>✓ A sanitary survey is conducted to identify barriers to regulatory compliance and adequate TMF capacity.</li> </ul>
Nevada	New systems	<ul style="list-style-type: none"> <li>✓ Nevada Division of Environmental Protection (NDEP) and stakeholders identify potential PWSs, add them to a Bureau of Safe Drinking Water (BSDW) tracking list, and prioritize them for follow-up.</li> <li>✓ The owner is contacted to determine the status of the system, then BDSW either initiates the permitting process or requires the owner to provide routine verification of potential regulatory status.</li> <li>✓ Regulatory agencies are informed of potential PWSs, then NDEP works with technical assistance providers to deliver necessary assistance.</li> </ul>
Nevada	Existing systems	<ul style="list-style-type: none"> <li>✓ NDEP uses capacity assessments to determine which systems to prioritize and where to focus technical assistance.</li> <li>✓ Sanitary surveys are routinely conducted to identify deficiencies in TMF capacity. NDEP engages PWS staff to coordinate technical assistance to resolve identified deficiencies.</li> <li>✓ NDEP could resort to formal enforcement to compel a PWS to comply with SDWA.</li> <li>✓ NDEP targets some technical assistance to a Drinking Water Operator Certification Program.</li> </ul>
Vermont	New systems	<ul style="list-style-type: none"> <li>✓ The Drinking Water and Groundwater Protection Division (DWGWPD) determines if a system has adequate</li> </ul>

State	System Type	Actions Taken to Implement Regulations
		<p>capacity based on a list of 8 milestones.</p> <ul style="list-style-type: none"> <li>✓ PWS owner must confer with the capacity development program to demonstrate adequate TMF capacity before a drinking water permit is issued.</li> <li>✓ Alleged violations of regulations are identified and the system is offered technical assistance to address them.</li> </ul>
Vermont	Existing systems	<ul style="list-style-type: none"> <li>✓ Sanitary surveys are conducted triennially by DWGWPD staff to ensure compliance. Systems in need of TMF capacity assistance are referred to the Capacity Development Program (CDP).</li> <li>✓ CDP assists all systems but particularly focuses on small and significantly non-compliant systems.</li> <li>✓ DWSRF monies are withheld from systems lacking adequate capacity unless funds will be used to improve capacity and address non-compliance.</li> </ul>

Sources: **NDEP 2019, DEC 2020a, DEC 2020b, DWGPD 2020.**

**Table A.2.** A summary of asset management (AM) initiatives implemented by the state of Vermont in 2018

AM Initiative Category	AM Activity	AM Initiative Description
Funding	SRF priority points	Priority points are added for projects where a PWS has an approved AM plan (DWSRF only).
Funding	Funding for AM planning	Forgivable AM planning loan funding is available for publicly-owned community water systems (CWSs).
Funding	Utilizes DWSRF set-asides	Uses set-asides to fund AM training workshops, leak detection surveys, and stand-by power evaluations.
Regulatory	Sanitary survey	AM-related questions are asked during the sanitary survey.
Regulatory	Capacity development strategy	Capacity Development Strategy includes AM principles.
Assistance	Training	Education and training are offered through AM training workshops, Vermont Rural Water Association (RWA) classes, and Rural Community Assistance Partnership (RCAP) classes.
Assistance	Outreach	Education and outreach on the benefits of AM plans are ongoing through the Capacity Development Program, as well as through sanitary surveys.
Assistance	CUPSS support	Provides technical assistance to small systems with CUPSS. Currently working with a system to incorporate GIS in with CUPSS data.
Assistance	On-site technical assistance	AM planning resources are discussed during the sanitary survey, and on-site support through the Capacity Development Program is offered to any water system that requests it.
Assistance	Guidance documents	Guidance documents are available on the state website.
Assistance	Questions in capacity assessments	No description provided.
Internal	Training for state staff	Capacity Development and Drinking Water staff have attended various AM trainings, including some by the EFC.
Internal	Considering incentives in SRF programs	No description provided.
Internal	Considering a requirement	No description provided.

Source: EPA 2019.



**Appendix B:**  
**Hawaii Capacity Development Survey**



## Capacity Development Survey

### Introduction

The Office of Water Programs at California State University, Sacramento operates the Environmental Finance Center in EPA Region 9. We provide resources, training, and technical assistance to support and improve the capacity of Region 9 communities. **We are conducting this survey on behalf of the Hawaii Department of Environmental Health (DEH) to gather information that will help inform the types of capacity development assistance they may offer in the near and long term.** To achieve this end, the survey includes questions about technical, managerial, & financial (TMF) capacity such as record keeping, asset management, rate structures, operator status, and infrastructure needs of your system. Your answers to these questions will help DEH develop training, technical assistance or other support for specific TMF capacity topics. Answers to this survey will not be used to inform any specific regulatory actions taken towards a water system.

The DWSRF was established by the 1996 amendments to the Safe Drinking Water Act (SDWA) as a financial assistance program to help water systems and states achieve the health protection objectives of the SDWA. The HI DWSRF provides low-interest loans, as well as some grants and TMF capacity development assistance. The latter is intended to provide systems with adequate TMF capacity with eligible DWSRF grants and loans, as well as promote long term sustainability of drinking water systems throughout Hawaii.

### Instructions:

1. If possible, operators, managers, and board members should meet and complete the survey together. Completing this survey collaboratively is an opportunity for knowledge to be shared between stakeholders and practitioners. Additionally, it supports the accuracy and completeness of the provided information, which will be used to inform the HI DWSRF Capacity Development Support Program.
2. Please answer each question to the best of your abilities.
3. If a question is not applicable to your system, or if you do not wish to answer it for any reason; feel free to leave the question blank. The system will remind you that is blank, but you may still move on to the next page of the survey.
4. If you do not know the answer to a question, mark the most likely answer or select the answer labeled "unknown" (if available).
5. Respondents can pause the survey and complete it later. Inputted answers will be saved and respondents will be able to resume the survey from where they left off.

The survey should take between 45 minutes and one hour to complete, though some systems may take longer.

## System Information

Please enter your system number.

Please enter your system name.

Please enter the name of the town that your system is associated with.

## Mapping

**Technical Capacity: Mapping** - Ideal mapping practices include the following:

The water system should have a digital utility map/service area map of the entire service area that includes the location of each water source, treatment facility, booster pumping station, reservoir, fire hydrant, and pressure zone and control and isolation valve. Service area boundaries should be outlined and the map should identify future growth areas. Precise "As-Built" plans or drawings should be prepared and maintained for all new facilities. The water system should have copies of the actual CAD drawings as well as paper copies.

Choose the answer below that generally describes your system's as-built plans.

- As-built plans have been reviewed and are 100% accurate. As-Built Plans are reviewed and/or updated as changes occur every year.
- As-built plans have been reviewed but are not 100% accurate. As-Built Plans are reviewed and/or updated every 3-5 years.
- As-built plans have not been reviewed in over 5 years, are not accurate, or are not maintained for any facilities.

What is the date (or best estimate) of your system's last update to its as-built plans? If unknown, please enter "unknown" into the text box.

Choose the answer below that generally describes your system's Computer aided Design (CAD) and/or Geographical Information System (GIS) capabilities.

- PWS has up-to-date CAD/GIS maps both in digital and paper format. CAD/GIS maps are reviewed and/or updated as changes occur every year.
- PWS has CAD/GIS maps in both digital and paper format, but they have not been updated to reflect recent water system changes (e.g. adding valves etc.) CAD/GIS maps are reviewed and/or updated every 3-5 years.
- PWS only has maps in paper format. Paper maps have not been reviewed in over 5 years.

What is the date (or best estimate) of your system's last update to its CAD/GIS or paper maps? If unknown, please enter "unknown" into the text box.

Choose the answer below that generally describes your water system assets.

- All current water system assets are identified in maps, including: sources, storage tanks, valves, booster pumps, water lines, hydrants, etc. Current water system assets are reviewed and/or updated as changes occur every year.
- Because maps are not updated annually, some water system assets &/or minor changes have not yet been included. Current water system assets are reviewed and/or updated every 3-5 years.
- Because maps are not updated at all as a general practice, many water system assets/changes have not yet been included. Current water system assets have not been reviewed in over 5 years .

What is the date (or best estimate) of your system's last update to its water system assets? If unknown, please enter "unknown" into the text box.

## Service Reliability

**Technical Capacity: Service Reliability** - Ideal practices to ensure service reliability include ensuring the system meets requirements for water system facilities and back-up power (e.g., wells, pumps, power, etc.) for adequate redundancy.

Choose the answer below that generally describes your system's source redundancy.

- PWS has more than one well that can supply safe drinking water or has an emergency interconnection to a neighboring PWS.
- PWS has a back-up source that can be used but the water is not high quality &/or quantity.
- PWS only has one water source and no emergency sources.

Choose the answer below that generally describes your system's back-up equipment.

- PWS maintains or has access to a back-up generator for each water source. PWS keeps spare parts onsite and can obtain spare parts within 24 hours (e.g. pump).
- PWS has a back-up generator for at least one source. PWS does not keep spare parts onsite but works with a distributor to ensure equipment within 24 hours.
- PWS does not have a back-up generator. PWS does not maintain any spare parts onsite and does not have a spare parts distributor who can provide equipment if there is an emergency.

## Fire Flow & Storage

**Technical Capacity: Fire Flow & Storage** - Ideal fire flow & storage practices include the following:

- The water system should be prepared to provide adequate fire flow and storage in compliance with requirements provided in Division 100, Section 111, Subsection 111.03, Table 100-19.
- Current storage should sustain average day demand for at least two days if wells can't be pumped.

Choose the answer below that generally describes your system's fire flow rate.

- PWS can meet demand for all required flows.
- PWS can meet residential fire demand but cannot meet fire commercial demand.
- PWS cannot meet either residential or commercial fire demand.

Choose the answer below that generally describes your system's storage during operational and emergency conditions.

- If wells can't be pumped, water can be supplied for at least two full days (according to average daily demand).

- If well can't be pumped, storage can supply water for ~ 1 full day (according to average daily demand).
- Storage can supply water for less than 1 day if wells can't be pumped (according to average daily demand).

Choose the answer below that generally describes your system's fire reserve storage.

- In addition to operation/emergency storage, PWS retains storage that can provide fire demand for at least two hours at the suggested commercial flow rate.
- In addition to operation/emergency storage, PWS retains storage that can provide fire demand for less than two hours at the suggested commercial flow rate.
- PWS does not have fire reserve in addition to operational and emergency storage.

## Routine Maintenance

**Technical Capacity: Routine Maintenance** - Routine maintenance can prolong the lifespan of equipment and help identify problems early. Ideal routine maintenance practices include the following:

- The system's infrastructure and related equipment should be well maintained, and routine maintenance should be done to assure performance (e.g., valves exercised, hydrants flushed, equipment inspected and repaired, etc.).

Choose the answer below that generally describes your system's inspection process and how your system addresses problems.

- Source(s) and pumps are inspected daily. Issues are addressed as soon as possible after they are detected.
- Source(s) and pumps are inspected at least weekly. Issues are addressed as soon as possible after they are detected.
- Source(s) and pumps are inspected rarely (once a month or less). There is a significant lag in time to fix identified issues.

Choose the answer below that generally describes your system's valves & hydrants.

- Valves are exercised and hydrants/dead end lines are flushed at least annually.
- Valves and hydrants are exercised/flushed every 2-3 years. Dead end lines are flushed less than annually.

- Valves, hydrants and dead ends are rarely/never exercised or flushed.

## Cross-Connection Control

**Technical Capacity: Cross-Connection Control** - Ideal Cross-Connection Control (CCC)/backflow prevention practices ensure that there are no unprotected connections between the public water system and any source of pollution or contamination which can be discharged or drawn into the public water system as a result of back-siphonage or backpressure and potentially harm consumers.

Choose the answer below that generally describes how your system implements CCC.

- A CCC plan is available and actively being implemented. PWS is surveying facilities and requiring all facilities to install appropriate backflow protection where deemed necessary.
- A CCC plan is available but is not being completely implemented. All new commercial businesses are required to install appropriate protection. No enforcement with established businesses.
- No CCC plan is in place or being implemented. Some businesses have installed appropriate protection of their own accord.

Choose the answer below that generally describes how your system tests CCC and backflow prevention.

- PWS has a certified CCC specialist and a certified backflow tester on staff.
- PWS has a certified backflow tester on staff or PWS works closely with a private testing company on a regular basis.
- No certified testers or specialists are on staff and no working relationship has been formed with a private testing company.

## Water Quality Monitoring & Reporting

**Technical Capacity: Water Quality Monitoring & Reporting** - Ideal water quality monitoring & reporting practices include the following:

- The water system should be meeting monitoring and reporting schedule requirements.
- The water system should be meeting all applicable water quality standards, with no issues in the last three years.

- The water system should be familiar with its current monitoring and reporting requirements, and results should be on file.

Choose the answer below that generally describes how your system approaches water quality issues.

- No (Maximum Contaminant Levels) MCLs or Action Levels (AL) are exceeded and there are no unaddressed or uncorrected violations. Or, if an MCL or AL has been exceeded the PWS has implemented controls to remediate the issue.
- An MCL or AL is exceeded and the PWS is actively working to monitor and control the issue.
- MCLs or AL are exceeded and the PWS has no plans in place to remedy the issue. PWS is a priority system with the Safe Drinking Water Branch (SDWB) and/or is facing formal enforcement action.

Choose the answer below that generally describes how your system approaches water quality monitoring.

- PWS meets all monthly, annual, and 3-year compliance monitoring and reporting requirements to the SDWB on time.
- PWS is usually on time with monitoring and reporting but has missed a couple sampling events within the past three years.
- PWS has missed 3 or more sampling events in the past three years.

Choose the answer below that generally describes how your system notifies the public in case of an MCL/AL exceedance or positive Bac-T test.

- PWS follows all correct protocol for re-testing and public notification in case of an MCL/AL exceedance or positive Bac-T test.
- PWS has had issues with following the correct protocol for re-testing and needed assistance from the SDWB, but with assistance they follow public notification correctly.
- PWS has not or cannot followed public notification procedure correctly.

## Certified Operators

**Technical Capacity: Certified Operators** - Ideal practices concerning certified operators include the following:



- Water system operator(s) should have appropriate certification for the water treatment and distribution system.
- System operator(s) should be on-site and available.
- At least 2 certified operators or operators-in-training (OIT), with the appropriate level of certifications, should be on staff.

Please choose the answer below that generally describes the availability of your system's certified operator.

- More than one operator is onsite or available 24/7.
- Only one operator is available 24/7.
- Certified operator is an off-site contract operator and is only available periodically.

## Sanitary Surveys

**Technical Capacity: Sanitary Surveys** - Ideal sanitary survey practices include the following:

- Management should be familiar with the most recent sanitary survey, and all items on the survey should be addressed.
- Management should also be familiar with the most recent Technical, Managerial and Financial (TMF) Capacity survey and results.

Choose the answer below that generally describes how your system participates in pre-sanitary surveys and capacity surveys.

- PWS participates in pre-sanitary surveys and capacity surveys to identify and remedy potential deficiencies prior to the official sanitary survey. As a result of these surveys, PWS has requested and received technical assistance to improve TMF capacity.
- PWS participates in pre-sanitary surveys and capacity surveys, but does not remedy the issues prior to the official sanitary survey.
- PWS does not participate in pre-sanitary surveys and/or capacity surveys.

Choose the answer below that generally describes how your system has addressed its deficiencies.

- All deficiencies have been corrected or there were no deficiencies.

- Some, but not all, deficiencies have been corrected.
- No deficiencies have been corrected.

## Consumer Confidence Reports

**Managerial Capacity: Consumer Confidence Reports (CCR)** - Ideal practices regarding CCRs include the following:

- Each community public water system must provide its customers an annual consumer confidence report which contains information on the quality of the water delivered by the system.
- The water system performing should be submitting annual consumer confidence reports consistently and on time.

Choose the answer below that generally describes your system's CCR preparation and submittal process.

- PWS is self-sufficient in preparing their CCR and they have been submitted on-time every year for the past 5 years.
- PWS needs limited assistance from SDWB, but largely prepares the document in-house. CCRs may have been submitted late once in the last 5 years.
- PWS completely relies on the SDWB or other assistance providers to prepare the CCR. CCRs have been submitted late 2 or more times in the past 5 years.

Choose the answer below that generally describes how your system shares Information.

- PWS obliges with the mandatory legal requirements of the CCR, and uses the CCR as a tool to promote public relations and share other relevant information.
- CCR only includes the mandatory legal requirements.
- CCR barely meets the mandatory legal requirements.

## Source Protection

**Managerial Capacity: Source Protection** - Source water protection is a proactive way to prevent contaminants from entering a community's drinking water source and is much less expensive than cleaning up contamination or identifying a new source. Ideal source protection practices include the following:

- The water system should identify and locate all major contamination hazards (e.g., waste disposal sites, landfills, animal feedlots, etc.), actual or potential, within the system's service area or in adjacent areas that might impact the system's water source(s) and the water system should have a source water protection plan in place.

Choose the answer below that generally describes your system's approach to Potential Contaminant Sources (PCS).

- All PCS within the PWS's service area have been identified. Controls and monitoring are underway to control each PCS.
- All PCS have been identified, but controls are not in place.
- PWS has not taken steps to identify, document or manage PCS.

Choose the answer below that generally describes your system's Source Water/Wellhead Protection (SWP) policies and ordinances.

- A SWP Plan has been developed and approved by the board and policies and ordinances are in place to protect the SWP area
- A SWP plan has not been developed, but concrete plans are underway to work on a plan and funding has been approved or is actively being sought. Policies/Ordinances designed to protect the SWP area will be or have been drafted for adoption once the SWP plan is approved.
- No SWP plan, policies, or ordinances are in place and the PWS has no plans to develop them.

Choose the answer below that generally describes how often your system updates SWP Maps.

- Maps are reviewed and/or updated as changes occur every year.
- Maps are reviewed and/or updated every 3-5 years.
- Maps have not been reviewed in over 5 years.

What is the date (or best estimate) of the last time your system updated its SWP Maps? If unknown, please enter "unknown" into the text box.

Choose the answer that generally describes how your system engages in public education.

- Public education is ongoing for residents and businesses within the source's contribution area. Signage is posted conspicuously within the SWP area.
- Public education is minimal, i.e. periodic bill inserts. No signage in the SWP area.
- Public education is negligible.

## Records Management

**Managerial Capacity: Records Management** - Ideal record management practices include the following:

- Records of routine maintenance should be kept in an organized manner and location.
- The records should be summarized and presented during regular (monthly or quarterly) board meetings.
- Records should be audited annually.

Choose the answer below that generally describes your system's maintenance records system.

- PWS uses a system to maintain records regarding well maintenance, pumpage documentation, valve exercising, hydrant/dead-end flushing, backflow prevention assembly testing etc. This system can be a simple filing system, an Excel spreadsheet, or software such as CUPSS.
- PWS maintains records of routine maintenance, but no organized system is in place to locate or document specific records and records are incomplete.
- Maintenance recording is negligible.

Choose the answer below that generally describes how often your system audits itself.

- Records of operation and maintenance are summarized and presented to the board at each annual board meeting.
- Records of O&M are summarized and presented periodically at board meetings or only when requested.
- Records are not reviewed or audited.

## Operations & Maintenance Manual

**Managerial Capacity: Operations & Maintenance Manual** - An Operation and Maintenance (O&M) Manual should detail the water system from source to treatment to distribution. Ideal O&M Manual practices include the following:

- Specific details on start up and stop of the system and daily, monthly and yearly maintenance performed on the system.
- It should read as a comprehensive document that someone not familiar with the system can follow.
- The O&M Manual is not solely a compilation of manuals for various pieces of equipment.
- The O&M Manual should be reviewed and updated annually.
- The O&M manual should adequately describe operational activities, daily operational practice, and routine maintenance, and personnel should be well familiar with the O&M Manual, utilizing and referencing it frequently.

Choose the answer below that generally describes the contents of your system's O&M Manual.

- The O&M Manual clearly states the daily/monthly/annual operation of the water system and includes a description of the water sources and distribution system, start and stop procedures and other intricacies of the specific water system that can easily be followed by someone not familiar with the PWS.
- The O&M Manual consists of a collection of specific manuals for various pieces of equipment, but:
  - no summary on how to actually run the PWS or a description of normal operation.OR
  - the information is available, but an actual O&M manual needs to be developed that includes a summary of water system intricacies.
- No O&M manual in any form exists.

Choose the answer below that generally describes the familiarity of your system's personnel with the O&M Manual.

- Personnel are familiar with the contents of the O&M Manual, know where to look for specific information, and refer to the O&M Manual as necessary.
- Personnel have reviewed the O&M Manual only when they were new to the PWS, but have not reviewed the manual since then even though changes to the system have occurred.
- Personnel rarely/never refer to the O&M Manual.

## Emergency Response

**Managerial Capacity: Emergency Response** - Ideal emergency response practices include the following:

- The water system emergency response plan should adequately outline procedures to respond to emergencies.
- The plan should be up to date and available upon request, it should define responsible personnel and provide a clear chain of command and specific responsibilities, it should identify an emergency operations center and communication network, and it should be renewed and updated annually.

Choose the answer below that generally describes how your system plans and reviews its emergency response efforts

- Plan includes:
- immediate steps to take when an emergency occurs
  - a clear chain of command and responsibilities
  - an outline of procedures to assess damage
  - current emergency phone numbers
  - an inventory of resources that may be available upon request
  - emergency procedures to monitor progress of repairs and restoration: communications plan/protocols for system personnel, customers, first responders and media
  - annual review and updates
- Plan is available but is limited in its content:
- chain of command is included but plan lacks clearly defined responsibilities
  - some steps to take when an emergency occurs are included but could be elaborated
  - phone numbers are out of date
  - only updated somewhat regularly during a sanitary survey.
- Either:
- PWS does not have a plan or emergency response procedures are solely limited to a list of phone numbers.
- OR
- If a plan does exist, it is not updated regularly.

Choose the answer below that generally describes your system's emergency response exercises.

- The majority of PWS employees have participated in exercises to practice emergency response within the last two years.
- Less than the majority of PWS employees have participated in exercises to practice emergency response within the last two years.
- PWS has never rehearsed emergency response exercises.

Choose the answer below that generally describes how your system engages in mutual assistance during emergencies.

- PWS is an active member of Hawaii Water and Wastewater Agency Response Networks (HIWARNs) or other mutual assistance network (i.e. neighboring PWS).
- PWS collaborates with their closest neighbor to share equipment in case of emergencies.
- PWS does not participate in any mutual assistance network.

Choose the answer below that generally describes how your system communicates with the health authority when an emergency occurs.

- PWS notifies the health authority when an emergency occurs and submits necessary documentation.
- PWS notifies the health authority when an emergency occurs, but is delayed in submitting the necessary documentation.
- PWS does not notify the health authority.

## Security

**Managerial Capacity: Security** - An ideal water system should have adequate security in place to protect the system's assets.

Choose the answer below that generally describes how SCADA or other telemetry is used to monitor your system.

- PWS utilizes SCADA to monitor the water system remotely and to alert operators when issues arise.
- PWS has some telemetry, i.e. for tank water levels, but it does not monitor the entire system. Operators are alerted when there are low tank levels.
- PWS has no telemetry and the water system must be physically monitored.

Choose the answer below that generally describes the security of your system's assets.

- Assets are housed, fenced, locked and alarmed. An alarm at a facility is transmitted to the operators.
- Assets are housed, fenced and locked.
- Assets are not secured.

## Governing Body

**Managerial Capacity: Governing Body** - An ideal governing body has the following practices:

- The water system governing board should adhere to Open Meeting Law (NRS 241).
- The board should be well trained in understanding applicable regulations, regulatory agencies, rules, ordinances and professional practices in the water supply area.
- Job duties for members of the board should be clearly delineated and there should be an organizational chart.
- The governing board should review and update policies/ordinances related to water system operations regularly and board meetings should be held regularly.

Choose the answer below that generally describes how the governing body is trained.

- At least a majority of governing body members have attended training on water system management.
- Few governing body members have attended training on water system management.
- No governing body members have attended training on water system management.

Choose the answer below that generally describes the level of participation amongst the governing body.

- The governing body holds regular meetings that all members attend.
- The governing body holds meetings on an as-needed basis, but member attendance at meetings is sporadic.
- The governing body does not hold meetings or not all seats on the governing body are filled.



Choose the answer below that generally describes the level of customer communication with the governing body.

- Meetings of the governing body are open to customers and staff
  - At least 3 days advanced notice of meetings is provided
  - Public comment periods are provided prior to each agendized action by the governing body
  - Public comments are included as a separate items on the agenda
- The governing body has procedures for open meetings, but does not regularly follow them.
  - Notice of meetings is inadequate.
  - There is a general public comment period on the agenda at meetings of the governing body
- The governing body does not hold open meetings
  - There is no avenue for public comment to be given to the governing body.

Choose the answer below that generally describes the availability of records concerning the governing body.

- Meeting minutes and other records required by law are accessible to staff, customers and the public in general.
- Meeting minutes and other records required by law are inconsistently maintained or not accessible to customers and staff.
- Meeting minutes and other records required by law are not maintained.

## Type of Policies

**Managerial Capacity: Policies** - Ideal policy practices include the following characteristics:

- Policies enable a water system to establish its business practices regarding personnel, contracts, and customer service (complaints and billing).
- Policies provide a consistent way for a system to respond to recurring situations or unusual conditions. They provide guidance for staff as well as provide information for customers so expectations and responsibilities are clear.
- Policies should be adopted by the governing body or delineated in an ordinance and distributed to staff and made available to customers.
- The size of the utility and number of staff will determine the number and complexity of the policies. Policies do not have to be elaborate or lengthy, but they should be clear.

- The existing policies/ordinances should adequately address day-to-day operations, water conservation, back-flow prevention, late fees, hook-up fees, capacity fees, service charges, meter replacement fees, shut-off and re-connection fees, etc.
- The existing policies should also ensure compliance with regulations.

Choose the answer below that generally describes the status of system-wide policies.

- Clearly written policies are distributed to staff and customers Policies are enforced consistently and fairly.
- There are some written policies but not everyone is aware of them, or there is lax application or enforcement of policies.
- Very few or no policies.

Choose the answer below that generally describes your system's personnel policies.

- Written job descriptions with clearly understood job expectations; clear policies on training, business use of utility cell phones, and vehicles.
- Some personnel policies, but they are not consistent or fairly applied.
- No job descriptions or job expectations.

Choose the answer below that generally describes your system's contracts.

- Written contracts for operations with clearly defined responsibilities.
- Loosely worded written contracts, expectations unclear.
- Only verbal contracts.

Choose the answer below that generally describes your system's approach to customer service.

- Complaints are recorded and responded to within a specified time frame by assigned staff.
  - There is clear information on procedures for new service; payment procedures; late payments, termination of service for non- payment, collection of past due accounts; restoration of service
- Minimal logging of complaints; no staff specifically tasked with responding so response is inconsistent.
  - Policies are not enforced consistently or fairly.

- o No recording of complaints; very inconsistent response or no response at all.
  - o No policy on late payments, past due accounts, or termination of service; poor collection rate

## Communication

**Managerial Capacity: Communication** - It is important for customers to understand the service being provided by the utility. Customer support is the foundation upon which the utility builds support for rate increases, system upgrades, infrastructure replacement, operator salaries and others. Ideal communication practices include the following:

- The water system takes responsibility for educating customers on important issues such compliance with new regulations, the need for water conservation, the importance of backflow prevention, and other issues.
- The water system communicates well with the public.

Choose the answer below that generally describes how your system notifies its customers of its status.

- All required public notifications are completed and distributed, such as: CCRs, violations, boil water notices, etc.
- Some required public notifications are not completed or not distributed effectively.
- Required public notifications are not completed, or PWS does not know or understand requirements.

Choose the answer below that generally describes how your system educates customers about important issues.

- System has developed effective methods of communicating with customers such as: bill stuffers, newsletters, website, radio announcements, etc, and participates in community events such as health fairs, water fairs, etc.
- Some communication with customers, but no thought given to most effective methods.
- No communication with customers about impact of new regulations, water conservation or other topics.

## Staffing

**Managerial Capacity: Staffing** - Ideal staffing practices include:

- The water system should be adequately staffed, and responsible persons should have sufficient time devoted to operations.
- Roles, responsibilities and authorities should be clearly specified, including those for contract operators.

Choose the answer below that generally describes your system's approach to staffing.

- Roles & Responsibilities are clearly defined in job descriptions.
  - Office staff, as well as operators, are able to devote enough time to water system operations, including conducting and documenting routine maintenance, seeking funding for projects, and complying with all federal and state laws.
- Some responsibilities are included in the job description, but the descriptions are incomplete.
  - Office staff and/or operators have difficulty completing all of the mandatory responsibilities in the form of daily and weekly tasks and constantly work overtime to meet requirements.
  - Additional staff would be appreciated and additive to the operation.
- Job descriptions do not include clearly specified roles and responsibilities.
  - Staff has difficulty completing responsibilities in the form of daily, weekly, monthly and yearly tasks and are constantly trying to catch up.

## Capital Improvements/Asset Management

**Managerial Capacity: Capital Improvements and Asset Management** - Ideal capital improvement and asset management practices include the following:

- A system practicing comprehensive asset management knows what assets they have, the condition, criticality and value of each asset, when maintenance will be needed and when replacement of the asset should be considered.
- Asset Management Plans (AMP) that inform Capital Improvement Plans (CIP) by providing a projection of asset maintenance and replacement expenditures.
- In addition to minimizing emergency repair or replacement incidents, AMPs and CIPs are used to budget and justify rate increases.
- Management should be adequately preparing for future capital improvements and for the replacement of aging and failing infrastructure (depreciation).
- There should be an updated capital improvement plan that covers a planning horizon of at least 5 years.
- There should be an up-to-date asset inventory and asset management plan.

- The water system should have a current assessment of the condition of and remaining service life of existing facilities and should have identified critical facilities that if inoperable, would result in a water outage and/or water quality failure.

Choose the answer that generally describes your system's Capital Improvement (CI) preparation and planning horizon

- PWS has developed a CI plan that includes a planning horizon of 10 years and is actively saving money for funding (has dedicated reserve accounts for end of life cycle replacement scenario). PWS is also looking into various financing options.
- PWS has a CI plan with a planning horizon of 5 years, but is not saving money for funding nor have they started to look into their financing options.
- No CI plan has been developed and no funding is being set aside for projects.

Choose the answer that generally describes your system's asset management plan.

- PWS has an inventory of all water system assets that includes:
  - date of installation
  - price when installed
  - anticipated life span
  - a maintenance schedule that will prolong the life of the asset
- PWS has an incomplete inventory of water system assets. Records on installation date, cost and maintenance are lacking.
- No inventory of assets is maintained.

Choose the answer that generally describes your system's prioritization of critical assets.

- PWS has prioritized each water system asset based on criticality (likelihood and consequence of failure) to the water system and remaining service life.
- Incomplete assessment of water system assets criticality to service.
- PWS is unaware of which assets are likely to fail first and/or what maintenance could be done to prolong their service.

Choose the answer that generally describes how your system is preparing for depreciation of assets.

- Funds are being set aside to fully account for depreciation.
- Funds are being set aside for depreciation but at a lower rate than to fully fund the assets.
- Depreciation is not included in budgeting.

## Project Management

**Managerial Capacity: Project Management** - Ideal project management practices include the following:

- The water system ultimately has all responsibility for a public works project regardless of who they may hire to assist with review and documentation.
- System staff, structure, and governance should be well equipped to manage a construction project (e.g., staffing, record keeping, equipment, state and/or federal requirements such as State Prevailing and/or Davis-Bacon wage rates, etc.).

Choose the answer below that generally describes your system's staff experience with construction projects.

- PWS has had successful construction projects in the past and has staff experienced with construction oversight.
- PWS has limited staff but can complete small construction projects. PWS can oversee construction projects with assistance from their engineer and the state.
- PWS has no experience with construction, they would need extensive assistance from their engineer and the state to oversee a project.

Choose the answer below that generally describes your system's project record keeping.

- PWS keeps excellent records documenting progress, wages, equipment, and finances for all projects. Updates are provided to those financing the project as required.
- PWS keeps most records documenting progress, wages, equipment, and finances for projects but some information is lacking. Updates are provided to the financier but only after frequent prompting.
- Records are lacking in content and accountability. PWS has difficulty in providing updates because of poor record keeping.

## Budget Management

**Financial Capacity: Budget Management** - Ideal budget management practices include the following:

- There should be sufficient reserves available for improvements.
- Preventative maintenance or replacement of major system components should not be postponed due to financial limitations.
- The system should be saving money for reserves annually.

Choose the answer below that generally describes your system's budget.

- PWS budget:
  - projects out 5 years
  - realistically projects all revenues and expenses
  - line items are properly defined and easily understood
  - includes a line item for capital improvements and depreciation reserves
  - revenues and expenses are tracked separately from other utilities and the general fund
- PWS budget:
  - projects out 1-2 years
  - line items are properly defined and easily understood
  - includes a line item for some reserves
  - revenues and expenses are not tracked separately from other utilities and the general fund
- PWS budget:
  - covers only the current year
  - missing or understated expenses (sometimes due to lack of revenue)
  - line items may be confusing
  - may include inaccuracies (generally found by the Dept. of Taxation)
  - does not include a line item for some reserves
  - revenues and expenses are not tracked separately from other utilities and the general fund

Choose the answer below that generally describes your system's operating cash reserve(s).

- PWS has enough set aside to cover expenses that occur before all payments come in.
- PWS sometimes does not have cash available to cover expenses that occur before payments come in.
- PWS does not have cash available to cover expenses that occur before payments come in.

Choose the answer below that generally describes your system's emergency reserve(s).

- PWS has enough funding available to cover the most expensive component of the system.
- PWS has some funding available, but not enough to cover the most expensive or vulnerable component of the system.
- PWS does not have any funding available to respond to an emergency.

Choose the answer below that generally describes your system's water rate.

- o PWS charges a 'reasonable' rate for water used, that is, rates are sufficient to cover all operating expenses including depreciation reserves, debt service, capital improvements and emergency reserves
  - o Rates cover the full current and anticipated costs of providing safe, reliable drinking water
  - o Rates are reviewed/increased annually to keep up with costs
  - o Customers understand the full cost of service
- o Rates are sufficient to cover operating expenses and debt service with little left for depreciation reserves or capital improvements
  - o Rates are not reviewed on an annual basis and are increased only when emergent needs arise
  - o Customers do not understand the full cost of service
- o PWS does not know the full cost of service and water rates do not cover operating expenses
  - o Rates are rarely reviewed
  - o There is reluctance on the part of the governing board to consider increases

Choose the answer below that generally describes your system's short-lived assets reserve(s).

- System has funding available to replace short-lived assets over the next 5-6 years.
- System has some funding available to replace short-lived assets over the next 5-6 years.
- System does not have funding available to replace short-lived assets over the next 5-6 years.

Choose the answer below that generally describes your system's capital reserve(s).

- PWS has a plan in place to finance long-term capital investments to the system.
- PWS will be able to finance some, but not all long-term capital investments to the system.
- PWS does not have a plan to finance long-term capital investments to the system and may need a grant to cover future costs.



## Billing and Collections

**Financial Capacity: Billing and Collections** - Ideal billing and collections practices include the following:

- When consumers have various options to pay bills, utilities are more likely to receive payments on-time.
- The current water system billing and collection process should be adequate and efficient, and offer several ways to pay bills (e.g., credit cards, online payments, automatic payments, cash, checks etc.)
- Payments should generally be received on time; there should not be many overdue accounts.

Choose the answer below that generally describes your system's billing practices.

- PWS accepts all forms of payment: online payments, credit cards, automatic payments, cash, checks, money orders, etc.
- PWS accepts credit cards, cash, checks and money orders and is actively pursuing adding the ability to accept online payments or automatic payments.
- PWS accepts cash, checks or money orders and is not interested in or does not have the capability of adding any other forms of payment.

Choose the answer below that generally describes your system's approach to overdue accounts.

- Few accounts are overdue and the PWS enforces policies that address late payments.
- >10% of accounts are overdue and the PWS has not taken collection actions.

## Accounting

**Financial Capacity: Accounting** - Ideal accounting practices include the following:

- Management should retain a certified public accountant and/or management consultant or retain staff that is qualified and uses generally accepted accounting principles (GAAP) in compliance with the Governmental Accounting Standards Board (GASB), the Financial Accounting Standards Board (FASB) and/or National

Association of Regulatory Utility Commissioners (NARUC) in preparation of financial statements and audits.

- The water system should use finance management software (e.g. QuickBooks) and keep well maintained financial records.
- Financial audits should have any findings of significant concern.
- Audits should be available for review.

Choose the answer below that generally describes your system's approach to GAAP (Generally Accepted Accounting Principles).

- PWS has staff that is qualified in financial management and uses GAAP.
- PWS retains a certified public accountant and/or management consultant.
- PWS does not do their own accounting, is not aware of its financial status, and relies on the city or county for financial management.

Choose the answer below that generally describes your system's financial software.

- PWS uses widely accepted finance management software (Caselle, Inhance, QuickBooks, etc.).
- PWS uses personal financial software such as Quicken.
- PWS does not have any financial software or is unable to use it effectively.

Choose the answer below that generally describes your system's record keeping.

- PWS keeps excellent financial records that are available for review.
- PWS keeps most records documenting progress, wages, equipment, and finances for projects but some information is lacking. Updates are provided to the financier but only after frequent prompting.
- PWS does not maintain its financial records, the city or county handles its financial records, and PWS is somewhat weak in its understanding of record keeping.

## Potential Support Topics

Below, there are three lists of broader topics within Technical, Managerial, and Financial (TMF) Capacity that we are considering to offer direct assistance in. Please mark any topic that your system is interested in to help us prioritize this assistance.

Please look over the list of potential Financial Capacity Support topics below and mark any topic your system could use assistance in assessing and addressing. You may select multiple topics.

- Budget management needs
- Billing & collection needs
- Account needs

Please look over the list of potential Managerial Capacity Support topics below and mark any topic your system could use assistance in assessing and addressing. You may select multiple topics.

- Needs associated with water rights
- Consumer confidence report needs
- Source protection practice needs (including developing/updating source protection plans & tools)
- O&M needs (including developing/updating O&M plans & tools)
- Emergency response needs (including developing/updating emergency response plans)
- Security needs
- Governing board needs (including training, participation expectations, roles & responsibilities, stakeholder meetings & communication, inter-board communication, etc.)
- Business practice/policy needs (including personnel management, contracts, & customer service)
- Public relation needs
- Staffing needs, including certified operators & availability
- CIP needs
- Asset inventory needs, including prioritization & depreciation funding needs
- Project management needs

Please look over the list of potential Technical Capacity Support topics below and mark any topic your system could use assistance in assessing and addressing. You may select multiple topics.

- Mapping needs
- Source/equipment redundancy needs

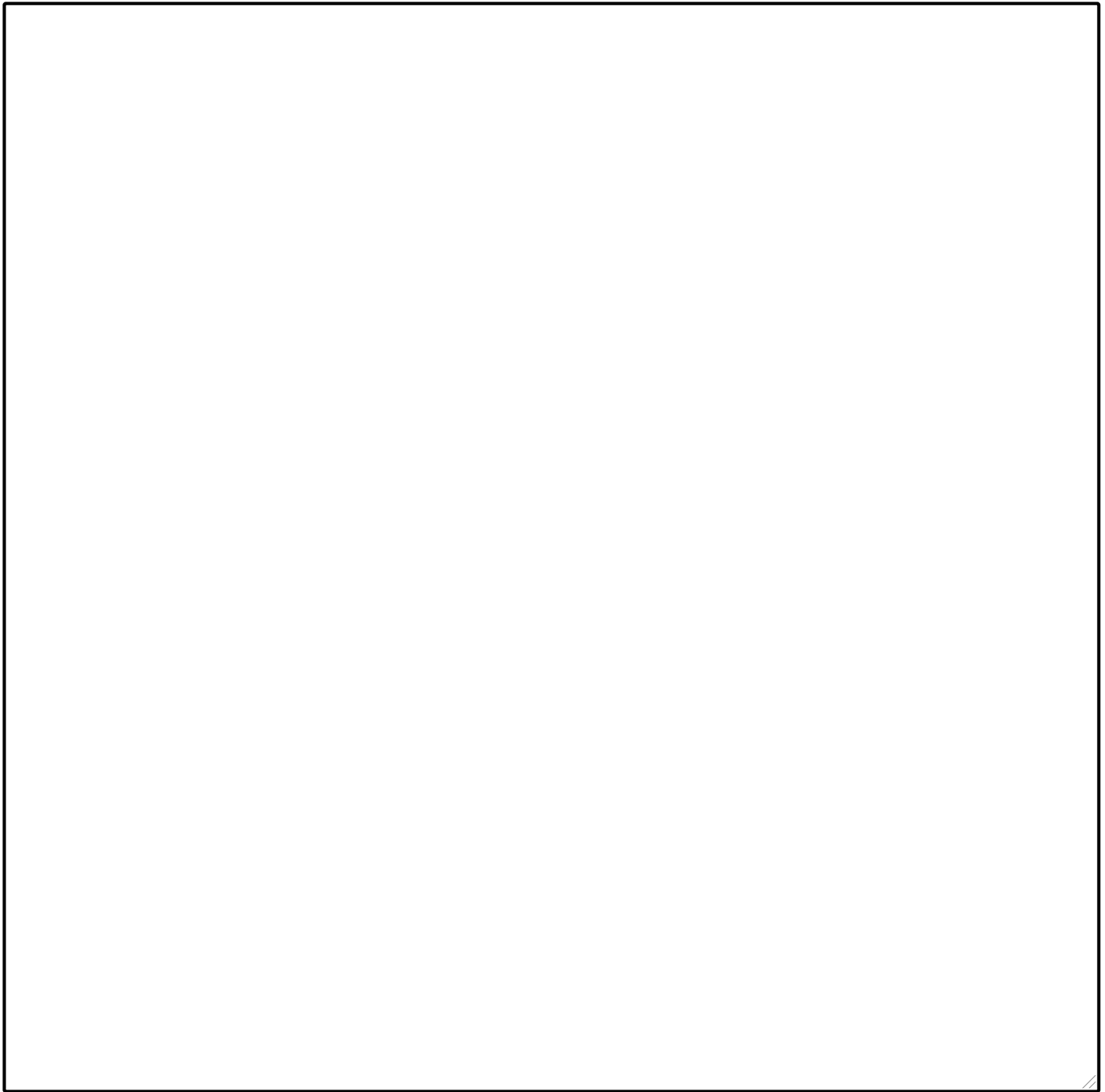
- Flow demand, pressure, and storage needs (including fire flow)
- O&M needs (including developing/updating O&M plans & tools)
- Cross-connection control needs (including developing/updating cross-connection control plan)
- Monitoring & reporting practice needs (including developing/updating plans, schedules, tools)
- Certified operator needs (including numbers & availability)
- Sanitary survey & TMF capacity survey needs

## Finish

Please feel free to use this space to provide any survey-related comments or feedback.

A large, empty rectangular box with a thin black border, intended for providing further clarification on survey answers. The box is currently blank.

Please feel free to use this space to provide any further clarification on one or more of your answers to the survey.



Hawaii DEH Safe Drinking Water Branch, OWP EFC at Sacramento State. 2021.

Powered by Qualtrics



# **Appendix C:**

## **TMF Elements Scoring and Ranking Results**



**Table C.1. Score and rank of technical criteria based on the responses of the 11 surveyed Hawaii PWSs**

Category	Element	Survey Question	Score (/33)	Rank
Sanitary surveys	Addressing system deficiencies	Describe how your system has addressed its deficiencies	33	1
Certified operators	Operator availability	Describe the availability of your system's certified operator	31	2
Water quality monitoring and Reporting	MCL/AL exceedance or positive Bac-T test	Describe how your system notifies the public in case of an MCL/Al exceedance or positive Bac-T test	30	3
Sanitary survey	Participation in pre-sanitary surveys and capacity surveys	Describe how your system participates in pre-sanitary surveys and capacity surveys	29	4
Water quality monitoring and reporting	Water quality monitoring	Describe how your system approaches water quality monitoring	29	4
Routine maintenance	Valves and hydrants	Describe your system's valves and hydrants	27	5
Service reliability	Source redundancy	Describe your system's source redundancy	27	5
Water quality monitoring and reporting	Approach to water quality	Describe how your system approaches water quality issues	27	5
Cross-connection control (CCC)	CCC implementation	Describe how your system implements CCC	25	6
Routine maintenance	Inspection process and addressing of problems	Describe your system's inspection process and how your system addresses problems	22	7
Cross-connection control (CCC)	CCC and backflow prevention testing	Describe how your system tests CCC and backflow prevention	20	8
Fire flow and storage	Fire flow rate	Describe your system's fire flow rate	20	8
Fire flow and storage	Fire reserve storage	Describe your system's fire reserve storage	20	8
Storage	Storage in operational and emergency conditions	Describe your system's storage during operational and emergency conditions	19	9
Service reliability	Back-up equipment	Describe your system's back-up equipment	18	10
Mapping	As-built plans	Describe your system's as-built plans	15	11
Mapping	Water system assets	Describe your water system assets	14	12
Mapping	GIS	Describe your CAD and/or GIS capabilities	13	13

**Table C.2. Score and rank of managerial criteria based on the responses of the 11 surveyed Hawaii PWSs**

Category	Element	Survey Question	Score (/33)	Rank
Consumer Confidence Reports (CCR)	CCR preparation and submittal process	Describe your system's CCR preparation and submittal process	31	1
Communication	Status notification to customers	Describe how your system notifies its customers of its status	29	2
Emergency response	Communication with health authority in emergency	Describe how your system communicates with the health authority when an emergency occurs	29	2
Policies	System approach to customer service	Describe your system's approach to customer service	28	3
Staffing	Approach to staffing	Describe your system's approach to staffing	28	3
Communication	Customer education	Describe how your system educates customers about important issues	27	4
Policies	System contracts	Describe your system's contracts	27	4
Project management	Project record keeping	Describe your system's project record keeping	27	4
Records management	Maintenance records system description	Describe your system's maintenance records system	27	4
Capital Improvement (CI) & asset management	Asset management plan	Describe your system's asset management plan	26	5
Source protection	Project record keeping	Describe your system's Source Water/Wellhead Protection (SWP) policies and ordinances	26	5
Capital Improvement (CI) & asset management	CI preparation and planning horizon	Describe your system's Capital Improvement (CI) preparation and planning horizon	25	6
Capital Improvement (CI) & asset management	Prioritization of critical assets	Describe your system's prioritization of critical assets	25	6
Capital Improvement (CI) & asset management	Depreciation of assets preparation	Describe how your system is preparing for depreciation of assets	24	7
Operations and maintenance (O&M) manual	Content description of O&M manual	Describe the contents of your system's O&M manual	24	7
Policies	System personnel policies	Describe your system's personnel policies	24	7

Category	Element	Survey Question	Score (/33)	Rank
Project management	Staff experience with construction projects	Describe your system's staff experience with construction projects	24	7
Source protection	Approach to Potential Contaminant Sources (PCS)	Describe your system's approach to Potential Contaminant Sources (PCS)	24	7
Policies	Status of system-wide policies	Describe the status of system-wide policies	23	8
Consumer Confidence Reports (CCR)	System information sharing	Describe how your system shares information	22	9
Governing body	Level of participation	Describe the level of participation among the governing body	22	9
Governing body	Availability of records	Describe the availability of records concerning the governing body	22	9
Operations and maintenance (O&M) manual	Staff familiarity with O&M manual	Describe the familiarity of your system's staff with the O&M manual	21	10
Records management	Frequency of system audits	Describe how often your system audits itself	21	10
Emergency response	Planning and reviewing of emergency response efforts	Describe how your system plans and reviews its emergency response efforts	20	11
Emergency response	Mutual assistance in emergencies	Describe how your system engages in mutual assistance during emergencies	20	11
Security	SCADA/telemetry monitoring	Describe how SCADA or other telemetry is used to monitor your system	20	11
Security	Security of system assets	Describe the security of your system's assets	20	11
Source protection	Public education	Describe how your system engages in public education	20	11
Governing body	Training	Describe how the governing body is trained	18	12
Governing body	Customer communication	Describe the level of customer communication with the governing body	17	13
Emergency response	Emergency response exercise description	Describe your system's emergency response exercises	15	14
Source protection	Source Water Protection/Wellhead Protection (SWP)	Describe how often your system updates SWP maps	14	15

**Table C.3. Score and rank of financial criteria based on the responses of the 11 surveyed Hawaii PWSs**

Category	Element	Survey Question	Score (/33)	Rank
Budget management	Budget description	Describe your system's budget	16	1
Budget management	Water rate	Describe your system's water rate	15	2
Accounting	Approach to GAAP	Describe your system's approach to GAAP (Generally Accepted Accounting Principles)	14	3
Billing and collections	Billing practices	Describe your system's billing practices	14	3
Budget management	Short-lived assets	Describe your system's short-lived asset reserve(s)	13	4
Budget management	Capital reserve(s)	Describe your system's capital reserve(s)	13	4
Accounting	Financial record keeping	Describe your system's record keeping	12	5
Billing and collections	Approach to overdue accounts	Describe your system's approach to overdue accounts	12	5
Budget management	Operating cash reserve(s)	Describe your system's operating cash reserve(s)	12	5
Accounting	Financial software	Describe your system's financial software	11	6
Budget management	Emergency reserve(s)	Describe your system's emergency reserve(s)	11	6

**Appendix D:**  
**Updated Hawaii Sanitary Survey**

# HI SDWB Sanitary Survey Form

## Pre-Inspection

Date of Survey	Date
PWS ID No.	
Water System Name	
Water System Owner	
PWS Contact Person	
Phone	
Email Address	

PWS Type	Choose PWS Type
Source	Choose an item.
Consecutive From	Choose an item.
Population Served	
No. of Service Connections	
Average Daily Flow (MGD)	

## Persons Present During Sanitary Survey (provide name and affiliation)

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

## Compliance History

Violations Since Last Sanitary Survey			
Violation Type	Date	Description	Status
Violation Type	Date		
Violation Type	Date		
Violation Type	Date		

## System Management and Operation

Annual Report or Similar Document Provided	Yes, No, N/A
CCR Database Storage and Compliance Status	Satisfactory/Unsatisfactory
Is an Updated Emergency Response Plan Available per HAR 11-19-5 (County Only)	Yes, No, N/A

Pumps, Pump Facilities, and Controls				
Source Name				
Location				
Source Type	Choose Source Type	Source Type	Source Type	Source Type
Source Infrastructure	Choose Infrastructure	Choose Infrastructure	Choose Infrastructure	Choose Infrastructure
USGS Number				
Well Depth (ft)				
Pump Type	Choose Pump Type	Choose Pump Type	Choose Pump Type	Choose Pump Type
Rated Flow (gpm)				
TDH (ft)				
Pump lubrication	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Condition of oil lubricating equipment	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Pump in 100-Year Floodplain	Yes or No	Yes or No	Yes or No	Yes or No
Pump site protected from runoff	Yes or No	Yes or No	Yes or No	Yes or No
Well slab/floor material condition	Choose an item.	Choose an item.	Choose an item.	Choose an item.
<b>Watertight seal for:</b>				
Pump base plate/discharge head openings	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A
Airline tubing for water level measurements?	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A
Pump column vent hole/tubing?	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A
Pump-to-Waste vent elevated and screened/flappered?	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Condition of Pump-to-Waste screen/flapper	Choose an item.	Choose an item.	Choose an item.	Choose an item.
All ARVs are screened	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A
All ARVs are pointed downward	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A	Yes, No, or N/A
Emergency power exists?	Yes or No	Yes or No	Yes or No	Yes or No
Emergency power test frequency	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Emergency power protected from vandalism or the elements?	Yes or No	Yes or No	Yes or No	Yes or No
Identify cross-connections (submerged outlets, standing water, hose bib connections, etc.)				
Recent daily maintenance log entries attached (photo ok)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Questions for Booster Pumps only:</b>				
Pumps From / To				
# of Pumps				
Configuration (# online / # backup)				
Remarks				

Groundwater Source Protection				
Source(s) Name				
Infrastructure immediately downstream	Infrastructure	Infrastructure	Infrastructure	Infrastructure
Emergency Spill Response Plan available?	Yes or No	Yes or No	Yes or No	Yes or No
<b>Source Site:</b>				
In a 100-Year Flood Plain?	Yes or No	Yes or No	Yes or No	Yes or No
Protected from runoff?	Yes or No	Yes or No	Yes or No	Yes or No
Enclosed?	Yes or No	Yes or No	Yes or No	Yes or No
Fenced and gated?	Yes or No	Yes or No	Yes or No	Yes or No
Warning signs posted?	Yes or No	Yes or No	Yes or No	Yes or No
Inappropriate chemicals stored?	Yes or No	Yes or No	Yes or No	Yes or No
Chemical additions?	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Safety Data Sheets (SDS) onsite	Yes or No	Yes or No	Yes or No	Yes or No
Potential Contaminating Activities	1. Choose an item. 2. Choose an item. 3. Choose an item.	1. Choose an item. 2. Choose an item. 3. Choose an item.	1. Choose an item. 2. Choose an item. 3. Choose an item.	1. Choose an item. 2. Choose an item. 3. Choose an item.
Remarks				



GAC Treatment				
Facility Name				
Raw Water Source & Type				
Raw Water Source Flow				
Bypass Piping	Yes/No			
Downstream Infrastructure				
Target Contaminant Removal				
No. of Contactors	# (# on standby)			
Condition of tanks, piping, valves, general site, etc. (e.g., rust, holes, insects, etc.)	Satisfactory/Unsatisfactory			
All ARVs are screened	Yes, No, or N/A			
All ARVs are pointed downward	Yes, No, or N/A			
Overflow line screen/flapper	Satisfactory/Unsatisfactory			
Washout / drain line outlet location (e.g. settling basin, percolation pond, irrigation ditch, stream, drain manhole, inlet)				
Carbon Replacement Schedule				
Method of Spent Carbon Disposal (if known)				
Configuration	Single Pass/Series/Parallel			
Sampling Schedule (List frequency and location)				
O&M Manual On-site?	Yes/No			
Maintenance Log On-site?	Yes/No			

Corrosion Control Treatment	
Facility Name	
Source being Treated	
Purpose for Corrosion Control Treatment	1) Lead Action Level Exceedance; 2) Copper Action Level Exceedance; 3) Preventive Measure
Unit Process	1) Chemical pH Adjustment; 2) Corrosion Inhibitor Addition; 3) Aeration pH Adjustment
Chemical/Manufacturer Name #1	
NSF 60 Certified?	Yes/No
Dosage	
How is chemical dosage determined?	
Unit Redundancy	
Chemical/Manufacturer Name #2	
NSF 60 Certified	Yes/No
Dosage	
How is chemical dosage determined?	
Unit Redundancy	
Proper Chemical Storage	Yes/No
Proper Chemical Labeling	Yes/No
Updated SDS On-Site	Yes/No
Aeration Towers: Vent Insect Screen	Satisfactory / Unsatisfactory / N/A
Updated O&M Manual On-Site	Yes/No
List Daily Log Entries	
List SDWB-Approved Optimal Water Quality Parameters and Testing Frequency & Location, including but not limited to pH, Alkalinity, Calcium, Conductivity, Temperature, Orthophosphate	
Complying with SDWB-Approved Optimal Water Quality Parameters?	Yes/No
Remarks	

Surface Water Treatment	
Facility Name	
Raw Water Source Name & Type	
Raw Water Source Flow (min/max/avg)	
Bypass piping? Describe the bypassed treatment process and last bypass event.	
System infrastructure immediately downstream of WTP	
WTP Capacity	
Source Water Protection for Surface Water/GWUDI Sources	
<p>Under the Long Term 2 Enhanced Surface Water Treatment Rule, a “significant change in the watershed and source water” is defined as any change, which detrimentally affects the raw water delivered to the water treatment plant.</p> <p>Activities that could contribute to significant changes in the watershed and source water include:</p> <ul style="list-style-type: none"> <li>• Changes in land use patterns.</li> <li>• Changes in ownership.</li> <li>• Changes in agricultural cropping, chemical application, or irrigation practices.</li> <li>• Changes in other non-point discharge source activities such as commercial, industrial or residential development.</li> <li>• Natural or man-made stream or reservoir modifications.</li> <li>• New NPDES permits or changes in existing NPDES permits that involve increased loading of contaminants.</li> <li>• NPDES permit violations at wastewater treatment plants and confined animal feedlot operations.</li> <li>• Accidental or illegal waste discharges and spills.</li> <li>• Dramatic natural events such as hurricanes, floods, forest fires, earthquakes, and landslides that may transport or expose contaminants.</li> <li>• Prolonged drought conditions that may warrant special preparatory measures to minimize impacts from waste accumulations that are washed into source waters when precipitation returns.</li> <li>• Status of the water system’s emergency response plan to these significant changes.</li> </ul> <p>The inspector shall answer the next three questions below using these criteria:</p>	
Identify any new significant actual or potential sources of <i>Cryptosporidium</i>	
Identify any significant hydrological changes in the watershed that could affect <i>Cryptosporidium</i> loading	
Inspect the intake structure and identify any modifications to its location or design	

<b>Presedimentation / Raw Water Reservoir</b>	
Capacity	
<b>Pretreatment – Chemical Addition</b>	
Purpose	
Chemical Name	
NSF 60 Certified?	
Dosage	
How is chemical dosage determined?	
Unit Redundancy	
<b>Pretreatment – Prescreening</b>	
Strainer/filter type & sieve/pore size	
Solids disposal?	
Unit Redundancy	
<b>Pretreatment – Other</b>	
Describe pre-treatment process (e.g. PAC, UV, microfiltration, MIEX)	
<b>Coagulation/Flocculation</b>	
Configuration (# online/ #backup/tank shape)	
Coagulant chemical	
How is chemical dosage determined? What is the protocol for flashy or prolonged higher turbidity events?	
Option to manually operate?	Yes/No
<b>Sedimentation</b>	
Configuration (# online/ #backup/tank shape)	
Sludge handling (dewatering & disposal)	

<b>Filtration</b>			
Configuration (# online/ #backup/filter media)			
Backwash frequency & basis?			
Frequency of filter replacement			
Recycling of supernatant or backwash water?			
Is Filter Backwash Recycling Rule requirements met? (i.e. recycled back to the head of the plant) – for conventional and direct filtration plants only			
<b>Post-Treatment</b>			
Purpose	Disinfection	Corrosion Control	Other
Chemical Name			
NSF 60 Certified?			
Dosage			
How is chemical dosage determined?			
Unit Redundancy			
<b>Activated Carbon</b>			
Configuration (# online/ #backup/series or parallel)			
Targeted contaminants			
Solids handling & disposal			
<b>Operation &amp; Maintenance</b>			
Is an updated O&M Manual available on-site for operator consultation?	Yes/No		
Is an updated O&M Manual submitted to DOH every 2 years in July?	Yes/No		
Are daily operations scheduled and listed for plant operators to follow?	Yes/No		
Daily maintenance logs kept onsite?	Yes/No		
List Daily Log entries			
Are appropriate spare parts and tool kits maintained onsite?	Yes/No		



<b>Alarms – List plant alarms and location</b>			
<b>Alarm</b>	<b>Location</b>	<b>Setpoints</b>	<b>Steps Taken After Alarm</b>
<b>Reporting (CT compliance, etc.)</b>			
Reporting violations received in the last 12 months:			
Verify disinfection points, CT monitoring points, calculated volumes, flows and unit processes			
<b>Miscellaneous</b>			
Are site boundaries appropriately fenced & gated?	Yes/No		
Does appropriate warning or “keep out” signage exist?	Yes/No		
Are all building doors appropriately signed (e.g. chlorine, etc.)?	Yes/No		
Does site maintenance control vegetation & vector habitats?	Yes/No		

Disinfection				
Name of Source being disinfected	Enter Source Name	Enter Source Name	Enter Source Name	Enter Source Name
Disinfection method	Disinfection method	Disinfection method	Disinfection method	Disinfection method
Labeled chemical manufacturer's information				
Meets NSF 60	Yes or No	Yes or No	Yes or No	Yes or No
Equipment in enclosed structure	Yes or No	Yes or No	Yes or No	Yes or No
Material of enclosed structure	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Warning signs present	Yes or No	Yes or No	Yes or No	Yes or No
Feed equipment type	Type	Type	Type	Type
Number of back-up units	Quantity	Quantity	Quantity	Quantity
Target residual at far ends of distribution system (ppm)				
Target residual at EPD point (ppm)				
How are feed adjustments made?	Adjustment type	Adjustment type	Adjustment type	Adjustment type
No. of days chemicals are stored (60-90 days max, 30 days preferred)				
Disinfectant feed point location				
Copy of daily log attached	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preventative maintenance program	Yes or No	Yes or No	Yes or No	Yes or No
Critical spare parts and repair kit on hand	Yes or No	Yes or No	Yes or No	Yes or No
Backup power available?	Yes or No	Yes or No	Yes or No	Yes or No
Emergency response plan procedures onsite	Yes or No	Yes or No	Yes or No	Yes or No



	Source Name	Source Name	Source Name	Source Name
<b>For Gas Chlorination</b>				
Chlorinators in a separate room?	Yes or No	Yes or No	Yes or No	Yes or No
Automatic switch-over equipment	Yes or No	Yes or No	Yes or No	Yes or No
Cylinders labeled and chained	Yes or No	Yes or No	Yes or No	Yes or No
Protective cap on stored cylinders	Yes or No	Yes or No	Yes or No	Yes or No
Working scale	Yes or No	Yes or No	Yes or No	Yes or No
Chlorine leak detectors/kits in room	Yes or No	Yes or No	Yes or No	Yes or No
Leak detection/low residual alarms	Yes or No	Yes or No	Yes or No	Yes or No
Positive pressure SCBA availability and training	Yes or No	Yes or No	Yes or No	Yes or No
Chemical handling clothes, safety equipment and tools	Yes or No	Yes or No	Yes or No	Yes or No
Light and exhaust fan switches outside of the room	Yes or No	Yes or No	Yes or No	Yes or No
Panic bars on outward-swinging door to outside	Yes or No	Yes or No	Yes or No	Yes or No
Adequate floor ventilation	Yes or No	Yes or No	Yes or No	Yes or No
Viewing window into room	Yes or No	Yes or No	Yes or No	Yes or No
<b>For Chloramination</b>				
In what order and ratio is ammonia combined with chlorine?				

Finished Water Storage				
Tank Name				
Spillway elevation (ft)				
Capacity (MG)				
Material of construction	Material	Material	Material	Material
Exposure to unauthorized persons	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Surrounding landscape	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Site fenced	Yes or No	Yes or No	Yes or No	Yes or No
Warning signs	Yes or No	Yes or No	Yes or No	Yes or No
Gates locked	Yes or No	Yes or No	Yes or No	Yes or No
Cross-connection potential with onsite irrigation	Yes or No	Yes or No	Yes or No	Yes or No
Site drainage	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Condition of tank exterior	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Condition of access ladder	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Vent insect screen	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Tank access hatch	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Visual water quality	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Overflow hatch	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Level indicator cable opening	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Overflow line screen/flapper	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
Washout drain line	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory	Satisfactory/Unsatisfactory
O & M program	Yes or No	Yes or No	Yes or No	Yes or No
Frequency of inspection of tank roof and interior and exterior surfaces	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Frequency of tank interior cleaning	Choose an item.	Choose an item.	Choose an item.	Choose an item.
Tank isolation by valving	Yes or No	Yes or No	Yes or No	Yes or No
Disinfection onsite	Yes or No	Yes or No	Yes or No	Yes or No
Remarks				

Distribution and Transmission	
System pipe materials	<ol style="list-style-type: none"> <li>1. Choose pipe material and enter size</li> <li>2. Choose pipe material and enter size</li> <li>3. Choose pipe material and enter size</li> </ol>
System pressure range (psi)	
Method of isolation	
Security measures	Choose an item.
Installation and repair procedures for water mains	
Flushing schedule and procedure	
Leak detection control program	Satisfactory/Unsatisfactory
Corrosion control program	
For all surface water, GWUDI, and non-county groundwater systems: Has there been any substantial modifications to the water system, as per HAR 11-20-30, since the last sanitary survey?	Choose an item.
Remarks	

Capacity Evaluation Checklist for Existing PWS

Technical Capacity

OPERATOR CERTIFICATION

Each public water system (except transient, non-community) shall be under the responsible charge of an operator(s) holding a valid certification equal to or greater than the classification of the WTP or DS. Check whether the water system operators are certified. A backup certified operator is recommended.

- System has a certified operator
- System has a backup certified operator
- The system does not have the required certified operators

If the answer is “no” to any of the above, explain.

ADEQUATE WATER SOURCES

Discuss with water system whether the present water sources are adequate for the future (next 5 years). CWRM-issued pump installation permit and the projected number of service connections in the next five years should be provided. Source(s) should meet average and maximum day demand, otherwise, water use limitations per meter must be formally documented and made known to all users.

Are the existing sources of sufficient quantity and quality to meet current and future demand based on County Water System Standards and the Department of Health, respectively?

- Yes    No, explain:

Does the system have a backup source in case of a primary source failure?  Yes    No

Does the system have an emergency connection with other systems?  
 Yes    No

**Technical Capacity**

**POTENTIAL FOR CONTAMINATION OF THE WATER**

Inspect for pathways that could contaminate the finished water at the well site, storage tanks, or distribution system. Systems must take corrective actions as directed by the SDWB.

Are all Potential Contaminant Sources (PCS) within the system's service area identified?

Yes  No

The PWS has uncorrected significant deficiencies:

Yes  No

The PWS has a history of significant deficiencies on every sanitary survey:  Yes  No

Have controls been implemented to remediate the issue that caused an significant deficiency?

Yes  No, explain:

**MONITORING PROGRAMS**

Check water quality monitoring performance.

Bacteriological Monitoring Program

Satisfactory  Unsatisfactory, explain:

Lead and Copper Monitoring Program

Satisfactory  Unsatisfactory, explain:

Chemical Monitoring

Satisfactory  Unsatisfactory, explain:

## Technical Capacity

### BACKFLOW AND CROSS-CONNECTIONS

Check whether backflow prevention devices are used if the water system serves hospitals, farms, golf courses, sewage treatment plants, or other activities that could cause a backflow of contamination into the drinking water.

Does the system have a cross connection control program or policy that specifies appropriate devices, design and location standards, annual testing requirements, and maintains a device inventory and testing history?

Yes    No, explain:

## Managerial Capacity

### ORGANIZATION AND MANAGEMENT CAPABILITY

Is there a clear plan of organization and control among the people responsible for the management and operation of the system?

Yes  No, explain:

Have all Board members completed board training?

Yes  No, explain:

Are Board meeting minutes kept and available to system users?

Yes  No, explain:

Is the system receiving the technical assistance or other support that is needed?

Yes  No, describe any assistance or support that would be useful:

### ASSET MANAGEMENT

The water system should have a complete inventory of all water system assets that includes date of installation, price when installed, anticipated life span, and a maintenance schedule. Additionally, each asset should be prioritized on its critical to the water system.

Is there a complete inventory of all water system assets?

Yes  No, explain what is missing:

Is each asset prioritized based on its likelihood and consequences of failure?

Yes  No, explain what is missing:

If the answer to one or both of the previous questions was “No”, what barriers exist to completing and/or prioritizing the system’s asset inventory?

**Managerial Capacity**

<p><b>EMERGENCY PLANS</b></p> <p>Check whether the water system has an Emergency Response/Risk Assessment Plan (ERP/RA). The plan should include obtaining backup sources of water in drought situations, loss of a well pump or extended loss of electrical power.</p>	<p>Does the system have an ERP/RA plan that addresses infrastructure breakdown, chemical releases, water quality events, natural disasters or events, backup sources of water, communications, the use of first responders? <input type="checkbox"/> Yes <input type="checkbox"/> No, explain:</p> <p>How frequently is this document updated?</p> <p>Does the water system engage in exercises to practice emergency response?  <input type="checkbox"/> Yes <input type="checkbox"/> No, explain:</p> <p>Does the water system participate in a mutual assistance network like HIWARN?  <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
---	--

<p><b>CORRECTION OF PROBLEMS</b></p> <p>The water system should have plans to correct obvious significant problems noted during the survey. The water system should also have corrected earlier identified significant problem(s) in a timely fashion.</p>	<p>List the uncorrected significant deficiencies from the last sanitary survey and check the box if corrected:</p> <p><input type="checkbox"/> 1.</p> <p><input type="checkbox"/> 2.</p> <p><input type="checkbox"/> 3.</p> <p><input type="checkbox"/> 4.</p>
--	--

<p><b>VIOLATIONS</b></p> <p>Check for violations this water system has incurred in the past five years.</p>	<p>List violations incurred in the last five years</p> <table border="1"> <thead> <tr> <th><u>Violation Type</u></th> <th><u>Date</u></th> <th><u>Description</u></th> <th><u>Status</u></th> </tr> </thead> <tbody> <tr> <td></td> <td>Date</td> <td></td> <td></td> </tr> </tbody> </table>	<u>Violation Type</u>	<u>Date</u>	<u>Description</u>	<u>Status</u>		Date		
<u>Violation Type</u>	<u>Date</u>	<u>Description</u>	<u>Status</u>						
	Date								



Financial Capacity	
<p><b>ADEQUATE FINANCIAL BUDGETS</b></p> <p>The annual budget should have sufficient income and cash reserves to pay annual operating expenses, unexpected significant repairs, and planned major work. A dedicated source of income should be identified and its adequacy should be evaluated at least every 5 years.</p>	<p>Is there an adequate annual budget?  <input type="checkbox"/> Yes   <input type="checkbox"/> No, explain:</p> <p>Has the water system completed a rate study or raised rates in the past 5 years?  <input type="checkbox"/> Yes   <input type="checkbox"/> No, explain:</p>
<p><b>NORMAL OPERATION AND MAINTENANCE</b></p> <p>Discuss whether funding levels for operation and maintenance are sufficient.</p>	<p>Are there sufficient incoming revenues and dedicated funds to cover the necessary expenses for the water system to operate?  <input type="checkbox"/> Yes   <input type="checkbox"/> No, explain:</p> <p>Are there sufficient funds to cover an emergency expense (i.e. the most expensive component) for the system?  <input type="checkbox"/> Yes   <input type="checkbox"/> No, explain:</p>
<p><b>CAPITAL IMPROVEMENT PROJECTS (SUSTAINABILITY/RESILIENCY)</b></p> <p>A capital improvement plan should help the water system plan for future needs, maximize existing assets and adjust for climate change impacts.</p> <p>Sustainable facility improvements are indicative of management understanding and support of the water system's needs.</p>	<p>Is there a capital improvement plan (CIP)?  <input type="checkbox"/> Yes   <input type="checkbox"/> No, explain</p> <p>List major capital improvement projects over the last 10-15 years.</p> <p>If there were no capital improvements since the last sanitary survey, is the existing infrastructure adequate?  <input type="checkbox"/> Yes   <input type="checkbox"/> No, explain what upgrades are needed:</p> <p>Does CIP planning emphasize sustainable and resilient infrastructure, e.g. maximize existing assets, consider climate change  <input type="checkbox"/> Yes   <input type="checkbox"/> No</p>

<b>Significant Deficiencies and Recommendations</b>
<b>Significant Deficiencies</b>
<b>Recommendations</b>