Washington’s Drinking Water Strategy

Department of Health Office of Drinking Water

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Division of Environmental Health
Office of Drinking Water

Washington's strategy to protect the people of Washington by ensuring that every new and existing water system acquires and maintains technical, managerial, and financial capacity to equitably deliver safe, reliable drinking water and satisfy the aspirations of its community now and into the foreseeable future.

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For more information

Policy and Planning Section
Office of Drinking Water
Department of Health
PO Box 47822
Olympia, WA 98504-7822
Phone: (360) 236-3100

Holly Myers
Director, Office of Drinking Water

Abbreviations

ASDWA	Assoc. of State Drinking Water Administrators
ATOP	Arsenic Treatment Optimization Program
AWIA	America's Water Infrastructure Act
AWWA	American Water Works Association
BAT	Backflow assembly tester
CCC	Cross-Connection Control
CD	Capacity Development
Comm	Community
DOH	Washington State Department of Health
DWAG	Drinking Water Advisory Group
DWSRF	Drinking Water State Revolving Fund
EDI	Equity, diversity, and inclusion
EFC	Environmental Finance Centers
EPA	United States Environmental Protection Agency
EPH	Environmental Public Health [DOH Division]
ERWoW	Evergreen Rural Water of Washington
ETT	Enforcement Targeting Tool
FPHS	Foundational Public Health Services
GIS	Geographic information system
GMA	[Washington State] Growth Management Act
HEAL	Healthy Environment for All Act
LHJ	Local health jurisdiction
MCL	Maximum contaminant level
MWS	Municipal water supplier
NTNC	Non-transient, non-community [water system]
ODW	Office of Drinking Water
OPAE	Office of Public Affairs and Equity
O&M	Operations and maintenance
PWS	Public water system
PWSS	Public Water System Supervision
RCAC	Rural Community Assistance Corporation
RCW	Revised Code of Washington
SBOH	State Board of Health
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SMA	Satellite management agency
SWAP	Source Water Assessment Program
SWSMP	Small Water System Management Program
TMF	Technical, managerial, and financial
TNC	Transient, Non-community [water system]
UCMR	Unregulated Contaminant Monitoring Rule
UTC	Utilities and Transportation Commission
WAC	Washington Administrative Code
WCS	Washington Certification Services
WFI	Water facilities inventory
WSP	Water System Plan
WUE	Water Use Efficiency

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Foreword to 2022 edition

Washington's natural water portfolio includes scenic rivers, extensive aquifers, and pristine alpine lakes. Our Pacific Northwest culture depends on protecting and sustaining our water resources. Fish, forests, farmers, and residents rely on Washington water for streamflow, irrigation, and domestic supply to homes and businesses. The varied climate and geography invite tourists to Washington for recreational and outdoor sporting activities. While supporting the natural environment for fishing, boating, hiking and growing communities, Washington also harnesses the power of water to generate electricity throughout the state. The Office of Drinking Water (ODW) knows the value of our water resources and commits to promoting the value of safe and reliable water to the people of Washington.

Much of the domestic water supply to communities is provided by public water systems. We all benefit when we trust that our drinking water systems will meet our needs. Income, race, culture, and physical address should not impact access to safe and reliable water supply throughout our state. The drinking water industry faces challenges in building trust and meeting public health demands. All public water systems need to have technical, managerial, and financial capacity to be successful.

Challenges to this industry include changing supply and demand and greater threats from climate change and emerging contaminants. We face an aging workforce and certified operator retirement, mounting affordability issues, and purveyors who lack the skills or capacity to tackle these critical issues. We are encouraged by new opportunities, such as:

- Asset management implementation.
- Improved consumer and community engagement.
- Expanded peer networking.
- Program-focused planning.

In community engagement efforts and staffing our office, we value the importance of diversity, equity, and inclusion. We stand side-by-side with our federal, tribal, state, and local partners in public health. Together, we are building a common vision of equity and optimal health for all.

ODW is committed to working with others to protect the health of the people of Washington by ensuring safe and reliable drinking water. This capacity development is in line with the ODW's vision of supporting our communities to address competing water challenges, such as climate change, water resources, aging infrastructure, and economic development. We ensure and promote the value of safe and reliable drinking water to all people of Washington, now and for generations to come.

1.0 Introduction

Washington's Drinking Water Strategy documents the efforts we undertake in pursuit of ODW's mission statement: We work with others to protect the people of Washington by ensuring safe and reliable drinking water. By helping each new and existing public water system acquire and maintain TMF capacity, water systems can meet the aspirations of their communities now and into the future.

ODW is part of the Environmental Public Health (EPH) division within the Washington State Department of Health (DOH). Our work is public health focused. While we strive to build water system capacity at every level, we focus on our responsibility to protect public health and ensure that the public receives notice of health risks under the authority of our State Board of Health (SBOH).

This chapter describes water system capacity and capacity development. It includes the scope of activities used to improve water system capacity and explains the use of this document within the overall capacity development strategy.

1.1 Water system capacity

Definition. Washington State defines drinking water system capacity in Washington Administrative Code (WAC) 246-290-010 as the system's operational, technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations. The elements of system capacity are:

- **Technical capacity.** The physical infrastructure of the water system, including but not limited to the source water adequacy, infrastructure adequacy, and technical knowledge of the system's operators and staff.
- **Operational capacity.** The functions needed to operate the system in compliance with all applicable requirements, including but not limited to water quality monitoring and routine service functions.
- **Managerial capacity.** The management structure of the water system, including but not limited to ownership accountability, staffing and organization, and effective external linkages.
- **Financial capacity.** The financial resources of the water system, including but not limited to the revenue sufficiency, credit worthiness, ability to obtain financing, and fiscal controls.

Operational capacity is incorporated into the other three categories: technical for the operation and maintenance of the physical plant, managerial for institutional and administrative performance, and financial for implementation of financial policies and controls. Accordingly, we refer only to technical, managerial, and financial (TMF) capacity throughout the remainder this document.

Water system capacity development. Washington pursues a multiple-barrier, risk-based approach to public health, supplemented by a minimum threshold that water systems are required to achieve. This approach is presented in greater detail in chapter 7 Program planning. Because capacity addresses all public water systems activities, we consider all ODW's efforts to be public water system capacity development work.

We do not view water system capacity development as a process focused solely on meeting the minimum standards of public health. Capacity development must also include meeting the ever-higher environmental, demographic, social, and economic aspirations of Washington communities, starting the first day of a water system's operation. Water systems confront new complexities all the time. No water system can be unchanging; they must all rise to greater TMF challenges.

Capacity development recognizes that water system capacity is not a goal or destination, but an evaluation of risk along a spectrum. Consequently, the need to develop water system capacity comes at all points in a water system's lifecycle.

- **Initial capacity.** New systems must be created with enough TMF capacity to reliably deliver safe drinking water to its consumers. This must happen on day one of operation and for the future. Their purveyors must demonstrate that they are ready for the responsibility of providing a service that protects and improves public health.
- **Internal capacity.** Existing systems must maintain their capacity to address internal challenges: staff and board member turnover, aging system assets, and rate-setting. As a result, water systems must maintain or increase their strengths and minimize their weaknesses. (For more, see the landscape assessment chapter.)
- **External capacity.** Existing systems must evolve to tackle external complexities. To maintain or increase their external capacity, water systems must recognize and address industry-wide threats. For example, place of use expansion according to municipal water law through water system plan amendments or pursuing a water right point of use change application process, and seize available opportunities of partnerships, consolidation, and shared services. (For more, see the evolving environment chapter.)

Water system capacity development in Washington. Washington State made it a high priority to develop and implement its water system capacity development strategy. This is part of its goal to ensure the public receives high-quality drinking water. As articulated by Washington's legislature in 1995, we believe the highest level of protection comes from a cooperative partnership between agencies and regulated parties. The relationship emphasizes education and assistance before imposition of penalties.[i] Over the years, Washington State enacted various passive, collaborative, technical, financial, and regulatory mechanisms. These incentivize, encourage, assist, or require water systems to have the TMF capability to ensure a safe and reliable supply of high-quality drinking water. The state developed and refined its comprehensive statewide approach toward assuring that water systems have and improve their capacity throughout its history.

- The SBOH was created in 1891 for the "general supervision of the interests of the health and life of the citizens of the state."
- The 1971 Water Resources Act found that "proper utilization of the water resources of this state is necessary to the promotion of public health and the economic well-being of the state and the preservation of its natural resources and aesthetic values."
- The 1977 Water System Coordination Act was designed to prevent the creation of small, inadequate water systems; encourage local water systems to support each other in the development of water resources; secure future service areas to support service area planning; adopt regional construction and fire suppression standards; and provide for emergency interties.
- Since 1991, we have approved qualified satellite management agencies (SMA) to create a market of experienced water system owners and operators. Starting in 1995, we require new systems access this market by being owned or contracting with an SMA. That way they start off right, advised or led by managers and operators with advanced qualifications.
- We published both a water system design manual and water system planning guidebook. We developed them over the course of decades into increasingly sophisticated and flexible water system planning and engineering standards and guidance. All public water systems subject to the federal Safe Drinking Water Act (SDWA) are required to create and maintain a planning document. New and expanding water systems not subject to SDWA must demonstrate enhanced initial capacity.
- Direct, periodic inspection and technical assistance visits allows us to provide onsite guidance and direction, enhance functional relationships between water systems and their partners in health, including their local health jurisdictions (LHJ).
- Municipal water law was adopted in 2003.[ii] This law enhances water systems' long-term reliability—in effect, increasing water system physical and legal capacity—by protecting public water systems' inchoate water rights. It also helps water systems adopt strategies for reducing distribution system leakage and assist their customers to make wise water choices.

1.2 ODW capacity development

Fundamental office strategy. Everything ODW does is directly or indirectly in support of water system capacity development. As part of our overall approach, we integrate capacity development into our programs and our contracts with local, state, and federal partners. Capacity development is a team effort. The information we gather and relationships we build through our programs help us assess the overall state of the drinking water industry, the health of the communities they serve, and the specific capacity challenges each water system faces. This allows us to focus our efforts on water system needs and assist them in pursuing their community's goals.

Because capacity development is our fundamental office strategy, our office and our partner agencies use a full range of tools to incentivize, encourage, assist, and regulate a wide variety of organizations, including:

- Public water systems (whether subject to SDWA or not),
- Satellite management agencies,
- Regionally coordinated water systems,
- Certified operators,
- Grant and loan recipients, and
- Environmental laboratories that analyze drinking water samples.

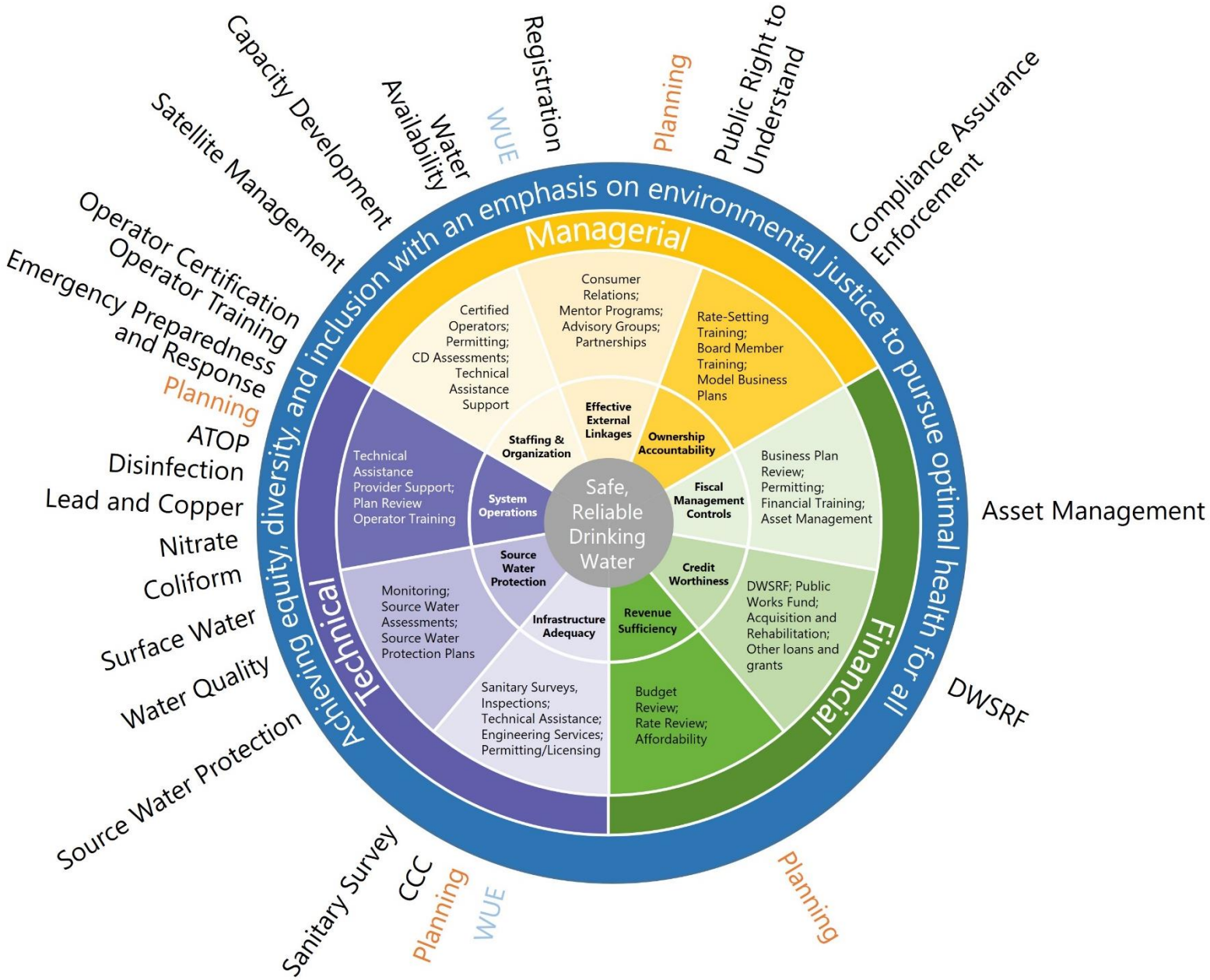
Most community water systems in Washington are self-governing, through private organizations such as homeowners' associations or public agencies such as cities, towns, and special districts. Ideally consumers participate in a democratic process of electing board members and representatives to set rates, level of service, and sustainability of their water system.

Through partnerships with public water systems, we build and maintain capacity primarily through technical and financial assistance. We rely on compliance assurance and enforcement only when necessary.

Elements of Safe and Reliable Drinking Water. We visualize capacity development as a collection of multiple interlocking sectors with safe and reliable drinking water as the central goal. The three components of water system capacity—technical, managerial, and financial—serve as sectors around our target, each with their own subsectors. All of this happens with an emphasis on environmental justice to pursue equity and optimal health for all.

Public Water Systems[iii]	
Group A systems:	**4,159**
Community:	2,219
NTNC:	317
TNC:	1,623
Group B systems:	**13,515**
Total systems:	**17,674**
Community system connections[iv]	
Fewer than 10:	24
10-99:	1,389
100-499:	444
500-999:	117
1,000 or more:	245
Full time population served[v]	
Group A-Comm:	6,565,925
All others:	1,298,475
State population:[vi]	7,864,400

Figure 1: Elements of Safe and Reliable Drinking Water



- Public water systems must have **adequate infrastructure**. We assess infrastructure during sanitary surveys, comprehensive performance evaluations, and special purpose investigations. We also provide value-added engineering and planning review services, along with technical assistance during predesign stages. Water system plan reviews are where ODW requires answers to complex issues through direct conversations and with our written letters that a utility must respond to prior to approval.
- **Source water protection** ensures that water systems take action to protect their sources from contamination. Source water protection focuses on protecting sources to prevent contamination. It prepares them to respond, rather than merely react, to catastrophic events.
- **Systems operations** ensures that water systems have operation and maintenance procedures that can be used by new or backup personnel to run the system. This includes water quality monitoring schedules and emergency response programs.
- Operations are conducted by people, who we address as the **staffing and organization** subsector. This includes identifying backup certified operators and billing staff.
- Organizations need **effective external connections** with outside people and groups, including peer support during emergencies and maintaining a functional relationship with us.
- The community and the system depend on **ownership accountability** to ensure that their needs are satisfied now and into the future. These require effective board member training, and the board's unwavering support for actions that preserve public health and achieve community aspirations.
- Decision-makers need control over the organization to fulfill their responsibilities. This includes **fiscal management controls**, such as developing and maintaining an asset management program and regular, stable rate increases.
- Responsible water systems maintain **credit worthiness** by always paying the water system's bills on time. They inspire confidence by acting in a professional manner toward financing agencies.
- Water systems achieve **revenue sufficiency** when they maintain discipline to ensure that they review their budgets, ensure rates are sufficient to maintain all reasonable reserves for financial resiliency, and maintain both community and customer affordability.

Office of Drinking Water. The state's full range of authority is vested in multiple agencies. We and our public health partners share responsibility for assisting public water systems. In that context, ODW plays specific roles that do not change.

- **Emergency preparedness and response.** Respond to public health emergencies related to drinking water.
- **Protect and improve public health.** Set clear expectations for Washington's public water systems and hold them accountable for protecting public health.
- **Assist public water systems.** Provide funding and technical assistance to support safe and reliable drinking water.

- **Educate.** Educate and inform our partners and the people of Washington about drinking water issues.

ODW programs develop tools to address water system capacity development within ODW's role. The relationship between ODW programs and the elements of capacity they address are depicted in Figure 1: Elements of Safe and Reliable Drinking Water. Programs addressing managerial and especially financial capacity are not as diverse or numerous as the programs addressing technical capacity. This explains why most of our upcoming tools focus on managerial and financial topics (see Section 3.3 New tools).

We implement public health standards adopted or delegated by the SBOH, and operational and managerial standards adopted by the secretary of health. These rules meet or exceed the requirements of the federal SDWA that we administer pursuant to a primacy agreement with EPA. The primacy agreement includes the requirement to have and maintain a capacity development strategy.

ODW as a public health agency. We protect public health as our primary, but not sole, motivation, and that we pursue the priorities established by DOH's transformational plan. Water system purveyors are our partners in public health. ODW does not merely implement and enforce the SDWA, and our capacity development strategy includes other State priorities.

Transformational Plan. The department of health applies a wide variety of strategies, as documented in its transformational plan.[vii] The five departmental priorities are:

- Health and Wellness.
- Health Systems and Workforce Transformation.
- Environmental Health.
- Emergency Response and Resilience.
- Global and One Health.

The vision and commitment for each of these priorities are displayed in Table . We acknowledge these priorities and strategies throughout this document wherever it is being integrated into our work.

1.3 How this document will be used

Washington's drinking water capacity development strategy is a comprehensive, flexible approach to assist public water systems in acquiring and maintaining technical, managerial, and financial capacity. It will guide ODW, our partners, and drinking water stakeholders in several ways.

Table 1: DOH Transformation Plan Priorities, Vision, and Commitments

Priority I. Health and Wellness		
VISION: All Washingtonians have the opportunity to attain their full potential of physical, mental, and social health and well-being.	COMMITMENT: We will lead initiatives that support and promote upstream prevention efforts to advance optimal physical health, mental and behavioral health, spiritual health, resilience, and overall well-being where individuals, families, and communities can thrive. Our actions recognize that social, structural, and economic determinants of health must be addressed to achieve true health equity and optimal health for all.	SEE ALSO: Interventions and preferences
Priority II. Health Systems and Workforce Transformation		
VISION: All Washingtonians are well served by a health ecosystem that is robust and responsive, while promoting transparency, equity, and trust.	COMMITMENT: We will align skills, resources, and partnerships to ensure our health systems and infrastructure capabilities are scalable, responsive, and modernized to promote data driven and innovative approaches to improving health. We will build and transform our systems to be accessible and responsive to Washingtonians regardless of who they are or where they live.	SEE ALSO: Workforce depletion, Consumer engagement
Priority III. Environmental Health		
VISION: All Washingtonians will thrive in a broad range of healthy environments — natural, built, and social.	COMMITMENT: We will lead broad efforts that address external factors impacting health, safety, and well-being, recognize the intersection of people, animals, and environment, and incorporate principles of environmental justice and shared responsibility for community health.	SEE ALSO: Goalsetting, Climate change, Environmental justice
Priority IV. Emergency Response and Resilience		
VISION: All Washington communities have the information and resources they need to build resilience in the face of myriad public health threats and are well-positioned to prepare for, respond to, and recover from emergencies and natural disasters.	COMMITMENT: We will lead our response to health threats and emergencies in a proactive, effective, and equitable way that assures strength of response, supports health systems, leverages community solutions, promotes cross-sector collaboration, and advances health security. Our efforts will learn from previous emergencies and response activities within Washington and beyond to build resilient communities.	SEE ALSO: Consumer engagement, Partnerships, Emergencies, Funding, Environmental justice, Workforce depletion
Priority V. Global and One Health		
VISION: All Washingtonians live in ever-connected environments that recognize and leverage the intersection of both global and domestic health as well as the connections of humans, animals, and the environment.	COMMITMENT: We will lead the development and implementation of creative solutions to improve the health and well-being of Washingtonians emphasizing the connectedness of a strong bidirectional global-domestic health ecosystem. It will simultaneously underscore the importance of One Health recognizing the relationships of human health as they intertwine with that of animals and the environment.	SEE ALSO: Evolving environment, Consumer engagement, Partnerships, Emergencies, Funding, Peer networks

- **Innovation.** Strategically, develop new tools to assist water systems in improving their technical, managerial, and financial capacity.
- **Transparency.** Communicate ODW's role to the public to help water systems equitably deliver safe, reliable drinking water now and into the future.
- **Engagement.** Find new ways to interact with and identify our partners, tribes, water system consumers, the public, and other interested parties to improve policy development and implementation planning.
- **Continual improvement.** Assist us, our partners, and stakeholders to focus on areas of strengths and weaknesses in our processes to improve state efficiency and effectiveness.
- **Federal compliance.** Satisfy federal requirements encoded in Section 1420 of the SDWA, 42 U.S.C. 300g-9(c)(2), as amended. Appendix C demonstrates how this document ensures capacity for new and existing water systems and how ODW complies with America's Water Infrastructure Act requirements for asset management.
- **Commitment.** Articulate our commitment to equity and being an anti-racist organization through action.

1.4 Organization of this document

This capacity development strategy includes:

- A description of our capacity development framework, recognizing a continuous holistic policy development process and program-focused implementation cycle in Chapter 2.
- Descriptions of each element of the capacity development framework and the interaction between each element in chapters 3 through 10.
- Implementation chapters on people, environment, and financing that focus on a variety of evolving challenges and new tools that we are integrating into our work to improve water system capacity.
- Appendices that:
    - Address the state's authority delegated to ODW and its partners.
    - Document public comments and stakeholder involvement in development of this capacity development strategy.
    - Demonstrate compliance with federal requirements.

Throughout this document, we highlight evolving challenges, new tools, and current practices in sidebars examples. These sidebars provide historic, current, or intended future details about various aspects of the strategy. Because the state's capacity development strategy is responsive to changing conditions, the details of the state's efforts will evolve as challenges are overcome and new tools become available. For the most current information, please visit DOH's water system capacity development webpage.

2.0 Strategic Framework

Two mutually supporting feedback processes form the core of our capacity development strategy.

- **Policy process.**
- **Implementation cycle.**

Critical agency support helps each process achieve its highest potential. This framework ensures water system capacity meets public expectations and public health. It describes the interaction between federal, state, and local agencies, consumers, public water systems, and subject matter experts to apply change.

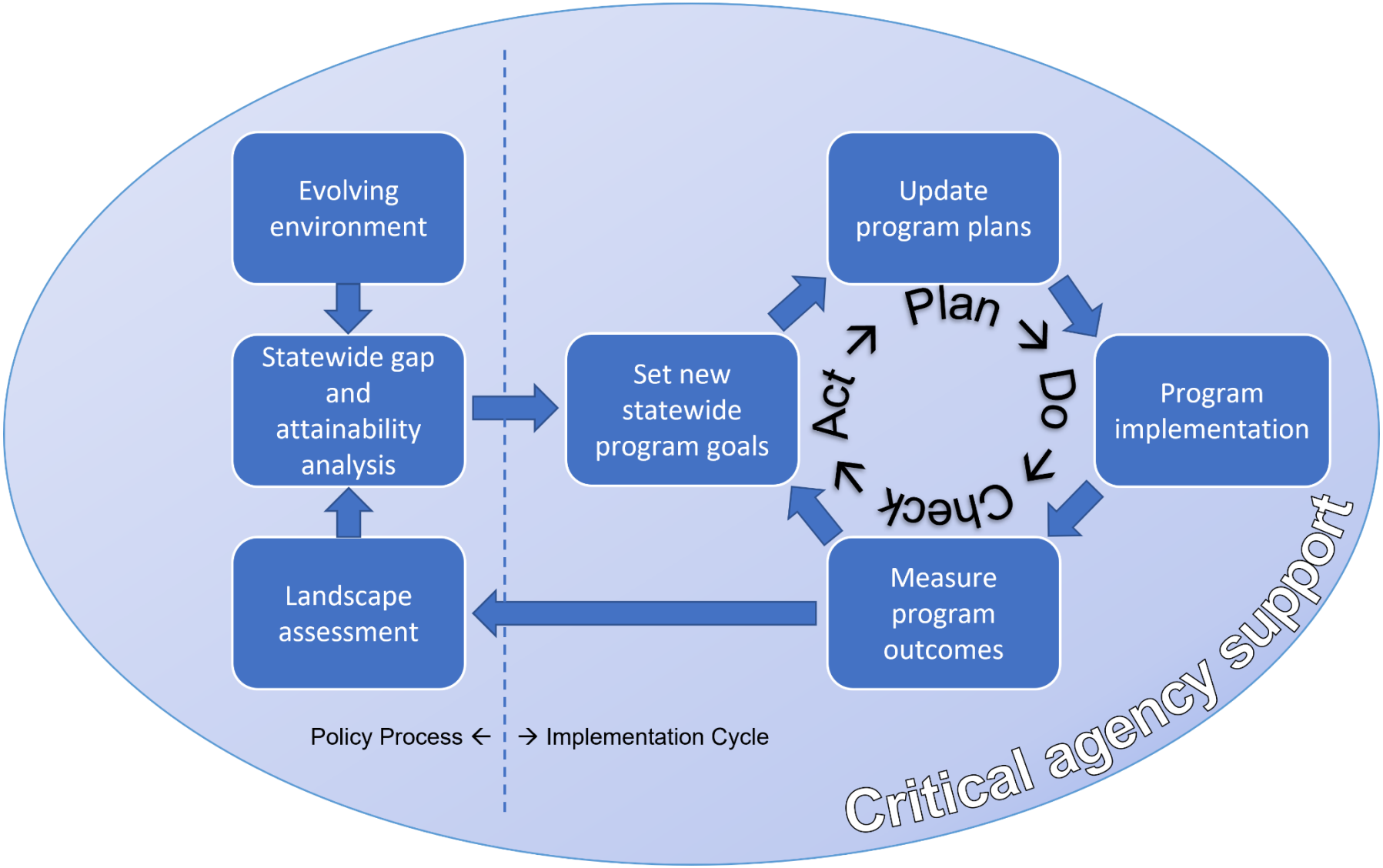
Policy process. The policy process is characterized by continuous improvement of officewide strategy. It is informed by program outcomes and the evolving social, legal, and public health environment. This cycle directs each program through attainable goal setting, grants of necessary authority, and available resources with three elements.

- The **evolving environment** function recognizes that our world is one of continuous change, always presenting us with new challenges and new tools to address them. The evolving environment is addressed in Chapter 3.
- The **landscape assessment** is the aggregate state of water systems throughout Washington. It evaluates what water systems are effective at addressing and their current struggles. The landscape assessment is addressed in Chapter 4.
- The **gap and attainability analysis** is used to inform policy. First, to recognize the gap between expectations and achievement; second, to assess the degree to which that gap can be closed. We address the gap and attainability analysis in Chapter 5.

Implementation cycle. The implementation cycle is characterized by a continual improvement process ("Plan-Do-Check-Adapt" or PDCA), typically over a three- to five-year period. Each drinking water program is at a different stage of the cycle. Programs pursue program-specific goals by providing a wide range of public health interventions to ensure safe, reliable drinking water.

- We **set statewide cross-program goals** that pursue public health goals based on current water system performance and policy initiatives. Statewide program goals are addressed in Chapter 6.
- **Program plans** are updated due to newly acquired goals, strategies, resources, and timelines. Program planning is addressed in Chapter 7.
- **Program implementation** describes the various interventions we apply. Includes our strategic preferences, flexibility, contract management, and the selection of water systems to receive assistance. Program implementation is addressed in Chapter 8.

Figure 2: Asynchronous policy and implementation feedback cycle



- We **measure program outcomes** by collecting and distributing both individual and aggregate water system data at the program scale. Measuring program outcomes is addressed in Chapter 9.

Critical agency support. We facilitate the policy process and implementation cycle by agencywide and internal critical support functions. These support functions include the indirect and technical support that make all other capacity development functions possible. Critical agency support is addressed in Chapter 10.

Table 2: Plan-Do-Check-Adapt strategic activities

	Strategic Activity	Implementation Cycle Step
Plan	Program subject matter experts and ODW partners agree to a multi-year series of deliverables to meet statewide program goals within a reasonable timeline using available resources and strategies.	Program planning
Do	Program subject matter experts and ODW partners perform core services and implement strategic initiatives. Outcome enhancements are considered as resources permit.	Program implementation
Check	ODW collects and aggregates water system data and tracks outcomes over time.	Measure program outcomes
Adapt	Office leadership, with the advice of subject matter experts, determines when a program update is necessary based on changes in goals, resources, strategies, or timelines.	Set statewide program goals

Interaction. The policy process and the implementation cycle work independently but interact due to industry needs or when the working environment changes. The implementation cycle is affected when policy changes demand an update. A new implementation cycle is initiated when one of three conditions are satisfied:

1. **Public health priority**. Significant, urgent policy changes may require an immediate update to the program plan.
2. **Accumulation**. Policy changes that are less impactful or nonurgent are permitted to accumulate until, as a set, they justify the commitment of public health resources to update the plan.
3. **Periodic**. When the program approaches the end of its planning horizon and new goals are set, accumulated changes are integrated.

The policy process is affected by changes in water system metrics in each program. The landscape assessment is developed based on water system progress as measured by the individual programs. The landscape assessment may be updated based on compliance periods or other measurement cycle implemented by each program.

Strategic basis. We designed this framework because, when taken as a whole, it constitutes a strategy to assist public water systems in acquiring technical, managerial, and financial capacity. By using this framework, we will:

- Sense and evaluate scientific advancements, emerging challenges, new approaches, and public expectations for public health.
- Document the strengths and weaknesses of the water system industry for which policy-level effort may be justified.
- Evaluate of the gap between current water industry achievement and desired outcomes.
- Determine what appears to be achievable in the current authorizing environment and with the collaboration of our partners.
- Set statewide goals to achieve and commit resources and strategic authority to achieve them.
- Design topic-specific programs that develop new interventions applied by subject matter experts.
- Implement passive, collaborative, technical, financial, and regulatory interventions to improve water system technical, managerial, and financial capacity to make best use of available resources for the state's highest priorities.
- Receive and respond to real time feedback in individual cases.
- Measure program outcomes to identify which interventions are working.
- Evaluate progress to identify which programs need additional resources, strategies, or time to achieve statewide goals.
- Make the most efficient use of limited public health resources that also achieve state goals.

3.0 Evolving environment

Drinking water systems are affected by community expectations, state and federal regulations, impacts of a changing climate, and emerging contaminants. The changing conditions present both threats and opportunities for drinking water safety and reliability. We monitor the evolving social, legal, and public health environment to detect changes in drinking water policy expectations. Understanding the evolving environment reveals threats and opportunities for water systems to maintain and improve their technical, managerial, and financial capacity.

Vision and values. We view the changing social, legal, and public health demands through the prism of our state's vision and values. DOH envisions "equity and optimal health for all." ODW's vision is that the Office of Drinking Water supports our communities to address competing water challenges, such as climate change, water resources, aging infrastructure, and economic development. We ensure and promote the value of safe and reliable drinking water to all people of Washington, now and for generations to come.

We come to this vision of our future from the organizational and human values we hold. DOH recognizes three above all others: equity, innovation, and engagement. To these, ODW adds accountability, collaboration, commitment, compassion, diversity, empowerment, learning, and respect.

3.1 Sensing the evolving environment

ODW has the primary authority for development and implementation of drinking water-related policy. However, ODW is not alone in its efforts. We partner in public health with local jurisdictions, other state agencies, and national, tribal, or non-governmental organization to identify potential and emerging threats to the drinking water industry and its consumers.

Sensing the environment example

EPA's FY 2018-2022 strategic plan adopted Strategic Measure 2: "By September 30, 2022, reduce the number of community water systems out of compliance with health-based standards to 2,700," a 25 percent reduction. This kind of goal indicates EPA's desired improvement over that five-year period and can be used in subsequent gap and attainability analysis. EPA revised this measure in FY 2021 to, "reduce the number of continuous health-based violations by 80 percent by the end of FY 2022." At the end of the third quarter of FY2022 results indicate:

- Original Metric: Reduction of 9 percent of community water systems out of compliance with health-based standards, 3,508 to 3,191.
- Revised Metric: Continuous health-based violations were reduced by 85 percent, Out of the original 3,508 water systems out of compliance only 537 remain out of compliance.

DOH Transformational Plan. We seek an ever-improving understanding of drinking water issues and solutions to pursue DOH's transformational plan priority of Global and One Health. We live in ever-connected environments that recognize and leverage the intersection of both global and domestic health as well as the connections of humans, animals, and the environment.

- **Priority V, Strategy 1**: Incorporate best practices from beyond borders to advance the health and well-being of Washingtonians and the communities in which they live through strong bidirectional pathways for advancing partnerships, key planning strategies, and communications efforts.

This strategy encourages leadership and program staff to work with partners within and beyond Washington's borders to identify, develop, and implement best practices. Specifically, when we learn more about how industry responds to its changing environment, we look for solutions wherever they may reside.

Local. At the local level, we partner with Washington's thirty-five local health jurisdictions (LHJs). These LHJs serve one or more of the thirty-nine counties in the state. LHJ staff perform about half of all sanitary surveys and are important partners in responding to water system emergencies. Our relationships with LHJs vary depending upon the financial support we can provide them, the capacity of the LHJ themselves, and the degree of support they receive from their governing bodies such as county councils. Local planning departments ensure water system plans are consistent with local plans and regulations such land use and zoning regulations, water shed plans, and ordinances. Local planning departments are key players in areas with Coordinated Water System Plans.

State. We also have strong partnerships within Washington state government and our peers in other states. We partner with the departments of Commerce (Commerce) and Ecology (Ecology), and the Utilities and Transportation Commission (UTC) to provide financing and financial literacy tools to people working with and for public water systems on topics such as asset management and rate setting. Staff collaborate with Ecology and the state departments of Agriculture and Natural Resources as well as others on water rights and drought response. We have strong relationships with other state agencies, most notably Ecology and the state Military Department's Emergency Management Division to support water systems capacity to respond to emergencies.

Drinking Water Advisory Group (DWAG). We established DWAG in 2013 because we need to hear from our drinking water partners on important issues. Meetings cover a range of drinking water discussion topics, including general updates, new rules, policy, and budget issues. Anyone working in the drinking water industry is welcome to attend. DWAG serves as a source of stakeholder involvement for the development of this strategy. See Appendix B Public Involvement for more information on its participation.

DWAG Current and Future Issues

At the September 2021 DWAG meeting, attendees separated into discussion groups and identified topics they thought they would need to address in the next ten years. The most frequently identified themes, in no particular order, were:

- Continuing pandemic impacts.
- Workforce depletion.
- Emerging contaminants.
- Aging infrastructure.
- Consumer engagement.
- Emergency response.
- Equity, diversity, and inclusion.
- Regionalization and consolidation.
- Water rights.

National. At the federal level, EPA is the key federal partner in the provision of safe and reliable drinking water as the SDWA and National Primary Drinking Water Regulations are within its regulatory purview. We also coordinate with EPA on TMF topics ranging from asset management to optimization of water treatment. In addition to EPA, we connect with other federal agencies with roles in water supply forecasting, emergency preparedness and response, funding and financial management, and many other topics. Our coordination with other state drinking water programs and the Association of State Drinking Water Administrators (ASDWA) cuts across a multitude of technical, managerial, and financial frameworks.

Tribal. We desire to maintain a government-to-government relationship with federally recognized Indian tribes whose traditional lands and territories include parts of Washington. We do this by making reasonable efforts to collaborate with tribes in the development of policies, agreements, and program implementation. We consult on issues involving specific tribes and coordinate activities through a trained, agency-level tribal liaison. We strive to improve tribal inclusion in water system planning, we work with their staff and copy them on any correspondence and encourage meetings to occur with the water system elected officials. Funding under the Drinking Water State Revolving Fund (DWSRF) is available to tribal water systems. We work closely in consultation with any tribal water system to ensure they meet our loan eligibility requirements. This motivates collaboration with both Indian Health Service and EPA Region 10 staff that regulate tribal water systems.

Non-governmental. We work closely with many non-governmental organizations to sustain water system capacity, including financial support. Within Washington, DOH partners with many organizations to provide technical, managerial, and financial capacity development services, including:

- Evergreen Rural Water of Washington (ERWoW).
- Pacific Northwest Section of the American Water Works Association (PNWS-AWWA).
- Rural Community Assistance Corporation (RCAC).
- Washington Association of Sewer and Water Districts (WASWD).
- Washington Certification Services (WCS).
- Washington Environmental Training Center.
- Washington Public Utility Districts Association (WPUDA).
- Washington Water Utility Council (WWUC) and Water Supply Forum.
- Regional Water Cooperative of Pierce County.
- Whidbey Island Water Systems Association.

At the national level, we coordinate with non-governmental organizations that support the programmatic and capacity development of water systems in a variety of ways.

Health. ODW staff are proud to be part of DOH's EPH division and in partnership with SBOH. This placement keeps us focused on the essential public health service that is embodied within the provision of safe and reliable drinking water to people in Washington. On specific topics

such as responding to health risks, whether posed by lead or *Legionella pneumophila*, we coordinate closely with subject matter experts throughout the agency as needs arise.

Partnerships create awareness. Our interactions with so many organizations and literally thousands of water system purveyors provide us with a unique perspective on the condition of Washington's drinking water industry. This unique perspective levies a unique responsibility to fully understand the threats water systems face and to identify tools that would help water systems navigate them. This awareness also reinforces our commitment to forging growing partnerships with tribes and public water system customers.

3.2 Current challenges

Aspects of the evolving environment may present threats to industry-wide drinking water safety and reliability. These include climate change, emerging contaminants, workforce depletion, aging infrastructure, affordability, and recalcitrant purveyors. As we tackle these threats it is vital that we identify and work to dismantle systematic inequities within our current drinking water systems.

Affordability. Paying the full cost of water infrastructure has been a barrier to equitably delivering safe, reliable drinking water for some water systems. For disadvantaged communities, ODW offers principal forgiveness, interest rate reductions, and loan fee waivers, while coordinating with other financial assistance agencies to find the financial instruments that best serve them. The UTC protects water system customers served by for-profit, privately-owned water system through public rate setting approval.

There is an increasing awareness that even when a community can afford safe, reliable water service, the price of this essential service may be too high for some individuals. The COVID-19 pandemic only exacerbated the crisis, necessitating Governor's Proclamation 20-23.15 *Ratepayer Assistance and Preservation of Essential Services*, required all water utilities to refrain from shutting off water service due to non-payment and to develop a COVID-19 specific customer assistance program. This proclamation was rescinded in October of 2021 and very few customer assistance programs were implemented. We continue to develop new tools for water systems to bolster their financial capacity while supporting programs that help ensure universal access to safe, reliable drinking water, like the Low-Income Household Water Assistance Program. Additional information can be found in section 11.2 Affordability.

Aging infrastructure. There's a slow-rolling infrastructure crisis occurring throughout America. This was the number one issue facing the water industry according to the AWWA's 2021 State of the Industry report. Washington's experience is no exception. Our participation in the national infrastructure needs survey and assessment (or "needs assessment") demonstrated the mounting cost of infrastructure replacement over the next 20 years—a cost that many of our water systems and their communities are not adequately prepared to address.

The last assessment estimated that Washington's Group A public water systems have $11.73 billion (2015 dollars) of state revolving fund-eligible infrastructure replacement costs over twenty years. Allowing our infrastructure to degrade jeopardizes our communities' long-term economic vitality. Find additional information in section 11.1 Aging infrastructure.

Climate change. Across DOH, we work with partners to reduce and respond to the effects of climate change on people's health. Acting today helps protect our children and future generations from the effects of climate change. Climate change already impacts public health due to air quality reductions, extreme heat events, shellfish safety, cyanobacteria blooms, and floods. Drinking water systems and their customers are also impacted by these extreme events, particularly many tribal communities, who already face disproportionate impacts from the climate crisis.

Snowpack is critical for recharging our rivers and aquifers through the spring and summer. Historically, snowmelt left the mountains in late June; now it occurs as early as the end of May. The frequency of heavier, more intense rainstorms increases the threat of flooding for many Washington communities and rural areas. In addition to immediate health threats from flooding, flood waters may damage and contaminate wells and water treatment plants, resulting in water outages and increased risk of waterborne disease.

We also have competing demands for water (fish, forests, agriculture, energy production, recreation, and people). These conflicts will grow as changes in temperature and weather patterns affect seasonal availability of our water supplies. Anything that interrupts storage and recharge of water in our rivers, lakes, and aquifers threatens the reliability of the drinking water supply. Additional information can be found in section 12.2 Climate change.

Emerging contaminants. Water is known as the universal solvent. While this is essential for life, water is also capable of transporting contaminants that threaten public health—including the viruses, protozoa, and bacteria. As science advances our understanding about potential contaminants in drinking water, so, too, must our strategies and techniques for managing them.

Nationwide efforts such as the federal Unregulated Contaminant Monitoring Rule (UCMR) help us identify future contaminants of concern. However, the state board of health shares the responsibility for protecting public health with EPA for Group A public water systems and has an independent role for Group B public water systems. State agencies and local governments are responsible for protecting aquifer water quantity and quality, including those used by private and single farm wells. The board and department take additional action when appropriate, especially when the contaminant of concern is particular to our region or compounds existing environmental injustices. Additional information can be found in section 12.1 Emerging contaminants.

Recalcitrant purveyors. We provide passive, collaborative, technical, and financial assistance to public water systems. We may even provide structured compliance assurance and planning services to help struggling systems return to compliance. Yet, even with this broad variety of

offerings, some purveyors are unable or unwilling to do what is necessary to provide safe and reliable service. As the deferred maintenance cost of aging water systems mounts, we anticipate that we will encounter more recalcitrant purveyors, especially those who are responsible for smaller systems. While enforcement activities such as receivership, decertification, and civil and criminal penalties are never the preferred course of action, we must prepare to protect water system customers with a robust system of last resort actions. See section 13.2 Recalcitrant purveyors for more.

Workforce depletion. Drinking water systems are benefitted by a corps of certified operators and satellite management agencies with the skills needed to serve and protect their customers. It has become increasingly apparent the water industry is experiencing a high retirement rate. The state is losing experienced water system operators of all skill levels, experienced managers, and water system policy makers. The industry must find solutions to bring in a new generation of drinking water professionals, ideally from more diverse backgrounds and experiences than the current workforce, and to pass on the system-specific procedures and methods that keep our communities safe. More information can be found in section 13.1 Workforce depletion.

3.3 New tools

The evolving environment provides opportunities to develop and use new tools to address drinking water threats. This includes encouraging asset management, increasing consumer engagement, embracing equity, diversity, and inclusion, fostering peer networking, and implementing program planning.

Asset management helps water systems provide safe, reliable drinking water at the lowest reasonable cost. We promote asset management and provide training and incentives for public water systems that adopt asset management principles. A robust, statewide asset management program provides us with a better understanding of the scale of infrastructure replacement needs and more effective funding strategies. Asset management is addressed by this strategy in section 11.3 Asset management.

Consumer engagement will increase in the years to come. We anticipate clearer, more relevant information in consumer confidence reports, additional communications and outreach to water system customers, and increased empowerment of customers to influence water system policies and their own public health outcomes. Consumer engagement is addressed more fully in section 13.5 Consumer engagement.

Environmental justice develops, implements, and enforces environmental and public health laws so every person can live in a healthy and safe environment

Quick links for more information
11.2 Affordability
11.1 Aging infrastructure
11.3 Asset management
12.2 Climate change
13.5 Consumer engagement
12.1 Emerging contaminants
12.3 Environmental justice
13.4 Equity, diversity, and inclusion
13.3 Peer networking
13.2 Recalcitrant purveyors
13.1 Workforce depletion

regardless of race, color, national origin, or income. We address it in section 12.3 Environmental justice.

Embracing equity, diversity, and inclusion (EDI) not only enhances how we engage consumers, but also alters our priorities and opportunities around workforce recruitment and training. Our intention to be a bias-free, anti-racist organization. How we engage in EDI initiatives is addressed in section 13.4 Equity, diversity, and inclusion.

Peer networking allows communities of interest, like nearby public water systems and professional organizations, to form partnerships to collect and retain knowledge and pool resources to solve common problems. It is addressed in section 13.3 Peer networks.

3.4 Reporting

We develop the ODW annual report and triennial report to the governor to demonstrate the challenges faced by the drinking water industry and tools we've developed to assist. Our collective observation of the evolving environment is used along with the landscape assessment (Chapter 4) to inform the gap and attainability analysis (Chapter 5).

4.0 Landscape assessment

In general, we do not create statewide policy-level efforts around the experiences of just a few water systems. Instead, we allocate public health resources to produce the greatest benefit across the state. (See Chapter 8 Program implementation for the ways that we allocate resources to individual or small groups of water systems.) Information from across each program's measurable data (see Chapter 9 Measure program outcomes) is aggregated to identify which drinking water challenges are being overcome and which challenges the industry continues to struggle with. The landscape assessment identifies the strengths and weaknesses of Washington's drinking water industry.

Water system information is stored in various data storage systems and distributed to various parties, including EPA, ODW leadership, the governor, public water systems and their customers, and the public. For more information on who uses the data we collect and organize, please see section 13.5 Consumer engagement. We use our website and publications to focus on targeted, industrywide challenges. We use the data to help us prioritize office efforts through the gap and attainability analysis (See Chapter 5) and develop tools through program planning (See Chapter 7).

Data storage upgrade example
While our current databases are generally capable of collecting, storing, and transmitting required water system data, some of our data systems are showing their age through higher maintenance and upgrade costs and limited or nonexistent interoperability with other data systems. DOH is currently preparing to migrate to SDWIS-STATE, the state version of the Safe Drinking Water Information System. ODW hopes to leverage SDWIS-STATE add-ons and programs developed by other states to ensure the data system meets our needs.

4.1 Data collection and distribution

Sentry NextGen. Our main water system data source is Sentry NextGen, which we use to store a wide variety of water system-related data, including:

- Water system organizational and contact information.
- Water system sources.
- Drinking water laboratories.
- Records of samples taken.
- Operating permit status.
- Water use efficiency.
- Satellite management agencies.
- Exceedances.
- Sanitary survey assignments.
- Coliform reports.
- Water quality monitoring schedules.

Sentry Internet is a version of Sentry NextGen that delivers publicly available data. For more information, see the section 13.5 Consumer Engagement.

SWAP mapping tool. The Source Water Assessment Program (SWAP) geographic information system (GIS) mapping tool was developed to provide geographical representation of source water protection areas and sole source aquifers. Water system related geographies are linked back to data in Sentry NextGen. To keep the water system geographies up to date, we request GIS data each time water systems update their WSPs. We use this tool to advise public water systems and local governments on planning and real-time emergency management.

A portion of the data is made available through our website. Making this information available helps utilities protect their sources from unintended contamination. The site provides information about drinking water sources and known contaminants, helping users determine if their activity could impact a drinking water source.

Using SWAP

SWAP provides a variety of important geographic and environmental data.

- Source water protection
  - Active source locations
  - Surface water protection areas
  - Groundwater time of travel
  - Water resource inventory areas
  - Sole source aquifers
- Contamination
  - Potential contaminant locations
  - Large on-site sewage systems
  - Pipelines
- Geographic areas
  - Tribal boundaries
  - Water system service areas
  - Counties
  - Township, range, and section
- Emergency-related
  - Wildfire data including thermal detections and current and past fire perimeters
  - Flooded areas
  - Power utility boundaries
- USGS stream gages

ODW's Source Water Protection program, which maintains SWAP, also collaborates with Commerce and local governments to integrate wellhead protection and other critical aquifer recharge areas into local critical areas protections required by the state Growth Management Act (GMA).

Washington Tracking Network (WTN). WTN is a DOH service focused on making public health data more accessible. WTN staff keep data up to date and develop additional data based on need and availability. WTN places drinking water-related data side-by-side with other health and risk metrics to provide a broader perspective on community challenges. Over time, WTN is used for more applications, including by legislative direction, associated with the pursuit of environmental justice, and identifying health disparities and inequities across the state.

Washington Loan Tracking. Washington Loan Tracking (WALT) is our online loan and grant management tool. Public water systems may submit applications for funding opportunities, check the status of their applications, and submit applicable documentation.

Specialized and ad hoc. Often, changes in public and industrial expectations occur more rapidly than development of formal databases can support. Consequently, individual programs

and regional offices develop specialized data sources, typically in the form of spreadsheets, to assist them in tracking data that aren't stored in a formal database. These data sources can be restructured on the fly, capable of serving immediate needs and, later, serve as prototypes for more formal development. Over time, the intention is to integrate these data into the overall data infrastructure as required and public health resources allow.

Drinking Water Alerts
The ODW website provides information to the public on active health advisories. While public notification for water system customers is the responsibility of the public water system, DOH provides active health advisories, including voluntary advisories, for Group A systems (e.g., do not drink, do not use, and boil water orders) listed by county and water system name for people who are not regular customers of the system. We do not provide health advisory information when only small portions of larger water system issue is impacted by the health advisory, as we cannot provide a detail description of the portion of the water system impacted. Additionally, water purveyors may issue health advisories when conducting system repairs and not notify our office.

4.2 Publications

ODW has webpages hosted and maintained by DOH's Office of Public Affairs and Equity (OPAE) to maintain a consistent look and feel to the site. From these pages, we provide access to commonly requested public data, such as the Drinking Water Alerts page, water system information including Sentry Internet and the SWAP map, and public water system guidance.

ODW makes our 400 plus publications and forms available from the website in our publications database,[viii] including some Spanish language water system guides and customer alert notices. See the subsection on "Emergencies" in section 12.3 Environmental justice and section 13.4 Equity, diversity, and inclusion to learn how we will improve language access.

4.3 Reporting

Data from the landscape assessment is reported in multiple formats and is used for the gap and attainability analysis. The landscape assessment sets the baseline for the period and its data is used when each program plan is updated.

Program plans. While the primary function of program plans is to articulate program goals, allowed and preferred strategies, nominal resource allocation, and targeted timelines, program plans also publish the historical achievement of water systems that drive the program's implementation, when available. Additionally, program plans document what measurables the program tracks and contributes to the landscape assessment.

Water system planning. Pursuant to RCW 90.82.048(3) and our MOU with Ecology, we are required to compile a list of water systems that are anticipated to engage in planning in the following year.

Annual State Capacity Development Program Implementation Report. Each year, in part to satisfy 42 U.S.C. 300g-9(b)(2), we report to the EPA on the success of enforcement mechanisms and initial capacity development efforts in assisting the community water systems and nontransient noncommunity water systems that have a history of significant noncompliance to improve technical, managerial, and financial capacity.

Water System Capacity Report to the Governor. Every three years, we write, publish, and make available to the public our *Capacity Development Report to the Governor* 331-653. Beyond informing the public of ODW's activities, it is intended to satisfy a requirement of 42 U.S.C. 300g-9(c)(3), part of Section 1420 of the SDWA. It requires that Washington produce a report for our governor on the effectiveness of capacity development efforts. The triennial governor's report is specifically intended to show "the efficacy of the strategy and progress made toward improving the technical, managerial, and financial capacity of public water systems" As a consequence, the report to the governor focuses on the *change* in the landscape assessment from the last report.

The report addresses the wide variety of activities undertaken by ODW to improve public water system capacity. The most recent report:

ODW Publications

We provide a wide variety of publications addressing topics such as:

- Consumer and public education.
- Contaminants.
- Cross-connection control.
- Drinking water security.
- DWSRF project profiles.
- Emergency response.
- Engineering design.
- Financial assistance.
- Group B water systems.
- Operations & maintenance.
- Operator certification.
- Planning & financial viability.
- Regulations.
- Source protection.
- Water treatment.
- Water quality monitoring.
- Water use efficiency.

- Introduces the scope of capacity development for the vast number of public water systems and the partnerships we've formed to help deliver capacity development services.
- Describes the TMF water system support we provide through program area reports and partnerships.
- Describes role of capacity development in addressing water system challenges.
- Characterizes the types and sizes of Group A public water systems.
- Recognizes ODW's strong, essential relationships.
- Summarizes and provides examples of the support we provide.
- Highlights capacity development initiatives.
- Focuses specifically on the role of asset management in capacity development activity.
- Reports program area activity and success stories.
- Describes development of new tools.

Information in the report also addresses EPA's criteria for assessing the implementation of our Capacity Development Program. While asset management is addressed throughout, specific asset management encouragement and training initiatives are highlighted in their own section to emphasize our approach. We give examples that demonstrate the tool's usefulness. We will write implementation improvements into our capacity development program plan.

Informing the Gap and Attainability Analysis. The aggregated data depicting drinking water system achievement is used along with our collective observation of the evolving environment (Chapter 3) to inform the gap and attainability analysis (Chapter 5).

5.0 Gap and attainability analysis

The purposes of the analysis are to acknowledge areas of potential improvement and to prioritize public health resources toward the most impactful, achievable goals. We cannot immediately close all performance gaps, but we create reasonably achievable goals. Fortunately, we are not alone in this work. We developed many partnerships that help the industry achieve our shared goals. What we can achieve together is a function of available resources, authority, and time.

5.1 Gap

We can document gaps between the public's expectations of their drinking water systems and the level of achievement accomplished by the industry. We do this by acknowledging the differences between the evolving environment (Chapter 3) and the landscape assessment (Chapter 4). To do this effectively, we assign staff members to develop into subject matter experts (SME), engage in both professional and scientific research projects to understand the scope and detail of a relevant policy area, and participate in industry groups to work toward a common understanding with the regulated community.

Gaps are not singular: it is not uncommon that different people and organizations desire different outcomes. For instance, there are both proponents and opponents of water system fluoridation—each group would describe the performance gap very differently. Two advocates who agree that a performance gap exists may disagree on how great the gap is. For example, should manganese contamination be treated solely as a secondary contaminant, or should it become a primary contaminant?

As part of the gap analysis, we will identify equity issues to prioritize availability of technical and financial assistance. We identify performance gaps that disproportionately impact or limit access to safe, reliable drinking water and develop policy to reduce inequities.

SME development. ODW serves a unique role in the state's strategy. So, while we hire trained and experienced professionals, we provide significant support to develop our staff to be among the best informed and creative drinking water minds in the state.

We encourage our staff's professional development by providing training opportunities, leadership development, and research opportunities. We encourage participation in conferences and professional organizations to build and maintain relationships, increase knowledge base, and continued education. We work to develop subject matter experts in each region on specific, complex rules to support our work. Our leadership encourages staff to follow their passions within their jobs, but also allow for stretch job assignments when resources allow.

DOH and ODW have embraced Arbinger Institute's organizational change process. The Outward Mindset focus is that mindset drives behavior and makes a connection between behavior, mindset, and results. The Outward Mindset tools help us build an organizational culture in which

we see others as people and focus on achieving agency objectives in ways that help our employees, partners, and customers achieve theirs.

Documenting gaps. Our Engineering and Technical Services team continues to conduct research and develop white papers to inform policies and staff guidance. This team examines and reports on new treatment technologies, emerging contaminants of concern, and operation and technical design best practices.

Program area teams produce white papers to present to management to document trending issues, justify additional resources for new initiatives and program enhancements, and request guidance on implementation decisions when consensus is not obtained.

5.2 Attainability: Lead service line ID and removal

Attainability is the ability to achieve goals within the available strategies, resources, and timeline. We can imagine any number of public health goals that could be pursued, but not all of them are attainable. Using terms used in the drinking water industry, attainability is very similar to the concept of the maximum contaminant level goal (MCLG). While it's the desired outcome, it simply may not be attainable (or achievable) under current circumstances. That doesn't mean we won't pursue that goal if the opportunity presents itself. It just means we set our immediate goals to what's currently attainable.

Lead service line ID and removal
In 2016, Governor Jay Inslee committed the state to, first, help Group A public water systems identify all lead service lines and lead components within two years and, second, to work with stakeholder groups to develop policy and budgetary proposals with a goal of removing all lead service lines and lead components in Group A public water systems within 15 years. While the first of these goals was attainable within the lead and copper program's planning horizon, the second is only partially attainable during the current period. With the passage of the Bipartisan Infrastructure Law (BIL) DOH has additional resources to help water systems identify and remove lead service lines. The state remains committed to closing the gap by 2031, by developing interim goals.

State authority. The authority granted to us may limit attainability for us and our partners by legislative, judicial, and executive state and federal authorities.

DOH seeks additional authority only when required to implement interventions that satisfy the achievement of statewide goals. Unlike California, Washington does not grant DOH the authority to require water system consolidation, even when a water system consistently fails to provide safe, reliable drinking water. Instead, we prioritize consolidation in our funding and technical assistance strategies and encourage the use of SMAs to achieve managerial consolidation. This potentially limits the degree to which the number of small, insufficient water systems can be reduced.

For a full description of state authority, see section 8.2 State authority and Appendix A Application of authorities.

Barriers and incentives. We received input from the DWAG on its experience with water system capacity barriers and incentives. DWAG member responses can be found in Appendix B.2 Input. DWAG identified six areas in which water systems experienced barriers and incentives to capacity development.

- **Education.** Water systems identified the difficulties of educating customers and elected officials as a significant barrier to water system capacity development. On the other hand, they identified ODW as a great resource for their own education.
- **Operating costs.** Operating costs, including the cost of water, local utility taxes, permits, and sanitary surveys, were al identified as significant barriers.
- **Communication/coordination.** DWAG identified communication and coordination as a significant barrier, including coordination across multiple levels of government. Rulemaking was also identified, but both as a barrier and as good preparation to make needed changes. DWAG members expressed a desire for better communication with Ecology regarding permit exempt wells. On the other hand, water systems stated that communication and coordination is improving, and that having overarching support is a benefit.
- **Federal funding.** Federal funding barriers were characterized as: funds are difficult to access, in particular COVID-19 relief funds, and that the timeline limitations associated with construction funds are difficult to satisfy.
- **Workforce depletion.** The industry is experiencing severe operator shortages, the educational background requirements are barriers to advanced certifications, and there are insufficient apprenticeship opportunities available.
- **Land use.** Barriers include growth management and zoning, density, and landscape changes and lack of water system control over source water protection.

To address these barriers, we identified some initiatives that we will evaluate and potentially develop, listed in Table 3.

Table 3: Potential state responses to capacity development barriers

Category	Potential state responses
Education	• Increase managerial and financial training through **Association of Washington Cities'** certified municipal leader program (see section 7.4 Interventions and preferences). • Reinvigorate the **Value of Water** campaign (see section 13.5 Consumer engagement). • Develop interactive **management guidance** for small water systems (see section 7.4 Interventions and preferences).
Operating costs	• Encourage and assist in implementing **asset management** programs (see section 11.3 Asset management). • Implement multi-year prepayment of **sanitary survey** costs (see section 5.4 Funding). • Support affected communities in obtaining **compensation and reparations** for environmental damages and harms (see section 12.3 Environmental justice).
Communication/ coordination	• Initiate a planning-focused **foundational public health** initiative on water availability (see section 5.4 Funding). • Update the Health-Ecology **Memorandum of Understanding** (see section 5.3 Partnerships). • Support increased **community participation** and civic engagement around the prevention of environmental and health harms (see section 13.5 Consumer engagement).
Federal funding	• Focus federal funding toward well-defined, **shovel-ready projects** (see section 5.4 Funding). • Use set-aside funding for **lead service line** inventory and replacement (see section 5.4 Funding).
Workforce depletion	• Launch a **youth- and minority-focused** media campaign encouraging greater participation (see section 13.5 Consumer engagement). • Encourage **workforce development** and training in disadvantaged communities to include essential environmental infrastructure design and operation, including water and wastewater design and operations (see section 13.4 Equity, diversity, and inclusion). • Evaluate **operator certification** experience and training requirements, such as crediting equivalent experience of former military members, through outreach to outside groups such as the military, department of corrections, and trade schools (see section 13.4 Equity, diversity, and inclusion). • Use set-aside funding to **subsidize apprentice salaries** (see section 13.1 Workforce depletion).
Land use	• Facilitate **relationship building** between water systems and local authorities (see section 13.3 Peer networks). • Participate in **local environmental processes**, such as critical area ordinances and project actions (see chapter 12 Environment). • Develop guidance and improved tools for local government **water availability** determinations (see section 5.4 Funding). • Harmonize elements of the **statewide planning framework**, including growth management act, water system planning, watershed planning, municipal water law, and public water system coordination act (see section 5.3 Partnerships).

Barriers specific to water system adoption and implementation of asset management are addressed in section 11.3 Asset management.

5.3 Partnerships

Some public health goals would not be attainable without numerous partnerships. For example, the Community Economic Revitalization Board (CERB) can make infrastructure investments in drinking water systems that are not permitted under federal and state revolving fund regulation. Specifically, CERB can make low-match investments in the business growth and job subsidies that some small communities need to keep their drinking water systems economically viable. We have many such partnerships that make our endeavors more effective.

DOH Transformational Plan. We implement one Emergency Response and Resilience and three Global and One Health strategies in forming and cultivating our partnerships.

- **Priority IV, Strategy 2**: Collaborate with many community-based organizations, disaster response and recovery partners, and interagency partners to develop, share, and act upon key information in culturally and linguistically appropriate ways related to hazards and emergencies.
- **Priority V, Strategy 2**: Use the collective strength and wisdom of existing and emerging global health and One Health stakeholders and institutions within (and beyond) Washington state. This enables us to participate in and support robust and connected networks of information sharing, strategy development, and engagement.
- **Priority V, Strategy 3**: Seek resources, funding, and partnership opportunities to enhance capabilities across health systems. This ensures a globally connected community of partners. It emphasizes mentorship and training opportunities, system and technology enhancements, and engagement pathways to address domestic issues through global health learnings.
- **Priority V, Strategy 6**: Further support our important role in binational relations and connectedness with health partners and other key entities in Canada and beyond. This will advance information sharing, health systems knowledge, and strategy development.

These strategies encourage us to establish and strengthen relationships for the benefit of water systems, their customers, and their communities, including investing in enhancing the capacity of scientific, community, public, and nongovernmental organizations.

Responsible agencies. Many agencies share the responsibility of improving water system capacity, taking advantage of their specialties.

- ODW serves as the SDWA primacy agency for EPA. ODW is an office within DOH's EPH division. We have additional drinking water-related responsibilities and authority beyond minimum federal requirements.
- SBOH has independent state authority to protect the health of water system customers through regulations regarding:[ix]

- The design and construction of Group A public water system facilities, including proper sizing of pipes and storage for the number and type of customers.
- Drinking water quality standards, monitoring requirements, and laboratory certification requirements.
- Public water system management and reporting requirements, planning and emergency response requirements, and operation and maintenance requirements.
- Water quality, reliability, and management of existing but inadequate public water systems.
- Quality standards for the source or supply, or both source and supply, of water for bottled water plants.
- Initial design and construction, at a minimum, of Group B public water systems.

- Ecology has direct authority over water rights and underground injection control. We have agreements that coordinate our responses to water system planning and engineering.
- UTC has direct authority for consumer protection and coordinates activities with us through an MOU.
- Washington State Department of Transportation (WSDOT) protects wellheads when they are designing, constructing, and operating state highways.
- State climatologist in the Department of Agriculture has an agreement with Ecology related to their drought determination work.
- DNR uses their role as public lands stewards for source water protection. They use our data to identify wellhead and watershed sources associated with logging activities.
- Local health jurisdictions, including local boards of health and health officers have direct authority through ordinance, memorandum of agreements, or through a joint plan of responsibility with us.
- Local general governments have significant authority regarding land use planning, building construction, subdivision law, and constitutional police power for public health protection.
- Attorney general and county prosecuting attorneys have the responsibility to engage in civil and criminal prosecution associated with drinking water protection.
- Green River College/Washington Certification Services, via an agreement with us, evaluates educational sessions for credit, operator certification testing, operator certification program implementation, certification eligibility review.
- State auditor has the authority to conduct accountability, financial, and federal single audits of state agencies and local governments.
- Law enforcement personnel have the duty to enforce all SBOH rules, and provides safe access to sites, as necessary.

Collaborative arrangements. We have MOUs with three state agencies: Ecology, WSDOT, and UTC. We also have agreements with Green River College for operator certification services, and local health jurisdictions for some drinking water capacity development activities. We also

maintain peer-to-peer relationships with other states and contract relationships with drinking water training organizations.

Ecology. Ecology's mission is to protect, preserve, and enhance Washington's environment for current and future generations. In that role, Ecology has the authority and responsibility to manage the water resources of the state, including watershed plans and water rights. Their primary responsibility is to protect the quality and quantity of environmental water, including the protection of the aquifers and surface waters of the state from human-caused degradation. Additionally, Ecology has the responsibility to protect public water systems from impairment caused by junior water right holders.

Under our MOU, we ensure that water systems' plans are not inconsistent with their documented water right limitations and local watershed plans. We also afford systems the ability to expand their water right place of use and number of connections.

Commerce. Commerce touches every aspect of community and economic development: planning, infrastructure, energy, public facilities, housing, public safety and crime victims, international trade, business services and more. Because drinking water is an essential part of both community and economic health, we are partners in critical topics such as growth management, infrastructure planning and financing, and climate change.

Small Communities Initiative (SCI). We use part of our local assistance set-aside to fund an agreement with Commerce. It helps local elected officials, city staff, and citizens define, prioritize, and identify links between public health, environmental protection, and local development issues. SCI helps drinking water jurisdictions secure funding for improvements and coordinating efforts in planning, rate setting, asset management, and source water protection. SCI efforts result in safe drinking water, improved environmental protection, and infrastructure that may help with community and economic development activities.

Transportation. We work with WSDOT to protect intake structures and sanitary control areas (SCAs) by applying agreed-upon screening criteria to ensure that highways are not a potential source of drinking water contamination. This extends to highway design, construction, and operations, including ongoing vegetation management. The screening criteria were designed to ensure that highway projects satisfying them do not constitute a source or potential source of contamination or, if that's not possible, develop a replacement source.

Sync. The Washington Infrastructure System Improvement Team (or "Sync") was created, and recently reauthorized, by the state legislature to "identify, implement, and report on improvements" to the state's infrastructure system. Sync serves as the nexus for improvements to the construction and financing system for the state's water, transportation, and broadband infrastructure. Sync uses LEAN practices to identify targeted improvements to our statewide construction and financing system. With Sync, we are coordinating our efforts with the Public Works Board, Commerce, Ecology, the Transportation Improvement Board, and WSDOT to

create a more efficient organization for infrastructure financing, and to support communities that are living in legacy utilities at end of useful life.

UTC. Some public water systems are owned by for profit-investors. UTC's mission is to protect the people of Washington by ensuring that investor-owned utility and transportation services are safe, available, reliable, and fairly priced. State law requires that water system rates must be reasonable to customers, while giving regulated companies a chance to cover legitimate costs and earn a fair profit, so they can continue to assure safe, reliable drinking water.

Under our MOU, we coordinate with UTC on planning and engineering submittal review, privately-owned water system audits under section 80.04.110(4) Revised Code of Washington (RCW), rate increases, ownership changes, disbanding companies, formal complaint proceedings, customer complaints, regulatory authority and enforcement coordination, receivership, legislation and policy documents, regulatory status of water systems and SMAs, project cost and financing of ODW-required plant additions, and collaboration opportunities for water system technical, managerial, and financial capacity building.

Local health jurisdictions. We share regulatory responsibility of Group B systems with local health jurisdictions (LHJs). Some LHJs adopt local ordinances for the regulation of Group B water systems. ODW enters into a Memorandum of Agreement (MOA) delegating all authority of Group B regulations to the LHJ and setting up a data sharing agreement between the LHJ and the ODW. LHJs without local Group B ordinances can enter into an agreement called a Joint Plan of Responsibility (JPR). The JPR lays out the roles and responsibilities between the LHJ and DOH. In some counties, the LHJ has primary oversight responsibility; in others, we retain primary oversight responsibility.

Additionally, LHJ staff members conduct more than half of the hundreds (and sometimes thousands) of sanitary surveys performed each year. Without our local health partners, we could not meet our responsibilities to complete effective sanitary surveys within required timeframes and staffing levels. We also support LHJ-led sanitary surveys to help facilitate relationship-building between purveyors and their local environmental public health personnel and to help support the development of local environmental health expertise.

Green River College. Green River College and DOH have been partners in administering certification program activities for over 40 years. The college provides comprehensive programs, services and resources for environmental professionals and continuing education providers. Through the interagency agreement between two state entities, WCS is responsible for:

- Administering the State Backflow Assembly Tester (BAT) Certification Program.
- Administering the State Waterworks Operator Professional Growth and Renewal Programs.
- Providing training evaluation and accreditation services to course sponsors.

It assists drinking water operators and backflow assembly testers in attaining state certification, meeting continuing education requirements, achieving career advancement goals, and protecting the health of Washington's citizens.

Third-party Technical Assistance example

One of the many capacity development projects that one third-party technical assistance provider, RCAC, supported in 2019 was the Lincoln County Regionalization Project. At our request, RCAC developed and facilitated a series of workshops for drinking water systems in Lincoln County to provide information, education, and opportunity to explore regional governance and resource efficiency. RCAC coordinated several workshops for numerous water systems and eight cities in Lincoln County. One outcome of these facilitated workshops was the formation of a new, locally led group for the water systems and other parties that invested their time and energy to build local government capacity.

Water Professionals International (WPI, formerly ABC). WPI develops all waterworks operator certification exams for Washington. Our contract with WPI includes a list of "need to know" criteria for each exam. They coordinate testing between our candidates and a testing service.

Third-party technical assistance providers. We use part of our local assistance set-aside to fund third parties to provide technical assistance to small communities across the state. Third-party technical assistance providers help systems with financial and managerial capacity building projects, such as rate studies, board training, and water system plan development. Under our contracts, they may also review the feasibility of consolidating water systems. Additionally, we provide information to federally funded third-party technical assistance providers so they can focus their efforts on systems of statewide concern.

States. We develop partnerships with other state drinking water programs. We share experiences and expertise, either directly or through third-party organized events. We desire to be good partners by contributing to the national body of technical and professional knowledge. We do this through our publications, such as our well-received *Water System Design Manual* 331-123 and *Small Water System Management Program Guide* 331-134. We also contribute to peer reviewed publications, such as *Environmental Science: Water Research & Technology,* and our staff's expertise is featured at national events, such as the American Planning Association's National Planning Conference.

We benefit from this partnership as well. We collaborate with other states through organizations such as ASDWA. We also welcome input from other states on our publications; for example, the *Water System Design Manual* generated gratefully received feedback.

Other partnerships. We also seek out other partnerships for both long-term and project-oriented work. Other partners include:

- State departments of Agriculture and Natural Resources.
- U.S.D.A. Forest Service.
- Drinking Water Providers Partnership.

- Washington State well-drilling technical advisory committee.
- Lower Yakima Groundwater Management Area.
- Washington Water/Wastewater Agency Response Network (WAWARN).
- University of Washington's Climate Impacts Group.
- ERWoW.
- Regional water purveyor associations.
- AWWA-PNWS -> WWUC
- WUCC Washington utility coordinating council.
- WASWD.

Interested parties. In addition to our other partnerships, there are interested parties who are affected by drinking water policy. They are identified in section B.1 Communications program.

Consumer leadership. Under the most desired circumstances, a healthy relationship between water system board members and consumers would be the most potent water system "regulator." Drinking water consumers have first-hand knowledge of the water system's delivered level of service and should be the ultimate evaluators of its sufficiency. Unfortunately, most consumers don't think about their water until their service is impacted. To improve the likelihood and effectiveness of consumer leadership, we will work to empower customers, especially under-resourced, marginalized, and oppressed communities, in their own water systems' policies so that each water system meets or exceeds their shared needs and community aspirations. See the Consumer Engagement section for more details.

5.4. Funding

While each drinking water program area is assigned a nominal level of resources, available strategies, and time to achieve their goals, the office's total resources and authority are limited by state law and its budget. Whether a public health goal is attainable is determined in part by the available authority and the funding necessary to apply it.

Transformational Plan. We implement one Emergency Response and Resilience and one Global and One Health strategy in seeking, investing, and equitably distributing public health resources.

- **Priority IV, Strategy 4**: Seek flexible and sustainable funding opportunities to invest in activities that support robust response activities, workforce, tools, and the communities we serve and that allow for scarce resources to be equitably allocated.
- **Priority V, Strategy 3**: Seek resources and funding as well as partnership opportunities to enhance capabilities across health systems to ensure a globally connected community of partners with particular emphasis on mentorship and training opportunities, system and technology enhancements, and engagement pathways to address domestic issues through global health learnings.

These strategies encourage us to seek additional funding to improve the capacity of all affected jurisdictions. We are authorized to engage in a wide variety of interventions, including passive, collaborative, technical assistance, financial assistance, and regulatory (See section 7.4 Interventions and preferences).

We apply these interventions using funding made available to DOH through the state's general fund, water system operating permit and operator certification fees, service fees, federal Public Water System Supervision (PWSS) grant and DWSRF grant. Other funding sources become available from time to time. We may also make changes to our funding strategy. For example, since all Group A systems are subject to periodic sanitary surveys and annual permit fees, we are considering spreading out the cost of the sanitary survey fee into the annual permit.

At times, public health goals are not reasonably achievable with current authority and funding levels. Under those circumstances, we must consider whether it is more reasonable to request or collaboratively develop additional (or more specific) authority, request additional funding, or delay the implementation. Ultimately, if the authority or funding necessary to attain a public health goal is not available, a less protective goal may be adopted based on attainability.

Some goals are of great enough scope that it may take many years to attain the ultimate public health goal. In this case, attainability is phased with interim goals that measure progress toward the long-term goal. (See section 6.2 Goalsetting for information about how we respond to ongoing programs' evaluation of goal achievement.)

Foundational public health services (FPHS)

We recognize that there is a foundational level of public health services that must exist everywhere for services to work anywhere. Foundational public health services (FPHS) are core services that the governmental public health system is responsible for providing in a consistent and uniform way in every community in Washington. The system is comprised of DOH, SBOH, LHJs, and sovereign tribal nations and their health programs.
As part of this new partnership paradigm, DOH has recently been funded to provide additional guidance, rulemaking, and group and individualized technical assistance to help local health jurisdictions, water systems, and local land use planning authorities manage water availability within their jurisdictions and provide guidance on establishing and optimizing local drinking water programs.

Fund sources. ODW is funded by multiple sources. This is useful because it increases our resilience by preventing drinking water assistance from being dependent on any single funding source. Positive variability in any one source helps mitigate any negative variability in another.

- **DWSRF.** DWSRF is a federal/state partnership program, its purposes are to provide low interest loans to public water systems for capital improvements aimed at increasing public health protection and provide a source of funds for other SDWA activities (called set asides). Funding from the Bipartisan Infrastructure Law provides additional dollars into this program. The funding includes special money for lead service line replacement and unregulated contaminants. This increased funding will bolster the program and allow the state to fund more projects and provide additional technical assistance to

water system. State match is provided through the Public Works Trust Fund or other state funding such as bonds.

- **Drinking water systems rehabilitation and consolidation program.** Washington State legislature funds this program to support the consolidation or restructuring of failing water systems. Projects have included feasibility studies, payment of system development fee to aid in the connection to larger water systems, and construction projects for consolidation or upgrades necessary to facilitate restructuring.
- **Public Water System Supervision (PWSS).** PWSS is EPA non-competitive grant to assist states, territories, and tribes in carrying out their Public Water System Supervision programs. PWSS grants focuses on the develop and implement a PWSS program adequate to enforce the requirements of the SDWA and ensure that water systems comply with the National Primary Drinking Water Regulations.
- **Water Pollution Control (section 106).** This grant is authorized under the Clean Water Act to assist states in establishment and implementation of ongoing water pollution control programs.
- **General fund—State.** The general fund is the principal state fund supporting the operation of the state. This fund is used to meet the PWSS state match requirements.
- **Foundational Public Health Services—State (FPHS).** FPHS are a defined limited statewide set of core public health services. These FPHS are unique services provided only or primarily by government everywhere; are population-based rather than for the individuals; and are services that must be everywhere for them to work anywhere. In many cases they are mandated in federal or state. Like public safety (fire, police), public utilities (power, water), and other public infrastructure (roads, sewers), there is a foundational level of public health services that must exist everywhere for services to work anywhere. State funds are used for these services and program goals and priorities are set by FPHS Steering Committee.
- **Fees.** We charge service fees for direct services, such as sanitary surveys and planning and engineering review. Under state law, operator certification and training must be fully funded by the industry. Other services may be subsidized to achieve public purposes. We have not addressed our service fees or operating permit fees in a decade or more. An effort is currently underway to update our fees and make smaller, more frequent fee adjustments thereafter.

6.0 Set statewide program goals

Each drinking water program is provided goals, resources, strategic guidance, and a timeline from ODW leadership based on the program's current level of achievement and the results of the public health attainability analysis. Setting new statewide program goals is the first step in strategy's implementation cycle and satisfies the "Adapt" element of ODW's Plan-Do-Check-Adapt continual improvement process (Chapter 2). In this effort, we determine statewide priorities and set goals so that individual program areas can develop program plans (Chapter 7).

Program areas. We divide our numerous areas of responsibility into "programs" and assign staff members to one or more programs based on their skill sets and the program's needs. A significant amount of subject matter expertise in necessary to be effective in many of their fields, so ODW staff members are typically highly specialized. Chapters 8, 9, and 10 provide additional detail into how individual program areas are implemented.

Note that water system capacity development is, itself, considered to be a program area. The program recommends updates to the capacity development strategy and develops and implements the capacity development program plan. That plan includes coordination of ODW-directed capacity development activities performed by non-departmental entities (e.g., third-party technical assistance). The capacity development program is also responsible for gathering data through water system capacity assessment surveys.

Program areas may have multiple topics. For instance, source monitoring also includes distribution water quality monitoring. The water system planning program area includes coordinated water system planning, climate resiliency, and shares asset management with the drinking water state revolving fund.

2022 Program Areas
Arsenic Treatment Optimization
Coliform
Compliance Assurance and Enforcement
Cross-Connection Control
Disinfection
Disinfection Byproducts
Drinking Water State Revolving Fund
Emergency Preparedness and Response
Nitrate
Operator Certification and Training
Public Right-to-Understand
Sanitary Survey
Satellite Management Agencies
Source Monitoring
Source Water Protection
Surface Water
Water Availability
Water System Capacity Development
Water System Planning
Water System Registration
Water Use Efficiency

6.1 Priorities

Core Services, Strategic Initiatives, and Enhancements. The work we do to help water systems reach statewide goals are called core services. We engage in strategic initiatives to increase core service efficiency and to initiate new core services. Outcome enhancements are intervention updates and resource supplements to achieve public health goals beyond previously adopted levels.

Each of our activities is classified as a core service, strategic initiative, or outcome enhancement. We use these classifications to prioritize statewide resources across ODW's program areas and understand and communicate the true cost of essential public health services.

A **core service** is an activity that pursues or supports the achievement of a statewide program goal. In effect, core services are the activities we perform to satisfy a mandate, whether the source of the mandate is federal, state, departmental, or self-imposed. The focus for core services is *effectiveness*—whatever core service activity we engage in is intended to achieve the goal, even if the activity itself is less efficient than desired. As a result, core services often have a wider range of strategies and more resources available to them. To better understand the relationship between effectiveness and strategy choices, see section 7.4 Interventions and preferences.

A **strategic initiative** is an activity that improves long-term core service efficiency. Strategic initiatives are investments in new tools and strategies that allow us to deliver statewide program goals with fewer resources. Strategic initiatives are also used to initiate new core services so that the resulting service will be at least efficient enough to implement with available resources. The focus for strategic initiatives is *efficiency*—over time we want to achieve each public health goal with less effort. As a result, we become better at delivering critical public health services and free up resources to take on new challenges.

An **outcome enhancement** is an activity enabled by new strategies or reallocated resources that pursues or supports achievement of an enhanced goal, either above and beyond a previously adopted core goals or in less time than originally designed. The focus for outcome enhancements is being *remarkable*—with strong partnerships and honed expertise we can achieve public health outcomes beyond initial expectations.

We prioritize activities based on their classification. Our intent is to fund all core services and strategic initiatives first and fund outcome enhancements as resources, tools, and partners become available. We fund core services first because they pursue mandates. We then prioritize funding strategic initiatives. This frees up core service resources to engage in outcome enhancement and additional strategic initiatives.

6.2 Goalsetting

While some funding is restricted to specific uses, our program areas share funding sources and staff members, especially critical agency support. Since resources are shared, individual programs cannot set their own goals. Goals must be set within officewide priorities. In adopting program plans, ODW creates goals with their relative priority, available strategies, nominal resource allocation, and desired timeline to achievement in mind (see the Policy review subsection below).

Transformational plan. In setting data-driven goals for each program, we pursue one of the Environmental Health strategies in the department's Transformational Plan.

- **Priority III, Strategy 3**: Incorporate data-driven approaches and community engagement strategies, assets, and strengths, into public health and response planning efforts aimed at building resilience against the health and social impacts of climate change and other environmental challenges.

This strategy forms the core of our program planning model. Each program goal serves as a hypothesis that documents the interventions we intend to implement and measures the outcomes they produce. Setting valid goals paired with implementations based on each community's strengths and weaknesses allow us to dynamically adjust our approach as needed to achieve positive public health outcomes.

SMART goals. Valid program goals must be focused solely on drinking water outcomes and be SMART, that is, they are always:

- **Specific.** The goal is clear who is responsible and what they are expected to achieve.
- **Measurable.** The goal has an objective method, documented in the program plan, to determine whether it has been achieved.
- **Attainable.** The goal is reasonably achievable given the program plan's available strategies, resources, and time.
- **Relevant.** The goal pursues ODW's mission.
- **Time-bound.** The goal sets the date when there's a reasonable expectation that the goal will be achieved.

Core and enhanced goals. Goals are expressed as either a core goal or an enhanced goal. Core goals are associated with achieving a federal, state, departmental, or self-imposed mandate. Enhanced goals are associated with higher levels of achievement provided additional resources become available. (See section 6.1 Priorities.) There are no initiative goals because strategic initiatives affect departmental efficiency, not public health outcomes. For more on how core and enhanced goals are addressed differently by the program plan, see section 7.5 Plan documentation.

Crosscutters. Some topics are global and must be addressed by all goal-making efforts.

- **Environmental justice.** Programs must consider establishing goals that are focused on identifying and addressing historical injustices and eliminating disproportional impacts to under-resourced, marginalized, and oppressed communities. See Section 12.3 Environmental justice.
- **Staff and financial resources.** Goals must be made with the awareness of the program area's relative priority and availability of people and tools to perform the work. Lower priority program areas are assigned less ambitious goals with longer timelines to allow us to rely on more efficient (though, typically less effective) interventions. See section 7.4 Interventions and preferences for more on how we view our interventions.
- **Unresolved policy issues.** A program may adopt multiple goals on the same topic based on the potential outcomes of policy development activity. For example, a core goal may be adopted based on one policy outcome with an enhanced goal based on a

more assertive policy outcome. If a goal cannot be set due a unresolved a policy issue, the plan will identify the unresolved policy issue and commit to resolving it.

- **Other partners.** Partners have their own policy and resource processes to perform. We must reach consensus with our partners on goals that depend on their financial or labor participation.

These are addressed in greater detail in section 7.6 Support considerations.

Cross-program goalsetting. In some cases, we make statewide program goals in a cross-program manner. For example, multiple programs are affected by the emphasis on asset management, including DWSRF, Capacity Development, and Water System Planning programs.

Policy review. When we evaluate the gap between industry performance and expectations as part of an ongoing program, progress based on earlier efforts help us determine what may be attainable. Program attainment is evaluated as part of the implementation cycle's Plan-Do-Check-Adapt continual improvement strategy within the strategic framework. When a program has not yet met a goal, or if it has substantially exceeded it, there are up to four possible responses: revise the goal, reallocate resources, redirect the strategy, or reschedule the goal achievement date.

- **Revising goals.** If the program substantially exceeded its goal, then we may update the goal to be more protective of public health. If the program did not meet the goal, we would evaluate reasons the goal was not met. We may revise the goal based on the evaluation but would not revise the goal to be less protective of public health.
- **Reallocating resources.** If the goal was substantially exceeded, then we may reduce resources to the program, that is, we'd lower the program's priority. Alternatively, if the goal was not reached, the program may be assigned a higher priority with increased resources.
- **Redirect strategies.** If the program has exceeded its goal, we may direct the program to maintain the program with more efficient strategies in the future. On the other hand, if the goal was not reached, we may authorize the program to use more assertive strategies.
- **Reschedule.** If a goal was not reached, but it is apparent that additional time will allow it to be attained, a new date for goal achievement may be adopted. (Changing the schedule is not relevant for achieved goals.)

Table 4: Potential responses to goal achievement evaluation

Responses	Goal not achieved	Goal substantially exceeded
Revise goals	Evaluate reason goal was not met and revise goal base on the evaluation	Update goal to be more protective of public health
Reallocate resources	Grant higher priority with increased resources	Reduce resources to the program (deprioritize)
Redirect interventions	Authorize program to use more assertive interventions	Direct to use more efficient interventions
Reschedule	Set new date for goal achievement	

6.3 Products and reports

We use the statewide program goals to update each drinking water program plan. We report the statewide program goals through updated program plans (Chapter 7). We will consider other methods of reporting updated statewide goals.

7.0 Program planning

Subject matter experts within each program design implementation plans intended to achieve statewide program goals. Programs are urged to **Be Bold** when developing plans to protect and improve public health. Creating and updating program plans satisfies the "Plan" element of ODW's Plan-Do-Check-Adapt continual improvement process. (See the Strategic framework chapter.)

Program plans are developed within the scope of ODW's mission: "We work with others to protect the people of Washington by ensuring safe and reliable drinking water." We form partnerships with others to achieve each program's goals.

7.1 Program-oriented organization

Team and workgroups. While we maintain a traditional organizational structure for administrative and personnel purposes, teams and workgroups provide the fundamental structures for our work. Teams are persistent work units that carry out our core work. They are responsible for developing and implementing program plans to achieve statewide goals within time, resource, and strategy limitations set by ODW leadership.

Workgroups are transient work units that exist for a specified time to carry out project-, initiative-, or directive-based work. We form these as aids to team activity, such as a rulemaking team focused on one or more program rule updates or for non-program activities, including the creation of new programs. Each workgroup is decommissioned when it achieves its goals.

Our office leadership initiates a team or workgroup by defining the vision, intent, and operational landscape for the program or project, as advised by subject matter experts. We include staff in teams and workgroups to bring together cross-program and cross-unit expertise and data on a common topic. Our intent is to empower and encourage data-driven, consensus-based decision-making at the program area or project level.

The value of teams and workgroups comes by ensuring that each member:

- Embraces the vision of the program.
- Demonstrates their willingness to do what it takes to get the work done.
- Understands their role in a team's program plan or a workgroup's work plan.
- Possesses the skill set necessary for their role.
- Understands the resources they need to meet their full performance expectation.
- Approaches the work with a spirit of collaboration.

7.2 Program lifecycle

Not all programs are in the same stage of life. At any time, we are just launching some while others have reached full operational maturity. Over time, the goals, strategies, timelines, and resources for each program changes as each program's outcomes change. Programs may also spawn newly launched programs or harmonize into a single program.

Launch. During the launch phase of a program, ODW addresses new activity that calls upon our resources to establish initial goals, strategies, and timelines. Newly launched programs often call for significant initial investment with a wide range of internal capacity-building beyond what a mature operational pace would normally require. For instance, the lead and copper program operate separately from other distribution-related water quality programs because it has unique needs that require specific strategies and resources. Programs in their launch phase are often led, though not exclusively, by a workgroup that exists only while necessary to make the program effective.

Maturity. Over time a new program will establish an ongoing operational pace as we learn that the resources and strategies were sufficient to address the program's initial goals and timelines. When mature, programs are no longer engaged in bringing water systems up to minimum standards, but instead are monitoring to ensure that water systems maintain capacity. Programs typically make minor changes through its Plan-Do-Check-Adapt cycle. Mature program overhauls are rare. We staff mature programs by teams with the long-term responsibility to keep the program effective and increasingly efficient.

Splitting. When a part of a program needs additional focus due to changing requirements, we may split out a new program. For instance, ODW is currently launching a new water availability program, conceptually splitting it away from the existing water system planning program. This split is due to an infusion of earmarked resources to develop new tools that LHJs and local governments can use to make both current and long-range planning decisions.

Integration. When they have similar or complementary employee skill demands, we may merge two mature programs into a single program for operational efficiency. For instance, once the Water Availability Program matures, we will likely reintegrate it into its parent program.

Recognition of this program lifecycle lends flexibility to office leadership to pursue public health priorities with the appropriate personnel, resources, timelines, and strategic authority.

7.3 Water system capacity and risk

Water system capacity is not a goal or destination, but rather a risk spectrum. Water systems that lack minimum capacity expose their consumers to unacceptable levels of risk. The world is never without some risk. Each community has a different level risk tolerance and may be more vulnerable to certain kinds of risks and less vulnerable to others due to the characteristics of the community or the water system. For example, the potential for uranium contamination of groundwater is likely only in certain geologic units. In those counties where those minerals are present, we require additional water sampling to ensure its safety before approving a new public water system. The tools and level of effort we choose differs based on the level of risk consumers bear (see section 7.4 Interventions and preferences).

Risk-mediated strategies. Washington's tools are extensive, including incentives, encouragement, mandates, and enforcement. However, not all tools are appropriate for all

situations. We use more assertive tools the higher the risk. See section 7.4 Interventions and preferences for additional detail. We base our strategies on the severity of risk and the Water System's Capacity to address the identified issue.

- **Incentivize.** We and other state agencies (See section 5.3 Partnerships), encourage sustainability by incentivizing water system capacity development activities through the provision of subsidies, grants, and loans. Because such funds typically do not satisfy demand, we prefer to use incentives to fund permanent, complete, constructed solutions to water system challenges over temporary, incomplete, or operational remedies.
- **Encourage.** We encourage resiliency in water systems by assisting them in adopting policies and practices that exceed the minimum requirements of water system operation. When encouragement is appropriate, incentives may be applicable when funding is available.
- **Mandate.** Incentives and encouragement are also valid as we require public water systems to adopt policies and practices that meet minimum requirements. We use more assertive strategies to achieve water system compliance than we use to achieve resilient or sustainable solutions.
- **Enforce.** We use the most assertive strategies when public health is at greatest risk. As a result, recalcitrant purveyors may be fined, decertified, or removed from water system responsibilities when they demonstrate an inability or unwillingness to take necessary actions to protect public health.

Spectrum of Water System Capacity. We use different tools based on the severity of the risk imposed by the water system and its purveyors on its consumers. The Spectrum of Water System Capacity is depicted in Figure 3: The Spectrum of Water System Capacity. We use this tool when designing programs to ensure that the strategies we use are appropriate for the level of risk. We do not rate individual purveyors or water systems under this guideline.

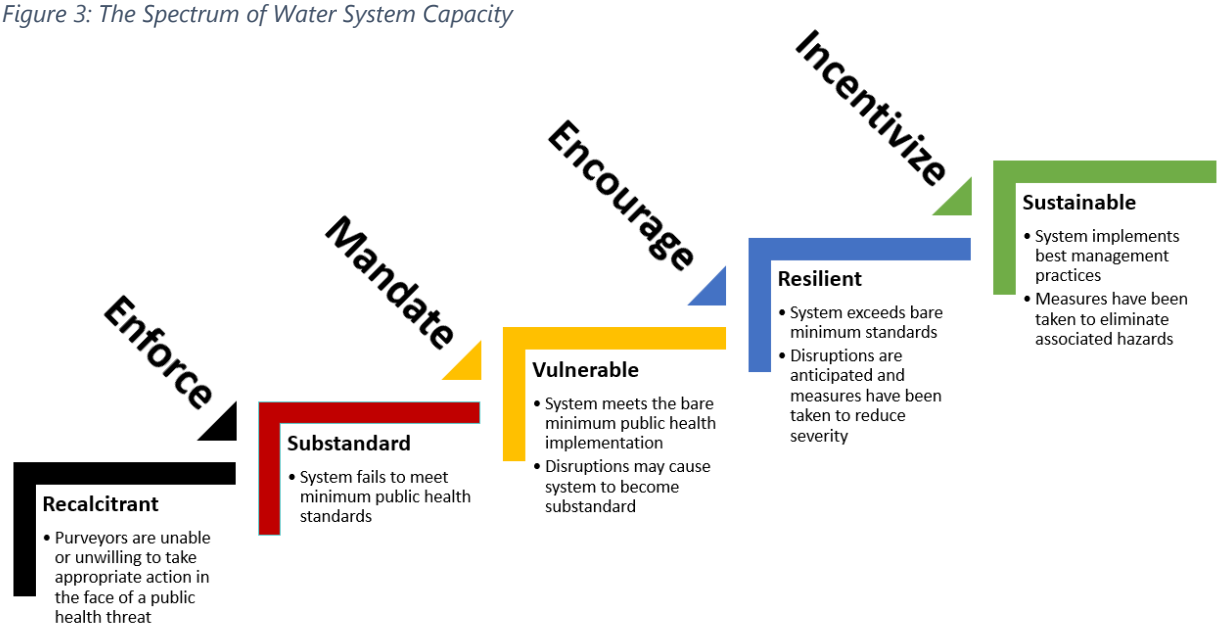
- **Recalcitrant** purveyors are people (system owners or operators) who lack either the ability or willingness to take the actions necessary to return their water system to compliance. Purveyors in this category may benefit from any of our tools. However, the reason they find themselves in this highest risk category is that mandates, encouragement, and financial incentives have failed to inspire required behavior. With all other alternatives exhausted, only enforcement remains. Most programs have access to enforcement mechanisms that can either penalize recalcitrant purveyors or remove them altogether from system management so that qualified personnel can return the system to compliance.
- **Substandard** water systems expose their consumers to an unacceptable level of risk by failing to meet public health standards, but the purveyors are willing and able to make the necessary change. Because they are not recalcitrant, water systems in this category benefit from structured plans to meet mandates, receive encouragement and incentives that pursue a return to compliance. Most programs have access to compliance assurance

activities to assist substandard water systems to engage in a structured program to achieve minimum drinking water standards.

- **Vulnerable** water systems satisfy all minimum standards—but only the minimum. Any operational or natural disruption has the potential to cause the water system to fail to meet drinking water standards. Programs encourage water systems to do more than the minimum using passive, collaborative, technical assistance, and financial assistance tools. Compliance assurance and enforcement, however, are inappropriate when water systems are otherwise in compliance with minimum drinking water standards.
- **Resilient** water systems exceed bare minimum public health standards by anticipating disruptions and implementing measures to reduce their frequency or severity.
- **Sustainable** water systems implement best management practices and take actions that avoid or mitigate risk. For example, adding treatment to a well with groundwater under the influence of surface water may be sufficient to satisfy a public health threat. However, a new source that isn't under the influence of surface water may be a preferred, and incentivized, solution because it doesn't carry the risk associated with treatment failure.

Pre-enforcement assistance. All primary ODW programs contain elements of technical assistance. Some programs also have compliance assurance and enforcement components. For these programs, we participate in Washington's overarching regulatory approach by offering technical assistance and an opportunity to correct deficiencies before we engage in enforcement activities. A program only incorporates compliance assurance and enforcement components if the program is responsible for pursuing a minimum public health standard or other legislative direction. When programs lack compliance assurance and enforcement components, a water system cannot be considered recalcitrant or substandard within that program area. However, the water system can still advance its capacity in that program area and receive assistance from us.

Figure 3: The Spectrum of Water System Capacity



7.4 Interventions and preferences

Different strategies are useful for different levels of capacity. What's considered substandard changes over time. Best management practices accumulate as technologies advance. Therefore, we develop and apply varying interventions based on the water system's circumstances. To achieve their goals, programs employ a variety of passive, collaborative, technical, financial, and regulatory interventions to assist public water systems. Our interventions:

- Help water systems comply with national primary drinking water regulations.
- Encourage partnerships.
- Enhance water system TMF capacity.
- Help the industry maintain a corps of trained certified operators and professional water system management organizations.

To optimize the use of limited public health dollars, ODW endeavors to use the most efficient, effective intervention that is also effective. It is our intention to employ the least assertive intervention that protects and improves public health. Program plans prioritize intervention based on the issue's relative location on the spectrum of water system capacity.

Transformational Plan. In flexibly applying the more appropriate interventions for the community's situation and capacity, we pursue one of the Environmental Health strategies in the department's Transformational Plan.

- **Priority III, Strategy 1**: Support systems and policies that promote optimal individual and community health by investing in proactive efforts to advance a broad range of healthy environments and interactions where people live, learn, work, worship, and play.

Because each water system serves different people with water acquired from different environments and experiencing different kinds of water system problems, we are encouraged by this strategy to create and apply a wide variety of public health interventions to achieve state and local goals.

Passive interventions. Passive interventions are activities that do not involve real-time interaction between a water system and an ODW employee. Some water system capacity issues can be solved without contacting an ODW staff member. This can include self-help and peer network activities. (See section 13.3 Peer Networks.)

Passive interventions are highly efficient because they demand no additional ODW resources to use. The effectiveness of these interventions is limited by the technical or managerial skills of the water system. Passive interventions can only be applied by water systems with sufficient technical and managerial capacity. The water system must be able to identify and apply the assistance and build and maintain relationships within their peer networks.

Collaborative interventions. ODW engages in collaborative interventions on behalf of the drinking water industry and general public. We can solve some water system capacity issues by

statewide collaborative action where we are uniquely positioned to provide coordination. Collaborative interventions include drinking water data management, facilitation of distributed effort and shared services, policy development, and maintaining specialized expertise. Collaborative interventions are less efficient than passive interventions because they use state resources. We undertake them when we determine they are more efficient than existing technical, financial, and regulatory interventions.

Collaborative interventions' effectiveness varies depending on how they affect other intervention types. For example, creating a media campaign that each water system can use creates a new passive intervention. Rulemaking that changes how we provide DWSRF loans creates a new or different financial intervention. Collaborative interventions are applicable to ODW when improving the TMF capacity of the drinking water industry by providing our own managerial or technical capacity to replace the water system's capacity.

Technical interventions. Technical interventions are ODW activities that provide information to water systems. The transfer of information provided by ODW subject matter experts and partners can solve a wide variety of water system problems. Strategies include engaging in group technical assistance, third-party technical assistance, multi-jurisdictional technical assistance, and individualized technical assistance.

Technical interventions have the benefit of improved effectiveness over passive and collaborative interventions in more complex or exceptional cases. However, this comes at an efficiency cost as technical interventions consume the majority of ODW's staffing resources. Technical interventions are applicable to water systems that lack technical, managerial, or financial capacity, but have enough managerial capacity to apply the assistance.

Much of the work we do for asset management falls under this type of intervention, such as focused technical assistance provided as webinars through contracts with third party technical assistance providers and individualized technical assistance as we review WSP and SWSMP.

Table 5: Intervention application, efficiency, and effectiveness

Intervention Type	Intervention	Description	Applicable to…	Efficiency	Effectiveness
Passive Interventions	Self-help	Water systems find help without interaction with ODW personnel	Water systems that lack specific technical, managerial, or financial capacity, but have achieved sufficient managerial capacity to apply the assistance	Very High	Variable—dependent on the water system's managerial capacity to identify and apply the information and the acuteness of the threat
	Peer networks	Water systems interact with their peers and other networks			
Cooperative Interventions	Policy development	ODW adopts rules, policies, and procedures	ODW when improving the technical, managerial, or financial capacity of the drinking water industry	High	Moderate to high—dependent on the new kind of intervention (passive, technical, financial, or regulatory) it creates
	Facilitation	Statewide coordination			
	Specialized expertise	Research and technique development			
	Data management	Collection and generation of information			
Technical Interventions	Group technical assistance	ODW provides assistance to groups of water systems at events	Water systems that lack specific technical, managerial, or financial capacity, but have sufficient managerial capacity to apply the assistance	Moderate	Low to high—dependent on the water system's managerial capacity to apply the information
	Focused technical assistance	Other parties, facilitated by ODW, provide limited technical assistance			
	Coordinated technical assistance	ODW works with other organizations to provide technical assistance			
	Individualized technical assistance	ODW provides direct technical assistance to water systems			
Financial Interventions	Loans	ODW provides financing	Water systems that lack technical capacity, but have demonstrated sufficient managerial and financial capacity to receive funding or lack financial capacity due to the absence of economies of scale	Low	Medium to high—dependent on the degree to which the expended funds are reusable and well prioritized
	Grants	ODW provides funding			
	Subsidies	ODW charges less than the cost of providing individualized service			
Regulatory Interventions	Compliance assurance	ODW orders water systems to resolve a public health threat	Water systems that have a severe managerial capacity deficiency that make them unwilling or unable to address technical, managerial, or financial capacity issues even after all other reasonably effective assistance strategies were made available	Very Low	Very high—intervention does not end until the issue is resolved
	Enforcement	ODW sanctions or removes purveyor for failure to resolve a public health threat			

Financial interventions. Financial interventions are ODW actions that provide financial resources to water systems in the form of loans, grants, and subsidies. ODW can solve some water system problems using monies we manage. (For the purposes of this document, DWSRF targeted subsidies such as principal forgiveness, reduced interest rate, and loan origination fee waivers are categorized as "grants.")

Grants and loans involve the use of millions of dollars for a very limited number of water systems. Additionally, non-grant subsidies are not means tested. Consequently, financial interventions are highly inefficient. Most financial interventions tend to be effective when ODW provides financial resources through a competitive process that optimizes the state's use of limited public health funding. Financial interventions are appropriate when water systems lack technical capacity but have demonstrated enough managerial capacity to implement the project and enough financial capacity for repayment of the loan. (For more on water system tools and challenges, see the Financing chapter.)

Regulatory interventions. Regulatory interventions are ODW activities that use state authority to direct or assertively influence the actions of water system personnel. These interventions include two strongly related strategies: compliance assurance and enforcement. These strategies operate pursuant to written "compliance strategies" to prevent arbitrary and capricious application of state authority.

Regulatory interventions can be effective because they do not end until the water system eliminates the public health deficiency. Regulatory interventions are the least efficient form of intervention because they are incapable of addressing the underlying public health problem or other legislative mandate itself. Instead, they address the purveyor's inability or unwillingness to undertake required action. Regulatory interventions are applicable when water systems demonstrate a lack of managerial capacity to address TMF capacity issues without more assertive prompting from ODW. This may also involve the suspension or revocation of operator certification and conveying a water system to a receiver. For more information about regulatory interventions, see section 13.2 Recalcitrant Purveyors.

7.5 Plan documentation

Plans may be organized in any way that supports team empowerment and meets the lifecycle stage and appropriate level of planning for that program. Typically, they have multiple parts that address three broad responsibilities:

- **Direction and delegation of authority.** The direction and delegation of authority is typically divided into two parts:
  - *An executive summary* that addresses high-level, strategic elements such as the reason the program exists, program goals, and resource allocation.
  - *Basic program direction* that goes into greater detail about the specific interventions that may be employed and often specific objectives to be produced by the program team and its partners.

- **Implementation plan.** The implementation plan is the heart of the document. It assigns responsibilities for achieving the program's objectives and is alterable by the team (within its direction and authority) as necessary to achieve program goals. Because they have been funded, core goals have well-documented, flexible work plans with assigned responsibilities and timelines. Enhanced goals have identified responsibilities, but without the required resources, their timelines are approximated. Once funded, enhanced goals are planned in the same way as core goals.
- **Support documents.** Programs often have many supporting documents of two types:
  - *Appendices* provide support, guidance, or direction for performing program tasks.
  - *Measured outcomes and updates* inform subsequent program planning activity.

7.6 Support considerations

When the program team is considering its program's implementation, the availability of the tools and relationships it relies on must also be considered. The relationships may include other organizations (see section 5.3 Partnerships) and support within ODW, EPH, or the department (see Chapter 10 Critical agency support). Consequently, program plans also address the following support needs.

- **Communications.** We have a variety of methods available including a website, email, surveys, list servers, newsletters, publications, and video that programs can use to pursue their goals. We consider what kinds of communications are necessary for program purposes because some communications (such as publications, newsletters, and the website) are coordinated across the agency.
- **Environmental justice.** Programs must evaluate the existing and proposed disproportionate implementation impacts on minority populations, low-income populations, and indigenous peoples (see section 12.3 Environmental justice).
- **Compliance assurance and enforcement.** Each program develops a compliance strategy, when authorized. ODW has both limited and full enforcement programs.
- **Data management.** All programs generate some data and require data management. They document what information the program gathers and maintains, including the purposes for which the data is needed. The implementation plan identifies gaps in the information or information storage. If there are data tools that need to be developed, plans describe the nature of the tool and how its development would improve service delivery or reduce other resource demands.
- **Performance management.** All programs identify operational measures to monitor and evaluate the performance of the program. Programs may also wish to identify goals to enhance the program. Some program measures may also signal the health of the public and their water systems and are used as a measure of the State's performance.
- **Staff and financial resources.** Each program identities the number of staff and resources available to the program team to achieve their goals. The plan may also identify additional resources need to make program enhancements.

- **Third-party contracting.** Some of the resources we have can be supplied to third-party contractors who can perform a variety of capacity development activities.
- **Unresolved policy issues.** The program must identify unresolved policy issues and prioritize policy work within the team.
- **Other partners.** The plan must also consider and document what other organizations have a role in achieving the program's mission and goals, along with documentation of acceptance of that role.

7.7 Products and reporting

Programs report progress on objectives. The implementation plan also addresses requirements for water system lifecycle capacity (See section 8.3 Water system lifecycle):

- **Initial.** The program plan states what new water systems must do or show to start operations under the program.
- **Internal.** The program plan states what the program team does and what it measures to ensure water systems are maintaining TMF capacity to satisfy program requirements.
- **External.** The program plan must state what opportunities the program team provides or is developing to help water systems deal with emerging threats.

8.0 Program implementation

Program teams are empowered to implement their approved program plans. Implementing program plans satisfies the "Do" element of ODW's Plan-Do-Check-Adapt continual improvement process. (See Strategic framework chapter.)

8.1 Program management

Implementation flexibility. Teams are authorized to update their proposed implementations to increase the program's likelihood of success and improve team efficiency. It's limited only by their program's authority and available resources. When updating their program implementation, program staff coordinate with their managers to allocate their time to each program for which they are responsible. This gives each program the best opportunity to achieve its goals.

Regional Flexibility
While all programs pursue statewide goals, due to the geological, industrial, and climatological diversity of our state, different regions have unique issues that require focused efforts and strategies. Regional offices have flexibility to adjust their staff allocations to meet varied demands. For example, agricultural sources of nitrate are more common in ODW's Eastern Region, so that region's leadership allocates a full-time employee to the nitrate program. The other two regions have staff members who allocate a portion of their time to addressing nitrate issues, directing their effort to other issues, such as the Northwest Region's emphasis on disinfection training and reporting. These allocations may change as the program's goals, resources, strategies, and timelines change.

Managerial facilitation. While each program has a nominal resource allocation, ODW staff must balance their day-to-day participation among the programs they implement with the advice and consent of their managers. While a nominal, multiyear resource allocation is set for each program, real-time resource allocation remains flexible to best respond to both officewide and regional priorities. Some programs have natural cycles of effort that change over the course of a year or over multiple years. The state revolving fund and sanitary survey programs are classic examples of programs with strong annual cycles. Additionally, programs that are at the beginning of a new planning cycle may have new tools to develop that are implemented later. ODW managers coordinate and communicate officewide priorities to help program staff satisfy their program requirements.

Compliance assurance and enforcement. When compliance assurance is necessary for any single program, a comprehensive compliance assurance document is generated with the input of all programs. When systems are out of compliance, we employ program-specific strategies that direct us to:

- Emphasize public health protection as our top priority.
- Enforce requirements to hold purveyors accountable for compliance.
- Educate consumers and notify system owners of requirements, including the consequences of unmet requirements.

- Follow-through in a consistent, fair, and timely manner with compliance actions that are appropriate for the violation.

8.2 State authority

Protecting and improving public health is a constitutional duty of the state. We implement public health, and TMF standards adopted or delegated by SBOH and the Secretary of Health. These rules meet or exceed the requirements of the federal Safe Drinking Water Act that we administer pursuant to a primacy agreement with the (EPA). The authority the state has implemented is summarized in Appendix A.

Monitoring purveyor responsibilities. Each drinking water program area provides passive, collaborative, technical, financial, or regulatory responses based on the purveyor responsibilities it monitors. For example, the "Maintain an Operating Permit" responsibility is monitored by the Operating Permit program staff. Each program area has a set of authorities based on the strategies integrated into their program plans.

Purveyor responsibilities monitored by other agencies may have delegated or independent authority. For example, the state's Utilities and Transportation Commission (UTC) has independent authority to approve water rates for privately-owned water companies that serve more than 100 customers or have charges that exceed an average of $557 per customer per year. The UTC ensures water rates are just, fair, and reasonable for customers and sufficient to cover legitimate costs and opportunity to earn a return on capital and investigate rate disputes.

Evaluating Capacity. Each of the purveyor responsibilities listed in Appendix A is accompanied by the aspects of capacity that is being evaluated or developed. Each authority is related to one or more of technical, managerial, or financial capacity, symbolized by T, M, or F, respectively. For example, water system plan review and approval reviews TMF capacity of the water system and requires a minimum level of capacity for each. On the other hand, the ability of a purveyor to issue appropriate public notification is a measure solely of their managerial capacity.

Agency response. For each of the responsibilities listed in the Purveyor Responsibility column of Appendix A, the actions that DOH takes to evaluate or develop the purveyor's capacity is listed in the second column. For instance, the action that DOH, Ecology, and UTC takes for a new, expanding, or large community system is the review, evaluation, and approval of an initial or periodic water system plan.

Group A operating permit color. DOH requires all Group A water systems to obtain an operating permit. The required approvals for a new systems' operating permit include a water system planning document, construction documents, and source approval. By requiring all systems to obtain an operating permit, ODW's operating permit program ensures systems have and maintain capacity.

Operating permits are issued with an associated color that indicates the water system's compliance status. The color of the permit is determined by evaluating the system under criteria

listed in WAC 246-290-040(2). If a water system can be categorized under multiple operating permit colors, DOH will assign the lowest category in Table 6.

Table 6: Operating permit colors

Color	Basic Description	Capacity adequacy
Green	Substantial compliance	Adequate for existing and new services
Yellow	Incomplete compliance	Adequate for existing and new services, unless limited by a compliance agreement
Blue	Potentially overconnected	Adequate for existing, but not new, services
Red	Substantial noncompliance	Inadequate for existing and new services

Green. A green operating permit means the water system is in substantial compliance with drinking water regulations. DOH considers systems in this category as adequate for existing uses and adding new service connections up to the number of approved service connections. A system will lose its Green operating permit if it can be categorized under any other permit color.

Yellow. A yellow operating permit means that the system is substantially in compliance with drinking water regulations, except that the system either has:

- **Failed to plan.** This yellow permit comes from having been notified of the water system planning provisions of WAC 246-290-100 and failed to satisfy the requirements. A system can regain its green operating permit by successfully gaining approval of its required water system plan.
- **Entered into compliance agreement to resolve violations.** In this case, the water system is violating or has violated department rules, and the violations may create or have created an imminent or a significant risk to human health; but the purveyor has signed a compliance agreement with DOH to resolve the violations and is acting in accordance with the compliance agreement. In this case, we may limit new connections to the system. A system can regain its green operating permit by resolving the violations.

There are no direct consequences for having a yellow permit, other than the expectation that progress be taken toward resolving the deficiency.

Blue. A blue operating permit means that the system is substantially in compliance with drinking water regulations, except that the system has not demonstrated sufficient evidence of legal and physical capacity for its existing connections, either by:

- **Not having design approval.** Failing to meet the design approval requirements of WAC 246-290-120 or WAC 246-290-140.
- **Over-connecting.** Exceeding the number of department-approved service connections.

The consequence of a blue operating permit is that no new services can be added to the system. In either case, a system can regain its green operating permit by securing departmental approval

for engineering documents that demonstrate that it possesses sufficient legal and physical capacity for its existing connections.

Red. A red operating permit category indicates that the water system is inadequate because it is substantially out of compliance with drinking water regulations, by:

- **Not complying with or disregarding an agreement.** Violating or having violated department rules, and the violations may create or have created an imminent or a significant risk to human health; and the purveyor has not signed a compliance agreement with DOH or has signed a compliance agreement but is not acting in accordance with it.
- **Violating departmental order.** Violating a DOH order.
- **Posing imminent threat.** Under a DOH order for violations that pose an imminent threat to public health.

Like the blue permit, the consequence of a red operating permit is that no new services can be added to the system. Additionally, purveyors with a red operating permit are subject to substantial enforcement actions (see section 13.2 Recalcitrant purveyors).

Unlike the other permit colors, however, a system with a red operating permit may have significant effects on its customers. A red permit could result in denial of building permits, on-site sewage disposal permits, food service permits, liquor licenses, and other permits or licenses for properties connected to or to be connected to the water system. In addition, lending institutions may choose not to finance loans associated with these properties. Systems operating under a red permit are listed publicly on DOH's website at Water Systems Operating Under a Red Permit | Washington State Department of Health. A system can regain its green operating permit (or yellow in the case of a noncomplier) by resolving the violation(s) to DOH's satisfaction.

Table 7: Operating Permit Consequences

Color	Additional Actions	Due to…
Yellow	No new services, if limited.	Failed to plan as required
		Significant noncomplier, but in compliance with compliance agreement
Blue	No new services.	Does not meet design approval requirements
		Exceeds the number of approved service connections
Red	Subject to enforcement program. No new services. No regulatory permits. No property financing. Public identification.	Significant noncomplier and not in compliance with signed compliance agreement
		In violation of departmental order
		Violations that pose imminent threat to public health

8.3 Water system lifecycle

The capabilities for individual water systems are a function of what stage the water system is in its lifecycle. For example, we have authority to prevent a water system from engaging in

operations prior to demonstrating sufficient capacity to the department. However, once operational, water systems must continue to operate and serve consumers even when they are struggling to attain, reacquire, or maintain their capacity. Consequently, different authorities apply to water systems depending on whether they are new, existing, or transitioning.

A list of all state authorities, including the authority of other state and local agencies, the basis of the authority, and assessed capacity, throughout water systems' life cycle is contained in Appendix A: Application of authorities.

New systems. To prevent the proliferation of small, inadequate water systems, the state developed authority in 1977 to address new public water systems. The use of this authority is intended to:

- Prevent the creation of a new public water system when other water systems are available.
- Result in systems constructed according to approved standards.
- Require systems to plan for the future.
- Have professional management available for all new systems regardless of size.

DOH provides significant technical guidance and review for water system design (see section 7.4 Interventions and preferences). We do this through published guidance, templates, and review services. This helps purveyors and their consultants navigate state requirements for well-designed and appropriately staffed new water systems. These services help new systems achieve the TMF capacity and meet safe drinking water standards. TMF capacity requirements include:

- **Planning.** Systems designed to become a Group A Community system must gain state approval for an initial WSP. Systems designed to become a Group A-NTNC system must gain state approval for an initial SWSMP. For both community and NTNC systems, the WSP or SWSMP is reviewed and approved to ensure that minimum TMF capacity has been demonstrated. Group A-TNCs are required to have a SWSMP and must submit system design or the Group A-TNC Water System Design Workbook for review and approval. New Group B systems complete and submit the Group B Design Workbook to ODW or LHJ, for review and approval.
- **Enforceable service areas.** DOH will not approve the creation of a new water system in areas with a coordinated water system plan unless service is denied by existing water systems. Water system applicants are directed to existing systems for service in claimed service areas, rather than allowing new systems to be formed.
- **Environmental protection.** DOH will not approve the construction of a new publicly owned water system without a determination of nonsignificance; a final environmental impact statement; or, in the case of a federal or federally funded project, the publication of notice of state environmental review process exemption.

- **Water right.** DOH will not authorize the creation of a new public water system without documentation of sufficient water rights. DOH has an MOU with Ecology to review water rights adequacy.
- **Source approval.** No new source, previously unapproved source, or modification of an existing source shall be used as a public water system without DOH approval. New and expanding Group B sources must meet Group A drinking water standards without treatment.
- **Source water protection.** DOH requires that all Group A systems obtain drinking water from the highest quality source feasible. Water systems are required to complete a source water protection program as part of a water system planning document including maintaining a sanitary control area around a source for the purpose of protecting it from existing and potential sources of contamination.
- **Planning before construction.** DOH will review submitted project reports and construction documents only if there is a current approved planning document and the plan adequately addresses the projects.
- **Project report.** Purveyors must receive approval for projects associated with creating a new system before they can begin construction.
- **Construction documents.** A new water system must prepare engineered construction documents and must receive approval by DOH prior to construction of any new facilities. Systems are required to submit a construction certification report after completion of the project.
- **Engineering.** All engineered documents must be stamped, signed, and dated by a professional engineer licensed in Washington. The engineer must have expertise in the design, operation, and maintenance of public water systems.
- **Local consistency.** DOH will not approve planning and engineering documents unless they are consistent with relevant, locally adopted plans and regulations.
- **Stop work.** DOH will issue a stop work order if it determines that a system is being constructed without the necessary approvals.
- **Professional management.** DOH requires new public water systems to be owned or managed and operated by an approved SMA when one is available. DOH places conditions on approval documents for new systems to obtain professional management.
- **Certified operator.** All community and NTNC water systems must be operated by a certified operator. TNC water systems with treatment plant processes defined in WAC 246-292-040 or those required to have disinfection to meet CT6 or 4-log virus inactivation must be operated by a certified operator. Certified operators must meet minimum educational and testing standards and receive continuing education.
- **Operating permit.** All Group A public water systems must obtain an annual operating permit from DOH accompanied by a water facilities inventory (WFI) update.
- **Adequacy finding.** Local governments must make written findings regarding provisions for potable water supplies or adequacy of water supply when considering short plat, subdivision, and individual building permit applications.

Existing systems. Once a new system has been constructed, the water system has an obligation to serve its customers, so DOH can no longer tell the purveyor that it isn't allowed to operate. Even the best-constructed system is not designed to address all environmental threats, so increased TMF capacity is required. Consequently, our strategies change to monitor system operations and respond to potential capacity issues.

- **Planning.** All Group A water systems must either gain periodic approval of an updated WSP or develop and maintain a SWSMP. These documents are reviewed during sanitary surveys. We maintain a copy of submitted plans as a resource for when we provide technical assistance.
- **Professional management.** Systems coming into service after 1995 must continue to be owned or maintained and operated by an SMA when one is available.
- **Expansion.** Any new service expansion must be approved by DOH in the same way a new system is an expansion of service. This includes:
    - Having sufficient water rights.
    - Providing service only within its service area agreement.
    - Source approval.
    - A source water protection plan.
    - Approval of planning prior to construction.
    - Required engineering qualifications.
    - Project reports and construction documents.
    - Avoidance or mitigation of probable, significant, adverse impacts on the natural and human environment.
    - Compliance with stop work orders.
    - Consistency with local plans and regulations.
- **Interties.** No interties may be used or constructed without DOH and Ecology approval.
- **Ongoing operational requirements.** Maintaining up to date information is vital. The WFI must be kept current, operating permits are renewed annually and certification of operators must be maintained.
- **Operations and maintenance (O&M) plan.** Group A systems must be operated in accordance with an approved O&M plan as provided in a WSP or SWSMP. The O&M plan must include information regarding water system management and personnel, operator certification, comprehensive monitoring plans for all contaminants, emergency response program, a cross-connection control plan, and maintenance and reliability standards.
- **Water quality monitoring.** We require all Group A systems to conduct water quality monitoring at the source and in the distribution system. Frequency of monitoring is based on the population served, system characteristics, source vulnerability, actual or suspected contamination, and evaluation of the effectiveness of treatment. A local health officer or DOH may require that Group B systems collect water samples.

- **Sanitary survey.** All Group A systems must cooperate in a sanitary survey conducted by DOH or its designee, including third parties and other qualified individuals. The purveyor must schedule the survey and ensure unrestricted availability of all facilities and records at the time of the survey.
- **Public notification.** DOH requires water systems to notify water system users, consecutive systems, and DOH of violations and other situations. Information must be in the appropriate languages or provide contact information to request translation assistance.
- **Consumer confidence.** Group A-Community systems must deliver specified content in annual reports to their customers.
- **Consumer protections.** Customers of investor-owned water systems receive additional protections. UTC approves water rates that are just, fair, and reasonable for customers; and sufficient to cover legitimate costs and allow the company the opportunity to earn a return on capital. Water systems must furnish their service safely, adequately, and efficiently, and at just and reasonable prices. Water system rules and regulations affecting or pertaining to systems' service must also be just and reasonable. UTC may require improvements to the purity, quality, volume, and pressure of water if it is found insufficient.
- **Audit.** The state auditor conducts accountability, financial, and federal single audits to check that local governments adhere to state laws, regulations, and their own policies and procedures. They also check if financial statements present a reliable, accurate picture. They want to know that local government complied with applicable federal requirements. UTC may conduct an audit of water systems not held by a state or local agency to identify legal roles and responsibilities, develop system financial programs, assess financial viability, inform system customers, and resolve UTC jurisdiction.
- **Duty to serve.** Municipal water suppliers (generally but not exclusively Group A community water systems) must identify a retail service area within which they have a duty to serve. Any service request within that territory must be served unless the request violates local regulations, exceeds the water system's water right or physical capacity, or the demand cannot be served in a timely and reasonable manner.
- **Water use efficiency.** Municipal water suppliers are responsible for increasing both demand- and supply-side water efficiency by developing a water use efficiency plan. The plan must implement strategies to reduce distribution system leakage and help their customers make wise water choices that result in a reduction in systemwide demand.
- **Connection limit.** Water systems must prevent over-connection. The department assigns a limit on the number of connections each water system may make based on its legal and physical ability to deliver water.
- **Comply with loan conditions.** The department will not approve construction funding unless the project is in an approved water system planning document. The document must address federal, state, and local laws. It must guarantee payment from a dedicated source. DOH needs to be confident that the recipient will maintain records, submit a

construction completion report, comply with EPA and departmental orders, and submit to an audit.

Transitional systems. Typically, water systems are ongoing concerns and remain in the existing system lifecycle stage. Sometimes, however, water systems come to the end of their lifecycle and cease to exist in their current form.

- **Service termination.** Both Group A and Group B purveyors may terminate utility service provided they give at least one year's notice to the customers and DOH. Group A purveyors remain explicitly responsible for the water system even if notice is not provided. This gives DOH and customers time to come to an alternate arrangement, including the strategies listed below.
- **Restructuring.** Transferring of ownership of a water system to another entity that may own multiple water systems. The restructured water system gains an increased economy of scale from the new owner.
- **Consolidation.** Physical combining of two systems. The result of a consolidation is the formation of one water system, rather than two connected by an intertie.
- **Receivership.** The secretary of health or a local health officer may petition superior court to place a failing public water system into receivership. When granted, receivership puts the water system into the hands of a receiver that can take all legal actions to bring into compliance with state and federal law. Pursuing receivership is a last resort when a purveyor demonstrates that it is unable or unwilling to bring the water system into compliance. For more information on the difficulties of receivership, See section 13.2 Recalcitrant purveyors.

8.4 Regional prioritization

Multidisciplinary regional teams. While each individual program uses its criteria to determine the TMF capacity of each water system, programs rely on regional staff assigned to water systems based on geographical locations within regions of DOH. Each water system has an assigned regional team (planner and engineer), responsible for coordinating capacity development across all programs. Regional planners and engineers are consulted for recommendations when third-party technical assistance is available.

For any water system capacity issue, there is a subject matter expert who is assigned based on the subject matter, and the assigned regional engineer and a planner. By combining the program staff and regional professionals, multidisciplinary teams have the necessary specific topical expertise, programmatic tracking, and ongoing relationships necessary for effective effort.

Flexible implementation. Because regions implement most of the technical assistance interventions, they are responsible for prioritizing their activity based on the severity of the public health threat within available shared resources. For example, program staff, regional engineers and planners are expected to adjust their work efforts based on the severity of the

issues before them. They help across the region and office based on direction from the regional manager and their supervisor. This flexibility allows for coordinated responses to the highest priorities in real time while simultaneously respecting long-term program requirements.

8.5 Emergencies

Transformational Plan. In assisting local agencies prior to, during, and recovering from emergency situations, we pursue two Emergency Response and Resilience strategies and one Global and One Health strategy.

- **Priority IV, Strategy 1**: Respond with strength and decisiveness on behalf of Washingtonians and the communities in which they live to minimize impact on people and lives, sustain necessary response capabilities, and advance protections in advance of, during, and in the aftermath of a broad range of public health threats and emergencies.
- **Priority IV, Strategy 6**: Ensure resilience and behavioral health promotion planning and implementation efforts are key components of current and future response activities serving community members, partners, and responders alike.
- **Priority V, Strategy 4**: Advance timely, culturally, and linguistically respectful health information and initiatives, in partnership with health system providers and communities, to support the health and well-being of refugee, immigrant, and migrant communities across Washington.

These strategies encourage us to provide guidance and review emergency response plans that build relationships, help prevent or mitigate harm, respond in a timely manner, and increase the capacity of local emergency responders to communicate with all their customers.

Regional offices take the lead role in emergency response. Headquarters provides support as desired or necessary. We have a position at HQ as a liaison to emergency response organizations, and DOH has an Executive Office of Resiliency and Health Security (EORHS) with the mission to strengthen all-hazards preparedness capabilities and build strategic partnerships to minimize the health impacts the people of Washington experience resulting from major emergencies and disasters.

Programmatic public health advocacy

Drinking water is a public health and safety industry and yet drinking water operators have not been provided sufficient support for their role during emergency conditions. For example, even though they are clearly public health workers and provide an essential service, certified operators have not been identified as essential workers during emergencies. We are committed to accommodating the needs of certified operators to address the public health needs of water system customers.

8.6 Products and reporting

Programs report examples of individual water system successes in ODW's annual report. We report drinking water sampling and compliance assurance and enforcement data to EPA. Programs also report notable events across EPH to maintain greater situational awareness across

all its offices and programs, when relevant. Program implementation results in outcomes that we measure to track progress toward and achievement of statewide drinking water goals (see Chapter 9 Measure program outcomes).

9.0 Measure program outcomes

Each program area is directed to establish performance measures, both for monitoring its own implementation and for monitoring program area outcomes. Measuring program outcomes allows us to evaluate the success of the strategies, resource allocation, and time to achieve the state's public health goals. These measures are not used to evaluate personnel performance. They are used to help us update our program plans and resource allocation decisions using our Plan-Do-Check-Adapt continual improvement strategy. This chapter represents the "Check" element. See section 6.2 Goalsetting for more on how we use these measures to evaluate and update goals.

9.1 Performance management

The state monitors representative measurables to demonstrate progress toward statewide goals through the Office of Financial Management. DOH is also developing an agencywide performance management guidance and reporting system. Within ODW, each program area develops, tracks, and reports progress toward and successful achievement of its goals.

Benchmarking and goalsetting. When new challenges emerge, there is often a lack of reliable data about the nature of the threat. For instance, as the PFAS threat was emerging, we did not know to where and to what degree water sources were contaminated. To make this determination, we engaged in additional testing without having set a goal to meet. We don't set goals until we understand the nature of the problem. Consequently, program areas are authorized to track the scale of a problem through benchmarking. Benchmarking is collecting data to make decisions in the future, as opposed to goalsetting which attempts to change (or preserve) outcomes over time.

9.2 Products and reports

Water quality and violation data transfer. Noncompliance data are stored in and distributed by Sentry NextGen. The data are communicated to EPA via automated data transfer for more common events and by manual transfer for rarer violations. We are currently converting our data system to SDWIS-STATE (see section 10.4 Continual improvement). This is not expected to change significantly once we convert to SDWIS-STATE.

Enforcement Targeting Tool. ODW participates in a quarterly meeting with EPA Region 10 to discuss drinking water system violations based on Enforcement Targeting Tool scores. According to the EPA, this tool "enables the prioritization of public water systems by assigning each violation a 'weight' or number of points based on the assigned threat to public health. For example, a violation of the nitrate maximum contaminant level (MCL) will carry more weight than that of a Consumer Confidence reporting violation. Points for each violation at a water system are summed to provide a total score for that water system."[x] Water systems with a score that exceeds 10 points are considered a priority system for enforcement. We intend to continue to report the circumstances of each priority system during the quarterly meetings.

We intend to direct more resources toward sensing systems that are approaching the trouble zone. One strategy we are pursuing is to strengthen our LHJ partners for improved surveillance of small and private water systems through Foundational Public Health Services.

Outputs. Program outcomes are used to inform implementation through the development of new statewide program goals (Chapter 6) and for the development of policy through the drinking water landscape assessment (Chapter 4). To ease this work, programs will report performance measures and progress toward program-specific statewide goals as we develop a new internal dashboard.

10.0 Critical agency support

None of ODW's work would be possible without the direct and indirect support provided by non-program staff at the office, division, and agency levels. While many of these staff members do not interact with the public, they are essential for improving ODW efficiency and effectiveness. Critical agency support staff members participate, and in many cases lead, our efforts for continual improvement.

10.1 Office support

Admin team. The office is supported by office managers, administrative assistants, and forms and records analysts who organize our documents and processes. They are organized into all levels and all locations of ODW and serve to provide structure to our operations, logistical support, and maintain and disclose state records. Together, they form the Administrative Operations Team that helps make our procedures rational and efficient according to LEAN principles.

Compliance assurance and enforcement. While many, though not all, of our program areas are authorized to integrate a regulatory intervention (see section 7.4 Interventions and preferences), none of the program areas have compliance staff. Instead, we rely on compliance coordinators throughout the state to work directly with program partners on compliance and enforcement. This team of staff make up our compliance assurance and enforcement team to implement the state's compliance strategies. When compliance assurance or enforcement is needed, they are integrated into the multidisciplinary regional team (see section 8.4 Regional prioritization). In this role, the compliance assurance and enforcement team:

- Focuses on consumer protection, the primary reason for the state's program.
- Enforces requirements by making system owners accountable for compliance.
- Provides education to consumers and notification of requirements to system owners, including the consequences of not meeting the requirements.
- Follows through in a consistent, fair, and timely manner with compliance actions that are appropriate for the violation.

Data management. Most programs are responsible for maintaining their own program-specific data. However, the water quality program area collects a vast amount of time-sensitive water quality data. Indeed, this important relationship is reflected on our organization chart in the combined Water Quality and Data Management (WQDM) section.

WQDM manages and implements several SDWA requirements, working directly with staff in each regional office. These include:

- Surface water treatment rule.
- Disinfection and disinfection byproducts rule.
- Lead and copper rule.
- Nitrate.

- Groundwater under direct influence of surface water.
- Drinking water laboratory accreditation (in conjunction with the Department of Ecology).

In addition, WQDM staff enters all bacteriological and chemical sample results into the central data system (Sentry) and supports other sections by providing technical expertise in legislative bill review, compliance strategy and implementation, and national rule review and analysis.

Performance management. Our performance management staff coordinates with other parts of the agency and assists in developing metrics for program evaluation. See section 9.1 Performance management.

Leadership. The management team is responsible for a wide range of executive responsibilities for ODW. These include policy development, public and legislative relations, resource management, goal setting, and issue prioritization. Each program plan is approved by the management team as a grant of authority to the associated teams and staff members to implement their programs. The director also serves as the responsible official under the state environmental policy act when DOH is the lead agency for a drinking water project or nonproject action.

Capacity Development and Policy. The capacity development and policy section supports the office through coordination and implementation of policy development and shared office services.

- **Engineering and Technical Services** (ETS) works with others to drive excellence in the design, operation, and maintenance of drinking water systems to protect public health. In so doing, ETS staff have the following overarching roles:
  - Stay current with regulatory changes and technology.
  - Anticipate and respond to new regulatory and water quality challenges.
  - Build technical capacity in ODW and water system staff.
  - Maintain adaptability, flexibility, resilience, and timeliness in the work we do in service to others.
- **Operator Certification and Training** tracks all manner of services associated with the recruitment, training, and certification of water system operators and monitors contacts between satellite management agencies and their regulated water systems.
  - Water distribution managers.
  - Water treatment plant operators.
  - Cross-connection control specialists.
  - Backflow assembly testers.
- **Policy and Planning** provides a range of subject matter expertise from hydrogeology, well construction, climate change, land use and growth management, state and federal environmental policy, emergency response policy, capacity development, legislative support, contract management, and compliance assurance and enforcement

coordination. It is also the home of the new foundational public health service of ensuring water capacity.

- **State Revolving Fund** manages the rules and makes awards for both state and federal funding programs. The section is responsible for ensuring that state and federal rules are observed and that the awardees have sufficient capacity to use the funding.

10.2 Division support

DOH has several organizational units, one of which is the Division of Environmental Public Health (EPH). ODW is an office within EPH. We receive shared services from the Office of the Assistant Secretary (OAS) and the other offices within the division.

Policy development. OAS's Policy and Rules Team supports EPH's mission to improve people's health by reducing exposures to environmental hazards through legislative action, setting policy goals, and facilitating rulemaking projects.

- **Legislative action** by planning and supporting agency request legislation, analyzing, and responding to proposed bills, and working with legislators and staff to craft meaningful legislation that improves the health of Washingtonians.
- **Setting policy goals**, specifically setting long-term policy goals for the division. The EPH Leadership Team facilitates in-depth discussions with stakeholders and ensures standardized and legal policies aligned with agency policies. They are the lead on complex issues that impacts multiple offices. They consider fiscal and system impacts of policies through economic analysis and evaluation. Most of all they encourage strong partnerships.
- **Facilitating rulemaking projects.** The policy team leads rulemaking activities for the division to align efforts with public health priorities and respond to emerging issues. They ensure compliance with the Administrative Procedure Act,[xi] and work with:
  - SBOH.
  - Agency divisions.
  - Federal agencies.
  - Local jurisdictions.

Environmental justice. EPH provides guidance to ODW on environmental justice issues (see section 12.3 Environmental justice).

Internal partners. We also receive support from other offices in the division. For example:

- **Office of Environmental Public Health Sciences.** OEPHS supports toxicological and science information for associated drinking water policies. Current topics include:
  - **PFAS.** OEPHS provided the toxicologists who developed the state's state action level of several PFAS species (see section 12.1 Emerging contaminants).
  - **Climate change.** The climate and Health section houses subject matter experts on climate-related topics (see section 12.2 Climate change).

- **Office of Environmental Health and Safety.** OEHS supports local government response for some drinking water contamination issues and impact from large on-site septic and associated source water protection issues. We are currently collaborating with subject matter experts on the onsite nonpotable water systems (ONWS) rule to allow private water recycling. ONWS will add resiliency to public water systems, especially as communities grow and the climate changes.

10.3 Department support

ODW also receives support directly from agency-level organization units.

Communications. The Office of Public Affairs and Equity (OPAE), formerly known as the Center for Public Affairs, aka C4PA, leads our agency's strategic initiatives related to communications, health promotion and education, and community relations and equity. They provide agencywide guidance and hands-on support in these areas. For example, this document would not be possible without OPAE's participation.

Budgeting and contracting. The Office of Financial Services (OFS) provides support and guidance acting as a resource to internal and external customers on essential business services. Financial Services supports DOH's mission by providing timely, customer-oriented financial management and business operations for the entire agency. Externally, they partner with other state agencies, local health jurisdictions, nonprofit, and business organizations to ensure quality services are provided to the public.

Human resources. Our recruitment function is operated by the Talent Acquisition Team comprised of consultants, specialists, and process and equity consultants. The Talent Acquisition Team provides support for managers and supervisors seeking to hire vacant positions and support to candidates with timely communications and transparency. The Talent Acquisition Team is also responsible to help DOH become more representative of the statewide population that it serves (see section 13.4 Equity, diversity, and inclusion).

Risk management. The Center for Facilities, Risk and Adjudication (CFRA) provides services to agency internal and external partners and the public by proactively identifying and mitigating risk, ensuring due process and consistent application of the law in adjudicative proceedings, and providing facilities that allow employees to do their best work in clean, safe, and sustainable environments. They provide the adjudication services needed when certain ODW decisions are appealed, and coordinate records requests.

Facilities. Facilities and site management (also part of CFRA) designs and maintains the facilities necessary to operate our office, including physical buildings, individual workspaces, workplace safety, parking and fleet services, supplies and mail, and climate mitigation activities. These physical offices are being evaluated to determine the degree to which they are necessary for our operations. We are anticipating the development of smaller, more local meeting spaces to replace many of our current facilities.

Emergencies. The Executive Office of Resiliency and Health Security (EORHS) pursues excellence in developing systems, processes, and structures that save lives and improve community resilience through improved access to public health and medical services when responding to public health and all hazards emergencies. They confront barriers to these services and advance equity in ways that make our communities more resilient, healthier, safer, and better connected.

10.4 Continual improvement

ODW updates its public health policies based on the evolving environment and landscape assessment. We update our implementation based on each program area's Plan—Do—Check—Adapt continual improvement program. Our critical agency support is also engaged in continual improvement. Because their focus is program efficiency, these improvements are often prioritized as strategic initiatives (see section 6.1 Priorities).

Improved recordkeeping. We have established plans and begun implementation of improvements in both in our databases and file systems:

- **Contracting.** An effort called the "One Washington" program is upgrading our state's contracting and financial management tools.
- **File systems.** We are taking advantage of integrated Microsoft tools—such as SharePoint, OneDrive, and Teams—to facilitate collaborative document development and communications both inside and outside DOH.
- **Electronic filing.** We are currently converting our paper files into electronic format to facilitate document access wherever ODW staff members travel to or reside.
- **Databasing.** We are adopting SDWIS-STATE to facilitate data storage and transfer between public water systems, EPA, and the state.

Greater integration and opportunities to analyze water system data in ways that were not possible in the past.

Hybrid surveys. While the COVID-19 pandemic caused severe disruption in our normal processes, it taught us a great deal about alternative ways to interact with water system operators and leadership.

11.0 Financing

While water is free, legally accessing, pumping, treating, storing, and distributing it is not. While some progress has been made, such as the Bipartisan Infrastructure Law, financial assistance cannot address the needs of systems that are unprepared to use it or to properly maintain and fund unsubsidized improvements. This chapter addresses the challenges of aging infrastructure and affordability, and a tool that will help address these challenges, asset management.

11.1 Aging infrastructure

The nation is experiencing an infrastructure crisis and many small public water systems are insufficiently prepared to meet their challenge. *Washington's Drinking Water Strategy* is designed to help water systems prepare. In many ways, managing the aging infrastructure of public water systems is at the center of many of the issues the strategy addresses. When water systems address their aging infrastructure, they should address these additional challenges and use the tools available to them.

Challenges. Aging infrastructure is exacerbated by:

- **Affordability**. Because many small water systems have not saved for their coming infrastructure costs, customers may not support, or be capable of paying, the higher costs that will arrive when the bill comes due. See section 11.2 Affordability.
- **Emerging contaminants**. Increased obligations to protect public health, both from newly identified threats (like PFAS) and historical threats with increased concern (such as lead) represent additional demands on drinking water systems. See section 12.1 contaminants.
- **Climate change**. Water systems that worked in the past are not guaranteed to work in the future in their current configuration. Creating resiliency for climate impacts often requires additional design, regulatory, and system costs. See section 12.2 Climate change.
- **Environmental injustice**. Some water systems have degraded to the point of failure due to long term neglect by institutions that failed to value the communities they serve. Washington must never have failures such as those experienced by the people of Newark, Flint, and Jackson. See section 12.3 Environmental justice.
- **Workforce depletion**. with fewer people to maintain the systems, infrastructure degradation may accelerate. See section 13.1 Workforce depletion.

Tools. Developed to prepare us for this moment, such as:

- **Asset management.** With a fully developed and supported asset management program, purveyors can achieve the lowest reasonable cost for their service and be eligible for low-cost infrastructure financing. See section 11.3 Asset management.
- **Peer networks.** Shared local expertise and services, including WAWARN, reduce the cost of system maintenance and emergency response. See section 13.3 Peer networks.

- **Equity, diversity, and inclusion.** Historically, the drinking water industry has not drawn its employees from all populations—improving hiring practices and providing support for inclusion of everyone in water system operations and decision making can partially overcome recent workforce depletion issues. See section 13.4 Equity, diversity, and inclusion.
- **Consumer engagement.** As consumer engagement increases, we anticipate greater collaboration between public water systems and the people who benefit directly from fully funded service. See section 13.5 Consumer engagement.

Recalcitrant purveyors. Ultimately, if the challenges prove too great despite the availability of these tools, some purveyors may become recalcitrant and put their consumers at unacceptable risk. See section 13.2 Recalcitrant purveyors.

11.2 Affordability

As the time for rehabilitating aging infrastructure arrives, we are engaged in a greater effort to provide guidance to water systems in their efforts to maintain affordability. Beyond that, though, is the effort to ensure that water is delivered equitably, including affordability on the individual customer level, and to extend safe, reliable drinking water to communities that have not historically received it.

Community Affordability. In 1984, the EPA defined community affordability and determined that rates would be considered unaffordable when raised to be more than 1.5 percent of the median household income (MHI). EPA defined the standard to help ease the burden on small and low-income communities when complying with regulatory standards. In Washington State, the Auditor's Office recommends that state agencies should use 2.5 percent of MHI as an indicator of affordability.

States have been using this definition for decades to set thresholds for determining financial capability when allocating loans through the State Revolving Fund. However, it seems clear that it cannot be the only tool we use because it inadequately provides relief in communities where substantial and widespread hardships are located. It fails to take into consideration the cost of living, household burden, or even overall utility burden. It also fails to capture impacts across highly diverse communities.

Customer Affordability. While many water systems use the 1.5 percent of MHI metric to evaluate their customers' ability to pay, it fails to address the severity of the impacts on customers who are unable to pay. We should consider multiple metrics to evaluate water systems' customer affordability. Metrics that can be considered include rates for poverty, housing, unemployment, participation in state/local programs, and average hourly wages.

In our work, we can help reframe the definitions and practices of both the community and customer affordability metrics will help address health inequities by making safe drinking water more accessible to the most financially impacted by paying for this resource. We will also

continue to develop new tools for water systems to bolster their financial capacity while supporting programs that help ensure universal access to safe, reliable drinking water, like the Low-Income Household Water Assistance Program.

Inadequate water supplies. Some areas of the state lack adequate water supplies that could be remedied by the extension of existing public water systems. However, such extensions can be expensive and failing water supplies remain marginal. Consequently, water systems are eligible for DWSRF loans and state consolidation and system rehabilitation funding to reduce the cost of connecting existing structures to safer, more reliable systems.

11.3 Asset management

Definition. Asset management is creating a plan to maintain or replace system assets (such as pumps, pipes, etc.) at the most optimal time and cost to maintain the accepted level of service for each public water system. Water systems that take care of their assets are more likely to ensure safe and reliable drinking water for their customers. We encourage water systems to recognize that achieving the lowest life cycle cost is the most appropriate strategy for rehabilitating, repairing, or replacing an asset. Asset management is implemented through an asset management program. This consists of a written asset management plan that is continually updated and the carrying out of that plan.

Approaches. We adopted four approaches to encouraging and assisting public water systems in adopting asset management: periodic, opportunistic, emergent, and universal.

- **Periodic.** The periodic approach addresses systems with 1,000 or more service connections, which are required to periodically update their water system plans. This approach includes passive interventions, group technical assistance, and individual technical assistance (see the interventions subsection, below).
- **Opportunistic.** The opportunistic approach applies to all other Group A water systems when they are either expanding or seeking funding through DWSRF. These include individual technical assistance and financial assistance
- **Emergent.** The emergent approach applies to significant noncompliers and other water systems experiencing problems related to system capacity and asset management is employed as a part of returning to compliance or resolving their capacity limitations. This approach includes opportunities for individual technical assistance and compliance assurance.
- **Universal.** The universal approach applies to all water system personnel by making sure that we provide opportunities to gain training on asset management topics through technical assistance and passive interventions.

We will update the capacity development program to establish asset management goals. We will evaluate the planning program to determine the appropriate level of service to achieve those goals.

Encouragement and assistance. ODW and its partners engage in a wide variety of asset management activities. These activities fall into two modes:

- **Encouraging** public water systems to develop asset management program, consisting of any intervention that increases the likelihood that a water system will engage in asset management.
- **Assisting** public water systems in developing asset management plans, consisting of any intervention that increases the likelihood that the resulting effort will improve system TMF capacity.

Through these initiatives, we encourage public water systems to develop asset management programs, and we provide technical and financial assistance when they've made the decision to do so. Consequently, our current program satisfies the American's Water Infrastructure Act's (AWIA) capacity development requirements.

Interventions. ODW and its partners engage all intervention types in pursuit of greater use and expertise of asset management for all Group A water systems.

- **Passive.** Publications that encourage and assist in asset management and peers who encourage asset management.
- **Collaborative.** Requirement to include asset management in all Group A planning documents. Preventing system expansion without asset management in the system's water system plan.
- **Technical assistance.** Group technical assistance through staff appearances at conferences and webinars. Focused technical assistance through third-party technical assistance providers. Individualized and coordinated technical assistance through our water system planning program.
- **Financial assistance.** Funding asset management program development through the DWSRF program. Providing competitive ranking points to systems with an asset inventory.
- **Regulatory.** Comprehensive compliance documents.

See Table 8 for examples of encouragement and assistance interventions provided by ODW and its partners.

The water system planning program incorporates all aspects of asset management into a required comprehensive planning document for all Group A public water systems.

Water system plan. Water systems that are required to have an approved WSP under WAC 246-290-100(2), but haven't received approval, may be denied review and approval of project reports and construction documents under WAC 246-290-110(3) and WAC 246-290-120(3). Without an approved WSP containing an asset management program water systems are not allowed to expand.

Table 8: Asset management encouragement and assistance by intervention type

Intervention Type	Intervention	Assist or Encourage	Examples
Passive	Publications	Assist	*Water System Planning Guidebook* 331-068; Small Water System Management Program Guidebooks 331-134 and 331-474; *Drinking Water State Revolving Fund Program Construction Loan Guidelines 331-196*; Rural Community Assistance Corporation (RCAC) *Asset Inventory Worksheet.*
		Encourage	*Asset Management for Small Water Systems* 331-445.
	Peer Networks	Encourage	Regional water system associations, environmental finance centers (EFC), AWWA, RCAC, ERWoW, and local health jurisdictions have engaged in encouragement activities.
Collaborative	Data management	n/a	We do not currently collect or distribute information on water systems' use of asset management.
	Policy development	Encourage	Planning documents are required for all Group A systems.
Technical Assistance	Group technical assistance	Assist	EFC, ODW presentations at conferences and webinars, Third-party webinars.
		Encourage	Asset management courses offer continuing education units to operators.
	Focused technical assistance	Assist	Set-aside funded technical assistance.
	Coordinated technical assistance	Encourage	Infrastructure Assistance Coordinating Committee (IACC) tech teams, SYNC funding program coordination.
	Individualized technical assistance	Assist	ODW review of WSP and SWSMP, set aside- and EPA-funded circuit riders.
Financial Assistance	Loans	Assist	Funding for program development may be included in both preconstruction and construction loans.
		Encourage	DWSRF provides bonus points for a completed asset inventory or for attending an asset management training.
	Grants	Assist	Community development block grants may be used for asset management planning.
Regulatory	Compliance Assurance	Encourage	No project construction without departmental approval of planning document, which includes asset inventory.
	Enforcement	Encourage	May be required to create planning documents, including asset inventory, to return to compliance.

Small water system management program. All noncommunity systems and community systems not required to complete a water system plan under WAC 246-290-100(2) are required to develop and implement a small water system management program under WAC 246-290-105(2). The SWSMP requires a component inventory and assessment, list of planned improvements, and a budget.

Drinking Water State Revolving Fund. The DWSRF program requires that all public water systems have an approved WSP or SWSMP that includes aspects of asset management, including a balanced budget, list of planned improvements, and a plan for funding those improvements.

We use set-asides to fund a technical assistance contract with RCAC. Together we provide direct assistance for creating asset management programs for individual systems as well as frequent trainings around the state. Set-asides are also used to fund technical assistance with Commerce's Small Communities Initiative, jointly funded by Commerce, Ecology, and Health. ERWoW also provides training and technical assistance within the state using various funding mechanisms.

We currently provide funding for asset management program development as part of DWSRF preconstruction and construction loans when part of a larger infrastructure improvement project, such as:

- Developing an asset inventory that includes identification of major assets, age, expected life, replacement cost, and criticality.
- Mapping asset locations.
- Purchasing asset management software.

The share of funding received by the state is determined by the quadrennial Drinking Water Infrastructure Needs Survey and Assessment (DWINSA). Because the planning program integrates asset management, each WSP and SWSMP includes a significant amount of the data necessary for water systems to respond to EPA's survey. Having a rigorous program enhances the state's ability to direct funds toward needed infrastructure projects.

Compliance assurance. As part of a comprehensive enforcement document, a water system may be required to engage in asset management within the water system planning program to be eligible for the DWSRF funding necessary to perform the upgrade.

The Five Questions. Asset management is integrated as a part of the water system planning program area through water system plans and small water system management programs. Because they are all required to develop and implement either a WSP or a SWSMP, all Group A systems are required to engage in asset management.

Question 1—Current state of assets. Documentation of Group A water system assets and their deficiencies is integrated into the water system planning program either through WAC 246-290-100(4)(e)(iii) and (iv) or WAC 246-290-105(4)(n). We provide RCAC's "asset inventory worksheet"

that allows a water system to document its full asset inventory and address the condition each asset. There is also an alternate asset inventory and condition document supplied with the SWSMP template.

Question 2—Sustainable level of service. Group A water systems must document their sustainable level of service through several mechanisms integrated into their water system planning document, including:

- Minimum design standards in WAC 246-290-100 (4)(e)(i).
- Water right self-assessment in WAC 246-290-100 (4)(f)(iv).
- Affordability of rates in WAC 246-290-100 (4)(j)(iv)(A).
- Standard construction specifications for distribution mains and distribution-related projects in WAC 246-290-100(5).
- Service reliability standards in WAC 246-290-420(5).
- WUE goals in WAC 246-290-830.

Question 3—Critical assets. The asset inventory worksheet provides method to calculate the effect of component criticality. We advise water systems to recognize that some asset failures may cause an inconvenience to customers via reduced service, outages, or minor taste or odor complaints, while other failures may cause the water system to shut down completely.

Question 4—Minimum lifecycle costs. We are in the beginning stages of implementing value planning. We advise systems to consider both the capital and operational costs for its assets and provide the maintenance the asset needs to minimize its lifecycle cost. It's also a focus of the Sync group that publishes the Introductory Guide to Value Planning.[xii]

Question 5—Long-term funding strategy. Both water system plans and SWSMPs require multiyear operating budgets. Small water systems are required to supply a budget under WAC 246-290-105 (4)(t). We provide a six-year operational and capital budget template. A WSP's financial program under WAC 246-290-100 (4)(j) must provide:

- Summary of past income and expenses.
- Balanced operation budget for the plan approval period (typically ten years).
- Plan for collecting the revenue necessary to maintain cash flow stability and to fund the capital improvement program and emergency improvements.
- Assessment of water rate affordability.

Additionally, all Group A systems that charge customers are required to evaluate the feasibility of adopting and implementing a rate structure that encourages water demand efficiency.

RCAC asset inventory worksheet. The RCAC asset inventory worksheet calculates the level of funding support required to maintain and replace system components. With a level of detail required based on the immediate purposes of the water system, these documents also address operational reserve, emergency reserve, capital facilities, and debt service reserve. The asset inventory may be used as part of a water system's planning document.

Asset management required. We may require changes be made to a SWSMP if necessary to effectively accomplish the program's purpose under WAC 246-290-105(5). We may also decline to approve a WSP under WAC 246-290-100 that does not satisfy these requirements.

Barriers. With over 17,000 public water systems in the state, we lack the information and funding necessary to address all capacity development issues at all locations throughout the state. The kinds of challenges we see are:

- While asset management concepts are integrated into the planning and operational elements of all 4,100+ Group A water systems, we review only a small proportion of the planning documents.
- The WAC doesn't not explicitly require asset management. It is implemented in part through guidance.
- There is a significant cost burden with dubious value for Group B and Group A-TNC systems.
- Small community systems are not sending their plans to us for review because the review is not considered a good use of system funding.
- Lack of operator and staff continuity makes it more difficult to keep the asset management program up to date. Many small systems are lacking computers and software or the confidence to commit to making important capital decisions based on their program.
- In many systems, there is also significant lack of awareness of asset locations and condition, even as-built.

See section B.2 Input for stakeholder input on barriers to capacity development in general and specifically asset management.

Weaknesses. Our current asset management implementation gives short shrift to the role of policymakers setting the water system's TMF level of service. Increasing effort on defining the "public trustee" role filled by water system officials could be used to combat the "rate-setter-in-chief" focus. This would redirect their attention toward clarifying the fuzzy or unstated level of service issues. More generally, asset management does not adequately address environmental justice and equity issues within and across water systems. Systems should use specific, measurable criteria to evaluate level of service and rate structures to support local and regional equity and environmental justice issues. We do not expect water systems to discover how to do this on their own, however. Appropriate interventions to assist them in these topics would be beneficial elements of the capacity development program.

Future. A range of potential objectives could have the effect of strengthening asset management implementation.

- **Capacity development assessment.** In the past we have conducted stand-alone surveys that measured indicators related to water system capacity. We offered the chance at a

free sanitary survey to systems between 100 and 999 connections as an incentive. Recent anecdotal evidence indicates that water systems are experiencing survey fatigue.

- **SWSMP.** The two small water system management program guides could benefit from explicit references to, and steps for, asset management.
- **Financial policies.** A guide or performance standard could be adopted for those water systems that have not created their own fiscal policies. For example, we could create a cash reserves worksheet using the principles of AWWA's Cash Reserve Policy Guidelines[xiii] as a potential baseline.
- **Measurables.** We use measurables to guide the development of our programs. Asset management should be integrated into each program area, as appropriate. For example, in the water use efficiency program area, high distribution system leakage could be used as an indicator for poor pipe or meter condition, leading to the requirement to develop and implement a water loss control action plan with an asset management component.
- **Internal.** We do not currently monitor which water systems have integrated asset management into their policy development and operations. We may consider tracking that information to assist us in assigning resources to statewide water system capacity development needs.

ODW (and the DWSRF program area in particular) encourages systems to develop and maintain an asset management program to help systems financially plan for operation, maintenance, repair, and replacement of assets. We require an O&M program that works within an asset management program framework, enabling water systems to invest the right amount of money to provide the chosen level of service at the lowest life-cycle cost. We urge water system management to understand that O&M staff input is essential to identifying and prioritizing O&M and capital improvement program projects, including spending decisions based on asset management principles. Because it helps system leaders make risk-based decisions by choosing the right project at the right time for the right reason, asset management implementation is a critical part of Washington's drinking water strategy.

12.0 Environment

It is said that while Ecology protects the environment from people, DOH's Division of Environmental Public Health protects people from the environment. We are partners to help each other achieve our respective missions.

We recognize that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.[xiv] Consequently, we have a continuing responsibility to use all practicable means to:[xv]

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Assure for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our national heritage.
- Maintain, wherever possible, an environment which supports diversity and variety of individual choice.
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities.
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

In this chapter, we discuss ways in which we intend to change how we interact with the environment, including contaminants of emerging concern, climate change, and achieving environmental justice.

12.1 Emerging contaminants

Emerging contaminants are a new category of water quality concerns for which evidence of health effects has either not yet been established due in part to the trace levels at which these compounds are currently being detected, or their occurrence in drinking water has not yet been confirmed.

Broader mandate. SBOH and local health departments in large counties may set water quality standards that exceed federal requirements.

RCW 70A.130.010 provides additional SBOH authority for setting drinking water standards for chemical contaminants. "(1) In order to protect public health from chemical contaminants in drinking water, the state board of health shall conduct public hearings and, where technical data allow, establish by rule standards for allowable concentrations. For purposes of this chapter, the words 'chemical contaminants' are limited to synthetic organic chemical contaminants and to any other contaminants which in the opinion of the board constitute a threat to public health. If

adequate data to support setting of a standard is available, the state board of health shall adopt by rule a maximum contaminant level for water provided to consumers' taps. Standards set for contaminants known to be toxic shall consider both short-term and chronic toxicity. Standards set for contaminants known to be carcinogenic shall be consistent with risk levels established by the state board of health. (2) The board shall consider the best available scientific information in establishing the standards. The board may review and revise the standards. State and local standards for chemical contaminants may be stricter than the federal standards."

SBOH used this authority to adopt rules for setting state action levels and state MCL in January 2022 in response to per- and polyfluoroalkyl substances (PFAS) found in some Washington water systems. The new requirements set criteria DOH follows when considering standards for contaminants that do not have a federal rule.

12.2 Climate change

The Washington State Legislature finds that "climate change is one of the greatest challenges facing our state and the world today, an existential crisis with major negative impacts on environmental and human health."[xvi] Our scientific understanding of the effect of climate change on Washington is that we should expect:

- Declining snowpack and loss of natural water storage.
- Changes in seasonal streamflow.
- Higher drought risk and more competition for scarce water resources.
- More severe winter flooding.
- Declining water quality.

These effects will have an impact on water supplies across the state, but those effects will be very different from one system to another.

Transformational Plan. DOH's Transformational Plan establishes two Environmental Health strategies implemented by ODW. They are:

- **Priority III, Strategy 3**: Incorporate data-driven approaches and community engagement strategies, assets, and strengths, into public health and response planning efforts aimed at building resilience against the health and social impacts of climate change and other environmental challenges.
- **Priority III, Strategy 5**: Support initiatives that promote safe and active living, commuting, and recreation, reduce greenhouse gas emissions, and increase community cohesion.

When setting statewide and individual program goals, ODW will consider strategies to help water systems become more resilient to climate risks, increase consumer engagement, and increase both water use efficiency and energy efficiency.

Statewide strategies. We will evaluate our programs to jointly implement statewide strategies.[xvii]

- Management of water resources in a changing climate by implementing Integrated Water Resources Management approaches in highly vulnerable basins.
- Improve water supply and water quality in basins most likely to be affected by changing climate.
- Implement water conservation and efficiency programs to reduce the amount of water needed for irrigation, municipal, and industrial users and to improve basin-wide water supply.
- Build the capacity of state, tribal, and local governments; watershed and regional groups; water managers; and communities to identify and assess risks and vulnerabilities to climate change impacts on water supplies and water quality.

We also grow and maintain partnerships with organizations such as the University of Washington's Climate Impacts Group and Commerce's Growth Management Services. We are taking advantage of the breadth of Washington's climate expertise to consider additional enhancements to our climate strategies such as adding a climate element to water system planning efforts and providing sub-regional guidance based on high resolution climate impacts assessments.

Climate mitigation. According to the U.S. Energy Information Administration, Washington State generates more electricity from hydropower than any other state and accounted for 27 percent of the nation's total utility-scale hydroelectric generation in 2020.[xviii] Because only 3.2 percent of the net electricity generation in the state contributes to net greenhouse gas emissions, the most direct mitigation available to water systems is increased water use efficiency, support for water reuse technologies, and replacement of potable water sources by recycled water for nonpotable uses. Reductions in distribution system leakage, low flow water fixtures, reduced landscaping potable water demand, and wise water use by the system's customers reduces power demand in the system.

Table 9: Net power sources for Washington

Power source	GWh	Mix Percentage
Hydroelectric	7,320	76.9%
Nonhydroelectric renewables	1,045	11.0%
Nuclear	848	9.0%
Natural gas-fired	308	3.2%
Coal-fired	0	0.0%
TOTAL	9,521	100.0%

One Water. Washington is responding to anticipated increased user demand and decreased source capacity by embracing proven technologies such as onsite nonpotable water systems (ONWS) and reclaimed water. Using recycled and reused waters for nonpotable uses can increase the resilience of water systems by reserving potable water for uses that require potable water. We have been a partner in developing ONWS public health regulations. Our planning

program is responsible for ensuring that WSPs acknowledge the opportunities for reclaimed water use in their communities. We support these initiatives.

Climate and Health Section. DOH maintains the Climate and Health Section within EPH. ODW has a history of collaboration with the predecessor of this newly organized section. The Climate and Health Section serves as a resource for programs at DOH and other planning and health partners, with a focus on increasing health equity through carbon reduction and climate adaptation. The section supports public health system readiness and response to today's climate-sensitive hazards, and advances climate adaptive strategies that will shape healthier, more just communities in the future. Staff work to prevent harms from wildfire smoke events, extreme temperatures, vectors of public health importance, harmful algal blooms, and weather-driven disruptions to critical services, among other climate-sensitive health issues. The team also works at a systems-level to strengthen partnerships, advance climate justice principles and community-based practices.

Reduce, Reuse, Recycle

Communities become more resilient when the water they take from the environment is used multiple times before returning it:

- **Reduce.** Water use efficiency helps limited water supplies go further by reducing distribution system leakage and per capita demand.
- **Reuse.** Customer retention of used water for water reuse technologies such as onsite nonpotable water systems (ONWS) reduce potable water demand by treating water for nonpotable purposes, such as clothes washing and toilet flushing.
- **Recycle.** Community treatment of wastewater can be returned for nonpotable uses, especially landscape irrigation.

Operations. We engage in activities associated with water system emergencies related to expected climate change effects. ODW's Capacity Development and Planning and OEPHS' Climate and Health coordinate with ODW's regional offices to provide:

- Daily wildfire reports.
- Technical assistance for surface water systems with watershed wildfire damage.
- Investigations of toxic cyanobacteria blooms near surface water intakes.
- Emergency funding for drought-related disruptions.

Climate resilience planning. Across DOH, we work with partners to respond to and reduce the effects of climate change on people's health. Acting today helps protect our children and future generations from the effects of climate change. All water systems are required to plan for emergency situations. This includes addressing an all-hazards approach that coordinates with regional urban planning under our Growth Management Act.

Environmental justice. In the Climate Commitment Act, the legislature also found that while climate change is a global problem, some communities have disproportionate impacts of environmental burdens. These communities bear disproportionate negative impacts of climate change. For more on the environmental justice aspects of climate change, see section 12.3 Environmental justice.

12.3 Environmental justice

Environmental justice means the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income in the development, implementation, and enforcement of environmental laws, regulations, and policies. It recognizes that there are communities that are under-resourced, marginalized, and oppressed across Washington that are disproportionately affected. We will achieve justice when everyone enjoys the same degree of protection from environmental and health hazards, access to the decision-making process, and benefits of a healthy environment in which to live, learn, and work.

Both state and national studies have found that people of color and low-income people continue to be disproportionately exposed to environmental harms and denied access to environmental goods, such as access to safe drinking water, in their communities. As a result, there is a higher risk of adverse health outcomes for those communities. This risk is amplified when overlaid with preexisting social and economic barriers and environmental risks and creates cumulative environmental health impacts.

Environmental justice is intended to develop, implement, and enforce environmental and public health laws so every person can live in a healthy and safe environment regardless of race, color, national origin, or income.

We strive, at a minimum, to achieve equal access to safe, reliable drinking water across this state. But even if we were to achieve that, equal access to water is not necessarily equitable and we're learning how that applies to and influences our work. We have a compelling interest in preventing and addressing such environmental health disparities in the administration of ongoing and new environmental programs. This includes allocation of funds and administering these programs to remedy the effects of past disparate treatment of overburdened communities and vulnerable populations. ODW is committed to the equitable access to safe and reliable drinking water to all people of Washington.

Transformational Plan. With our focus on environmental justice, we pursue two Environmental Health and one Emergency Response and Resilience strategies:

- **Priority III, Strategy 2**: Ensure our policies, planning, and programming incorporate environmental justice principles with the goal of reducing health inequities and promoting community well-being.
- **Priority III, Strategy 4**: Ensure communities likely to bear the worst climate-related and environmental health impacts have resources and support to foster resilient communities that promote true health and well-being.
- **Priority IV, Strategy 4**: Seek flexible and sustainable funding opportunities to invest in activities that support robust response activities, workforce, tools, and the communities we serve and that allow for scarce resources to be equitably allocated.

These strategies encourage us to pursue environmental justice, adopt approaches that address resiliency in the communities most at risk, and equitably allocate resources.

Environmental justice responsibility. The responsibility to pursue environmental justice comes from many sources, including:

- Healthy Environment for All (HEAL) Act.[xix]
- Title VI of the Civil Rights Act of 1964.[xx]
- Executive Order 13166: Improving Access to Services for Persons with Limited English Proficiency.[xxi]
- Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.[xxii]
- DOH policies for health equity.

Emergencies. As a matter of human dignity, everyone should be informed of emergency notifications in a way they can understand. We intend that everyone who may be in harm's way in an emergency is informed of their peril and informed of appropriate actions they should take to protect themselves and their families. Consequently, ensure that water systems provide life safety information for all population segments constituting five percent or 1,000 people in the emergency area, whichever is less. As an immediate step to assist public water systems in making their required public notifications, we are currently translating public notifications into the top five non-English languages spoken in Washington: Spanish, Russian, Vietnamese, Ukrainian, and Tagalog. ODW is developing operational goals to improve language access to all publications for the public with a current focus on translations of public notification templates.

13.0 People

The greatest asset any public water system or governmental agencies has in supporting safe and reliable drinking water is the people. From operators to partners, our success relies on diverse and capable people to find solutions to small and large issues. Together we support the health of the people of Washington.

13.1 Workforce depletion

ODW has participated in drinking water operator-related conferences in Washington and nationally in which upcoming retirements was the most concerning issue. At each conference, up to 50 percent of the operators were eligible to retire within five years.

Transformational plan. In our partnerships to attract historically excluded communities to service in the drinking water industry, we pursue two strategies, one each from Health Systems and Workforce Transformation and Emergency Response and Resilience:

- **Priority II, Strategy 3**: Champion the recruitment, development, and retention of a strong, capable, and diverse and inclusive state, local, and Tribal public health workforce and further policies and efforts that support, invest in, and diversify our health system workforce.
- **Priority IV, Strategy 3**: Recruit, develop, train, and retain a robust and capable workforce prepared to respond in an emergency and institute planning initiatives to support response personnel in disaster response and recovery efforts integrating models of excellence and infrastructure advancements from a broad range of emergencies including the COVID-19 pandemic.

These strategies encourage us to expand our efforts to recruit a workforce that mirrors the state's population and bolster programs that help water systems look like the communities they serve.

Service fields. The drinking water industry depends on a multitude of skills for its success.

- **Certified operators** to keep the systems operating safely and reliably.
- **Construction workers** for building the infrastructure.
- **Administration** including managers, clerical, and financial workers.
- **Professional and technical** including engineers, planners, researchers, and technicians.
- **Technical assistance and regulatory** including sanitarians, and members of all the other above groups.

ERWoW apprenticeship program. ERWoW has three apprenticeship programs: Water Distribution Manager, Water Treatment Plant Operator, and Wastewater Treatment Plant Operator. This exciting venture is in response to the growing demand for skilled operators as more and more operators are reaching retirement age. Both the water and wastewater programs are two years long. Applications can be submitted year-round, and each fall a new

training cohort begins. The curriculum is designed to enhance and prepare the apprentice to be fully qualified in multiple aspects of water and wastewater operations. There is a total of 288 formal training hours for each program.

13.2 Recalcitrant purveyors

Many small water systems are operating on the edge of acceptability, vulnerable to disruptions that would pull them out of compliance (see section 7.3 Water system capacity and risk). When these systems become substandard, we can typically put them on a path to return to compliance provided that the purveyors are willing and able to do so. Occasionally, however, the purveyor is unable or unwilling to take the necessary action.

As documented in this strategy, there are significant threats to water systems over the next decade, including aging infrastructure, affordability, emerging contaminants, climate change, and workforce depletion. For too many of them, a purveyor's lack of managerial and financial capacity may simply be too much for them to overcome these mounting challenges. This produces yet another threat: an anticipated increase in the number of recalcitrant purveyors in the next decade.

A purveyor is considered recalcitrant when they are unwilling or unable to perform the actions necessary to bring a water system back into compliance. When they are willing but unable, receivership for owners and certification suspension for operators are appropriate strategies. Additionally, when a purveyor is able but unwilling to perform the necessary actions, the full range of enforcement activities including decertification and civil and criminal penalties is appropriate.

Consolidation. Some purveyors may simply wish to get out of the water business. For them, we have funds to help consolidate small water systems that can no longer be operated separately (see section 5.4 Funding). Consolidation is a preferred solution for many long-term water system challenges because of the strong economies of scale achieved in the drinking water industry and the increased TMF capacity that comes with large numbers of users sharing professional management costs.

Receivership. In the worst-case scenarios, we consider petitioning the court to send the water system into receivership. Receivership is a fraught process; typically, there aren't many, if any, organizations that will voluntarily take on the obligations of a failing system. While there is an expectation that SMAs, which are specifically protected to take on failing systems,[xxiii] is not always feasible. Significant water system expertise is housed within ODW, but we cannot serve because we'd be regulating ourselves and the water system would no longer be eligible for federal funding. As a result, counties, which serve as the receiver of last resort, are assigned a responsibility they are not well prepared to satisfy. Policy discussions at the highest level, including the state legislature, are underway over how to secure the most appropriate receivers in all places across the state. It's a high priority for ODW to find a solution that serves the needs of the consumers and existing state and local agencies.

13.3 Peer networks

Transformational Plan. In facilitating water system peer networking, helping them look beyond their own subject area and geographical borders, we pursue a Global and One Health strategy of DOH's Transformational Plan.

- **Priority V, Strategy 1**: Incorporate best practices from beyond borders to advance the health and well-being of Washingtonians and the communities in which they live. Use bidirectional pathways to advance partnerships, key planning strategies, and communication efforts.

This strategy encourages us to seek partners outside of Washington's boundaries to learn more about the solutions employed elsewhere and to teach what we've learned here. Additionally, we are encouraged to facilitate the development of peer networks to develop and implement best practices and shared services.

Shared services. There are many ways in which water systems can share services with each other to achieve economies of scale short of full system consolidations. For example, an SMA is an example of shared administrative and operational services. Systems can work together on regional projects such as groundwater modeling, such as in the Upper Yakima and Spokane valleys. The Coordination Act and its associated planning activities can share the expense of regional coordination to address growth pressure, resource development, and climate resiliency. Water associations can help share advocacy costs, provide professional networking, and share best practices. And the WAWARN can be used to share the cost of equipment. We continue to encourage water systems to find ways to share services to reduce costs.

Avenues for network building. Examples of areas where greater peer networking can be implemented include:

- **Foundational public health services.** Health has recently been funded to provide additional guidance, rulemaking, and group and individualized technical assistance to help LHJs develop model water programs, and to develop best practices for water resources planning.
- **Growth management** planning includes state and local partnerships to best manage water supply. Approvals for land use planning, water adequacy and availability differ throughout the state. Health's goal is to understand and support consistent actions related to all activities within the growth management activities.
- **Local agencies**, including LHJ, county agencies, and local organizations, work within their communities and cultures to bring trust and connection to Health's work. There is much to learn through community engagement, beginning with local existing service organizations.

13.4 Equity, diversity, and inclusion

Acknowledgement of environmental injustices. Washington's Environmental Justice Task Force notes in its report that governing structures of the U.S. were designed to elevate the rights and access to its resources of some people at the expense of the rights and access of others. The process of settler colonialism that led to the permanent settlements of one society by displacing Indigenous populations who "already derived economic vitality, cultural flourishing, and political self-determination from the relationships they established with the plants, animals, physical entities, and ecosystems" is likely one of the largest legacies of environmental injustice in the Pacific Northwest. These governing structures, rooted in settler colonialism and white supremacy, led to the systemic inequity to which the environmental justice movement responds. They have been reaffirmed across history, often in response to efforts to move toward more equitable laws and practices and are widely maintained today.

Equitable community engagement can act to disrupt these inequitable governing structures and systems by democratizing decision-making processes. The foundation of meaningful community engagement must be an evaluation of who is negatively impacted and who is benefitted by any agency decisions meant to benefit the public. Environmental injustices across the state have, after all, been created by decision-makers who perpetually dismissed and allowed for the placement of pollution within certain communities, such as those who live along and fish contaminated waters, or the concentration of landfills in low-income and black, indigenous, and people of color communities, or the contamination of water and soil of farm working communities (see sections 13.5 Consumer engagement and 12.3 Environmental justice).

Departmental statement on racism. We are committed to change a system that has historically disfranchised communities. We believe that accountability and change start with each one of us. Racism is a public health crisis. It is the driving force behind social determinants of health, a barrier to attaining health equity, and is reinforced throughout our healthcare systems in explicit and implicit ways. Often, this results in lower standards of care for people of color and reduced and inadequate care and resources for other minorities and historically underserved communities.

Policy approach. Increasing EDI is relevant to everything we do every day. State employees are instructed to detect, share, collaborate on, and implement EDI strategies both within our organization and across our programs.

In 2021, Washington State passed the Healthy Environment for All (HEAL) Act. The goal of the HEAL Act is to reduce environmental and health disparities across the state. The HEAL act requires DOH and other covered agencies to prioritize vulnerable populations and overburdened communities by integrating environmental justice into several activities. These activities include strategic plans, community engagement plans, decision processes for budget development, expenditures, and granting or withholding benefits.

Additionally, the HEAL Act defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies. Environmental justice includes addressing disproportionate environmental health impacts in all laws, rules, and policies with environmental impacts by prioritizing vulnerable populations and overburdened communities, the equitable distribution of resources and benefits, and eliminating harm."

People who experience public health disparities include:

- Infants, children, youth, and older adults.
- Individuals with disabilities.
- Individuals with no high school diploma.
- People who are underemployed or unemployed.
- Previously or currently incarcerated or detained individuals.
- Individuals in the lesbian, gay, bi, trans, queer, and others community.
- Rural, remote, and frontier communities compared to urban areas, city centers, and areas with high population density.
- Individuals or families experiencing housing insecurity due to cost of living, unsafe/unhealthy housing, homelessness (chronic, transitional, episodic), or family instability (youth in foster care system, individuals/families in domestic violence shelters).
- Individuals with limited English proficiency.
- Veterans or people in the military.
- Immigrants and refugees.
- People and communities of color.
- Religious minorities.
- People with low income.
- Women.

Effect of policy decisions. We know that for any policy implementation, the impact may be to reduce health disparities, increase health disparities, or have no effect. Certainly, any outcome that increases health disparities is to be prevented. Additionally, it is insufficient merely to have no impact on health by carrying on the policies of the past that created the health disparities in the first place. Conversely, we want to provide for superior outcomes for public water system consumers experiencing public health disparities because environmental harms do not occur in isolation.

Table 10: Equity evaluation of potential health impacts

Policy's public health impact	Equity evaluation
Increases health disparities	**Unacceptable** policy direction, as it would increase harm on under-resourced, marginalized, and oppressed communities.
Maintains health disparities	**Discouraged** policy direction, as it may perpetuate harm on under-resourced, marginalized, and oppressed communities.
Decreases health disparities	**Preferred** policy direction, as it pursues more equitable outcomes for under-resourced, marginalized, and oppressed communities.

Failing infrastructure has a greater impact on people who are already suffering from environmental injustices.

Comments on 2022 Environmental Justice Strategy and Implementation Plan. As an example of our commitment, we addressed U.S. Department of Health and Human Services (HHS) 2022 Environmental Justice Strategy and Implementation Plan (EJSIP) draft outline. We made the following comments:

- We ask that the EJSIP include specific plans and opportunities to support increased community participation and civic engagement around the prevention of environmental and health harms, rather than monitoring and mitigation after harm has already been perpetrated.
- We also ask that workforce development and training in disadvantaged communities include essential environmental infrastructure design and operation, including water and wastewater design and operations, to support community resilience to changing conditions under climate change and other environmental impacts.
- In addition to education and training around environmental hazards mitigation, we urge HHS to support affected communities in obtaining compensation and reparations for environmental damages and harms.

Preferred outcomes. We wish to achieve equitable inclusion, engage in intentional intervention, prevent inadvertent harm, and end privilege perpetuation. Water equity, as defined by the U.S. Water Alliance, is present when all communities:

- Have access to safe, clean, affordable drinking water and wastewater services.
- Are resilient in the face of floods, drought, and other climate risks.
- Have a role in decision-making processes related to water management in their communities.
- Share in the economic, social, and environmental benefits of water systems.

Equity. The act of developing, strengthening, and supporting procedural and outcome fairness in systems, procedures, and resource distribution mechanisms to create equitable (not equal) opportunity for all people. Equity is distinct from equality which refers to everyone having the same treatment without accounting for differing needs or circumstances. Equity has a focus on eliminating barriers that have prevented the full participation of historically and currently oppressed groups.

Diversity. Describes the presence of differences within a given setting, collective, or group. An individual is not diverse—a person is unique. Diversity is about a collective or a group and exists in relationship to others. A team, an organization, a family, a neighborhood, and a community can be diverse. A person can bring diversity of thought, experience, and trait, (seen and unseen) to a team—and the person is still an individual.

Inclusion. Intentionally designed, active, and ongoing engagement with people that ensures opportunities and pathways for participation in all aspects of group, organization, or

community, including decision-making processes. Inclusion is not a natural consequence of diversity. There must be intentional and consistent efforts to create and sustain a participative environment. Inclusion refers to how groups show that people are valued as respected members of the group, team, organization, or community. Inclusion is often created through progressive, consistent, actions to expand, include, and share.

State commitment. On March 28, 2019, Secretary Wiesman signed Secretary's Directive 2019-01 Reaffirming the Department of Health's Commitment to Diversity, Inclusion, and Cultural Humility. With this directive, our entire agency is committed to:

- Becoming a culturally humble agency.
- Striving to achieve a workforce that is representative and reflective of the diversity of Washington State, at all levels of the agency.
- Addressing the structural inequities at DOH that impact the agency's efforts to be inclusive of the diversity of Washington and meaningfully serve all communities.
- Monitoring the agency's progress on achieving the intent of the directive.

This codified our commitment to several implementation reforms.

Advisors. EPH's equity and social justice manager ensures that EDI and social justice are integrated into policies, processes, programs, and decisions that protect and improve the health of people in Washington State, particularly those who are disproportionately impacted and historically marginalized.

Legislative review. DOH advises executive leadership and lawmakers during the development of state policy. Using the specialized data and expertise at our disposal, we determine which communities would be disproportionally affected. For each community we identify, we report whether the bill is likely to reduce health disparities, increase health disparities, or have no impact on health.

Program development. When authority is delegated to DOH to set the details of state policy implementation, we ask ourselves:

- What equitable outcomes are achieved by this decision, policy, program, or practice?
- Did the process intentionally and meaningfully include all affected stakeholders?
- Does the decision, policy, program, or practice have the potential to do harm to people with lived experiences of oppression?
- Does the decision, policy, program, or practice create or preserve an advantage for people and/or groups who have traditionally benefited from privilege, thus risking perpetuation of the status quo?

Implementations. We will encourage greater inclusion in water system policy and operations by engaging their communities through public right-to-know enhancements. This includes expanding language access (see section 12.3 Environmental justice).

Hiring. The Talent Acquisition Team provides support for managers and supervisors seeking to hire vacant positions within ODW. The Talent Acquisition Team (see section 10.3 Department support) is responsible to help Health become more representative of the population that we serve across the state of Washington.

Its mission includes recruiting, hiring, welcoming, and retaining people of color (race and ethnicity), persons with a disability, sexual orientations and gender identities, individuals across multiple generations, veterans and veteran spouses, diversity of thought as well as individuals who bring a lived experience and perspective to different levels of positions across the agency. We believe the hiring roadmap requires commitment from leaders, hiring managers, and supervisors at all levels across the agency to initiate change as we move forward.

WLAD. Chapter 49.60 RCW, the Washington Law Against Discrimination (WLAD), is an exercise of the state's police power for the protection of the public welfare, health, and peace of the people of Washington and in fulfillment of the civil rights provisions of our Constitution. The legislature found that discrimination threatens the rights and proper privileges of Washington's inhabitants and menaces the institutions and foundation of a free democratic state.[xxiv]

Consequently, WLAD prohibits employment practices on basis of race, creed, color, national origin, families with children, sex, marital status, sexual orientation, age, honorably discharged veteran or military status, or the presence of any sensory, mental, or physical disability or the use of a trained dog guide or service animal by a person with a disability.

Industry. Part of the solution to industrial workforce issues is to increase water industry inclusion, including certified operators, water system administration, and board members. DOH partners with industry leaders and organizations on many issues and priorities, including promoting equity, diversity, and inclusion.

Washington Certification Services partners with Washington Environmental Training Center to offer financial awards to women.

- The **Fred Delvecchio BAT Certification Award** supports the Washington Waterworks Operator Certification Program's workforce development initiative promoting women's involvement in the backflow assembly testing field. The award amount is $200, covering payment in full for the practical portion of the BAT Certification Exam. Two may be awarded each calendar year to any woman who:
  - Is not currently a certified BAT in Washington State.
  - Holds a high school diploma or GED.
  - Is not currently enrolled in a future BAT certification exam.

  Award recipients are responsible for payment for the computer-based (written) portion of the certification exam. The written examination fee is $100. WCS is partnering with Washington Environmental Training Center to offer an optional five-day BAT certification training course to each award recipient, a $680 value.

- The **Peggy Barton BAT Professional Growth Award** was established to promote women's involvement and longevity in the field of backflow assembly testing field. The award amount is for $145, covering payment in full for a BAT Professional Growth examination. Two may be awarded each calendar year to any woman who:
  - Is currently a certified BAT in Washington State.
  - Has not yet met the professional growth requirement for their current reporting period.

  This award is for one professional growth exam. WCS is partnering with Washington Environmental Training Center to offer a three-day BAT refresher training course to each award recipient, a $400 value.

13.5 Consumer engagement

Transformational Plan. In our effort to increase the availability and actionable interpretation of water system data, we pursue a wide variety of Health Systems and Workforce Transformation, Emergency Response and Resilience, and Global and Global Health strategies in DOH's Transformational Plan.

- **Priority II, Strategy 1**: Invest in and support secure and innovative health information technologies and infrastructure supports that will enable partners to access and exchange information that addresses whole person health in a culturally and linguistically respectful way.
- **Priority II, Strategy 2**: Ensure our public health, health care, and community-based partners and their workforce have the data, technology, and system supports they need to build and utilize connections among health, social, and community initiatives.
- **Priority II, Strategy 4**: Strengthen the collection, analysis, linkage, and dissemination of timely, accessible, and actionable health data, guided by community priorities, to inform better community level interventions and initiatives that improve both individual and population health.
- **Priority II, Strategy 5**: Co-create robust data sharing capabilities and systems with local health jurisdictions, with Tribes honoring Tribal data sovereignty, and other stakeholders to support better detection, understanding, and addressing of the burden of disease and health inequities.
- **Priority IV, Strategy 5**: Support and prioritize community-led solutions to mitigate barriers to optimal outcomes, survival, and resilience for all communities especially those most at-risk through a broad range of community engagement and response initiatives.
- **Priority V, Strategy 4**: Advance timely, culturally, and linguistically respectful health information and initiatives, in partnership with health system providers and communities, to support the health and well-being of refugee, immigrant, and migrant communities across Washington.
- **Priority V, Strategy 5**: Emphasize the complex connections of human, animal, and environmental health in our health promotion activities and expand our capacity to

prevent, detect, and respond to global public health threats with domestic health impact whether infectious disease or otherwise.

These strategies encourage ODW to improve our data management and distribution, build stronger relationships, explain the meaning of the data, and communicate effectively when interacting with the members of all communities.

Right to Understand. ODW's vision is that the people of Washington understand the value of safe and reliable drinking water to healthy communities and a vibrant economy. As a result, we endeavor for public water systems to have the technical, managerial, and financial capacity they need to provide it, now and for generations to come. This vision's core is a public that has access to critical drinking water information. They use it to empower their water systems to make wise water decisions that support the long-term needs of their communities.

We embrace the notion of the "3Vs" to increase public health's *visibility*, which in turn engenders *value*, and thereby builds trust and *validation* of our work and its impact.

This vision mandates that we perform as the Office of Drinking Water and not merely as the Office of Group A Drinking Water Systems.

Equity, Diversity, and Inclusion. Systems that perpetuate environmental harms cannot change without the direct involvement of the communities who have borne the weight of systemic disparities, and that such involvement has been rarely supported by Washington state's government. We recognize the critical value of repairing relationships and building trust with these communities.

Repairing relationships and building trust between government and those members of the public harmed by environmental injustice is central ODW's strategy. We desire to repair relations and building trust between Washington state government and Tribal governments. A focus on trust-building in this context places skills like cultural humility and emotionally intelligent communication in the forefront. We see more ties to community organizing and cultivating ongoing relationships than to conventional communications-oriented information sharing. See section 13.4 Equality, diversity, and inclusion.

Available Information. ODW, our partner agencies, and water systems make a great deal of information available. While the information itself is often uninterpreted, this volume of information has potential to serve as the backbone of a robust consumer engagement program.

- **Emergencies**
  - Tier 1 public notification by public water systems and on our drinking water alerts web page.
  - Emergency response and water shortage response communications plans as part of WSP and SWSMP.
- **Water quality**
  - Tier 2 public notification by public water systems within 30 days.

- Tier 3 public notification by public water systems within a year.
- Consumer confidence reports by community water systems each year, and soon twice a year by the larger systems.
- Sentry Internet data, provided by ODW.
  - Consumers can use the data to find information on the water system supplying drinking water to their homes and businesses. They can check the system's water test results to see what's in their drinking water.
  - Academic institutions may use water quality and chemical data in research studies.
  - LHJs can review the most recent WFI for their local systems. They can review information for pre-adequacy reports and review sanitary survey information. They can get most recent contact information for water systems, including addresses and phone numbers.
  - Water system owners, operators, and consultants may review or download the most recent WFI for updating, use water quality data to produce their annual Consumer Confidence Reports, and verify that their systems' water quality and annual performance report data have been entered into our database.

- **Land development** from Sentry Internet, provided by ODW.
  - Lending institutions and real estate agents can review information for pre-adequacy reports. This may include the capacity of a water system for new hookups, water quality data, and whether the system is approved.
  - Local governments, developers, and landowners can check to see if their water suppliers have sufficient capacity to serve new development.
  - Utilities and contractors can get contact information to notify the owners and operators of water systems before constructing or excavating in the area.
- **Water system closure and transfer**
  - When a public water system makes the decision to close permanently, it must provide its customers and ODW at least one year's notice.
  - When a public water system is transferred to a new owner, one year's notice is also required, unless the new owner agrees to an earlier date.
- **Environmental and cultural**
  - Lead agencies under the State Environmental Policy Act (SEPA) must provide notice of their determinations.
  - Lead agencies performing the State Environmental Review Process (SERP) in lieu of the National Environmental Policy Act (NEPA) must also provide notice, even in the case of a finding of no significant impact (FONSI).
  - Cultural and Historic Resources. To protect cultural and historical resources, lead agencies must also provide notice to the public to solicit information about potential impacts.
- **Policy adoption**
  - Adoption of water system plans by community water systems.

- Level of reliability consumer expectations by public water systems in their WSP or SWSMP.
- WUE goal setting by municipal water suppliers, including the proposed WUE program, annual WUE performance reports (which are also available on in Sentry Internet), water supply characteristics or source description, and a summary of comments received and how they were considered.
- Open public meetings are announced by governmental systems. SBOH announces its meetings in the Washington State Register.
- Notifications under the Administrative Procedures Act, including
  - Rulemaking notifications by SBOH and ODW.
  - Interpretive and policy statements by state agencies.
- UTC consumer protection information, such as complaints and rate setting.

- **Regional planning**
  - Coordinated Water System Plans and Abbreviated Coordinated Water System Plans.
  - SMA service areas and plans.
- **Publications and public records**
  - GovDelivery notifications and websites.
  - Publications and periodicals provided by DOH.
  - Public disclosure by all governmental public water systems and state agencies (but not vulnerability assessments). WSP and SWSMP for privately held systems are available from ODW.
  - WUE public education provided by municipal water suppliers
- **Reporting.** We provide the following reports:
  - *Washington's Drinking Water Strategy* 331-703.
  - Annual capacity development report (see section 4.3 Reporting).
  - ODW annual report (see section 3.4 Reporting).
  - Triennial gubernatorial report (see section 4.3 Reporting).
  - State-tracked performance measures.
- **Geographical** resources such as the Washington Tracking Network and SWAP maps. We intend to provide additional geographic information, such as the upcoming PFAS detections map.

A.0 Application of authorities

This appendix describes the various state authorities applied to develop and ensure public water system capacity. In the following table, we demonstrate the relationship between purveyor's responsibilities and the varied authority state and local agencies exercise to assess and develop water system capacity. In the table:

- **Purveyor Responsibility** is a function that a water system purveyor or related entity must perform where the state or local agency can directly exercise authority.
- **State or Local Developmental or Assessment Activity** is what specific action the state or local agency will take to ensure demonstration of technical, managerial, and financial capacity.
- **Basis of Authority** lists the state law (RCW), regulations (WAC), policy, or other authority that permits or requires state or local agency action.
- **Agency** identifies the state or local agency (or agencies) responsible for exercising the authority.
- **Assessed Capacity** lists the aspects of capacity (T for technical, M for managerial, and F for financial) being evaluated by the state or local agency.
- **Application** describes which type(s) of purveyors or related entity is subject to the listed responsibility.

For the purposes of this appendix:

- "All" means new and existing.
- "Department," "DOH," and "Health" mean Washington State Department of Health within which the state's primacy agency, Office of Drinking Water, is organized.
- "Group A" includes public water systems providing or planning to provide service such that they meet the definition of a public water system provided in the 1996 amendments to the federal SDWA (Public Law 104-182, Section 101, subsection b).
- "Group B" includes public water systems that are not Group A public water systems.
- "Investor-owned public water system" means a for-profit public water system that serves 100 or more customers or have charges that exceed an average of $557 per customer per year.
- "LHJ" means local health jurisdiction, local government agencies empowered by state or local authority to implement a wide variety of programs to promote health, help prevent disease, and build healthy communities.
- "Local" means a unit of local general government, typically a town, city, or county.
- "Municipal water suppliers" are a category of water supplier whose inchoate water rights are protected with additional public obligations.
- "Operators" are individual people who are in responsible charge of a water system or water treatment plant and people who serve as cross-connection control specialists or backflow assembly testers.
- "Public water systems" means Group A and Group B water systems.
- "Purveyor" means a water system owner and its agents, including water system operators, and satellite management agencies.
- "Satellite Management Agencies" and "SMA" are organizations approved by DOH to own or maintain and operate public water systems. Because SMAs provide their technical, managerial, and financial capacity to their water systems, the SMAs TMF capacity is directly related to the TMF capacity of associated public water systems.
- "WCS" is Washington Certification Services.

Table A: Basis of authority

Purveyor Responsibility	State or Local Developmental or Assessment Activity	Basis of Authority	Agency	Assessed Capacity	Application
Engage in Regional Water System Coordination	Health will not approve the creation of a new water system in areas with a coordinated water system plan or abbreviated coordinated water system plan unless service is denied by existing systems. Water system applicants are directed to existing systems for service in claimed service areas, rather than allowing new systems to be formed.	RCW 70A.100.060 (3)(b) Chapter 246-293 WAC WAC 246-291-090(1)-(2)	DOH, Local	TMF	All public water systems subject to a coordinated water system plan or abbreviated coordinated water system plan
Be Owned or Maintained/Operated by an SMA	With limited exceptions, health will not approve the creation of a new public water system unless that system is owned or managed and operated by a department approved SMA. Health places conditions on all approval documents for new systems.	RCW 70A.125.060(2) RCW 70A.100.130 WAC 246-290-035(1) WAC 246-291-090(3)	DOH, LHJ	TMF	New public water systems approved after June 30, 1995
Develop and Adhere to Approved SMA Plan	To become an approved SMA, an organization must gain approval for and adhere to its SMA plan. SMA plans must be updated and approved no less often than once every five years.	RCW 70A.100.130(3) WAC 246-295-040 WAC 246-295-100 (1)(b)	DOH	TMF	All approved SMAs
Maintain SMA Compliance	DOH may revoke, suspend, modify, or deny SMA approval for cause or expiration of SMA plan approval.	RCW 70A.100.130(4) WAC 246-295-100 (1)(a) & (2)	DOH	TMF	All approved SMAs
Develop and Implement a Water System Plan (WSP)	DOH reviews, evaluates, and approves of initial or periodic water system planning document prior to creation of a new system, infrastructure-facilitated expansion of an existing system, or ongoing compliance for systems with 1,000 or more connections.	RCW 43.20.050 (2)(a) RCW 70A.100.050 WAC 246-290-100	DOH, Ecology, UTC	TMF	Group A-Community systems that are new, expanding, or with 1,000 or more connections.
Develop and Implement a Small Water System Management Program (SWSMP)	DOH requires Group A systems not required to develop a WSP must develop and maintain a SWSMP. New Group A NTNC systems and existing systems seeking as-built approval must gain initial SWSMP approval. Systems must make their SWSMP available to DOH.	RCW 43.20.050 (2)(a) WAC 246-290-105	DOH, Ecology, UTC	TMF	All Group A systems not required to submit a WSP
Maintain Local Consistency	DOH will not approve planning and engineering documents unless they are consistent with relevant, locally adopted plans and regulations.	RCW 43.20.260 WAC 246-290-108	DOH	M	All MWS
Implement the Duty to Serve	With statute-specified exceptions, health requires that MWS recognize and implement their duty to provide retail water service to all new service connections within their retail service areas.	RCW 43.20.260 RCW 90.03.015 WAC 246-290-106	DOH	M	All MWS
Improve Water Use Efficiency (WUE)	DOH accepts the validity of a WUE plan only if the MWS satisfies public involvement, service metering, distribution system leakage, and annual reporting standards.	RCW 43.20.230-.235 RCW 70A.125.170 Part 8 of chapter 246-290 WAC	DOH	TMF	All MWS

Table A: Basis of authority

Purveyor Responsibility	State or Local Developmental or Assessment Activity	Basis of Authority	Agency	Assessed Capacity	Application
Document Avoidance or Mitigation of Probable, Significant, Adverse Impacts on Natural and Human Environments	DOH will not approve a nonexempt project or non-project action without a determination of nonsignificance, a final environmental impact statement or, in the case of a federal project, the publication of notice of state environmental review process exemption.	Chapter 43.21C RCW Chapter 197-11 WAC WAC 246-03-030(2)-(3) WAC 246-290-100 (4)(k)(i) WAC 246-290-110 (4)(a)(ii) WAC 246-296-170(1)	DOH	TM	All public water systems
Engage in Source Water Protection	DOH requires all Group A systems to complete a source water protection program as part of a water system planning document. Local governments are required to protect the quality and quantity of groundwater for public water supplies and critical areas in their comprehensive planning documents.	RCW 36.70A.070(1) RCW 36.70A.070 (5)(c)(iv) RCW 70A.125.080(1) WAC 246-290-135	DOH, Local	TM	All Group A public water systems and all local general governments (cities, towns, and counties)
Respect Water Right Limitations	DOH will not authorize new connections to an existing water system or the creation of a new public water system without documentation of sufficient water rights. Parties requesting new water rights for new systems are required to have a current approved WSP.	RCW 90.03.250 RCW 90.44.050 WAC 246-290-130 (4)(b) DOH Ecology MOU	DOH, Ecology	TM	All public water systems
Make a Place of Use Expansion only as approved	DOH will expand a water system's place of use for its water right through approval of a water system planning document that satisfies statutory requirements.	RCW 90.03.386(2) WAC 246-290-107	DOH	M	Existing municipal water suppliers
Maintain Water Right Adequacy	Local governments must make written findings regarding provisions for potable water supplies or adequacy of water supply when considering short plats, subdivisions, and individual building permit applications.	RCW 19.27.097 RCW 58.17.110 Chapter 36.70A RCW	Local	T	All public water systems and all local general governments (cities, towns, and counties)
Engage in Planning before Engineering	DOH will review submitted project reports and construction documents only if there is a current approved WSP and the plan adequately addresses the projects.	RCW 43.20.050(2) WAC 246-290-110(3) WAC 246-290-120(3)	DOH	TMF	All Group A-community subject to WSP requirement
Gain As-built Approval	Unapproved water systems must submit information required to obtain approval. At a minimum, a system must submit a WSP or SWSMP, as-built drawings, and water quality analysis.	RCW 43.20.050(2) WAC 246-290-140	DOH	TMF	Existing Group A public water systems
Gain Design Approval	A purveyor shall receive written DOH or local health officer approval of a design report.	RCW 43.20.050 (2)(b) RCW 70.05.070(8) WAC 246-291-120	DOH, LHJ	TM	All Group B public water systems

Table A: Basis of authority

Purveyor Responsibility	State or Local Developmental or Assessment Activity	Basis of Authority	Agency	Assessed Capacity	Application
Gain Source Approval	No new source, previously unapproved source, or modification of an existing source shall be used as a public water system without department approval. DOH will not provide approval unless the source meets state standards.	RCW 43.20.050(2) WAC 246-290-130	DOH	TM	All public water systems
Observe Source Treatment Restrictions	No source will be approved for use or for expansion purposes if it requires ongoing treatment to meet water quality requirements.	WAC 246-291-170	DOH	T	All Group B sources after January 1, 2014
Engage in Professional Engineering	DOH will not approve any engineered document not prepared under the direction, and bears the seal, date, and signature of a professional engineer licensed in Washington and having expertise regarding design, operation, and maintenance of public water systems.	Chapter 18.43 RCW WAC 246-290-040 WAC 246-291-120 & -125	DOH	TM	All public water systems
Submit Project Report	Purveyors must receive approval for project reports (including projects associated with creating a new system) before they can begin construction.	RCW 43.20.050(2) WAC 246-290-110 WAC 246-291-120	DOH	TMF	All public water systems
Submit Construction Documents	A water system must prepare engineered construction documents and must receive approval by DOH prior to construction of any new facilities. Systems are required to submit a construction certification report after completion of the project.	RCW 43.20.050(2) WAC 246-290-120 WAC 246-291-120 WAC 246-291-200 WAC 246-191-210	DOH	TMF	All public water systems
Comply with Stop Work Order	DOH will issue a departmental order to stop work if it determines that a system is being constructed without the necessary approvals.	WAC 246-290-050(5) Policy J.06	DOH	M	All public water systems
Respect Connection Limit	Public water systems may not make additional service connections beyond DOH's approved number of service connections.	WAC 246-294-040 (2)(c)	DOH, Local	TM	All public water systems
Observe Intertie Regulations	No interties may be used or constructed without Ecology and departmental approval.	RCW 90.03.383 WAC 246-290-132 WAC 246-291-135	DOH, Ecology	TM	All public water systems
Maintain an Operating Permit	All Group A public water systems must obtain an annual operating permit from DOH accompanied by a water facilities inventory update.	RCW 70A.125.100(1) WAC 246-294-030	DOH	TM	All Group A public water systems
Comply with Federal and State Regulations	DOH may revoke, condition, modify, or deny the issuance of an operating permit.	RCW 70A.125.100 WAC 246-294-050	DOH	TM	All Group A public water systems

Table A: Basis of authority

Purveyor Responsibility	State or Local Developmental or Assessment Activity	Basis of Authority	Agency	Assessed Capacity	Application
Employ Certified Operator(s)	All community and NTNC water systems and water systems with a surface water source or groundwater source under the influence of surface water must be operated by a certified operator.	RCW 70A.120.030 WAC 246-292-020	DOH	TM	All Group A-Community and NTNC; Group A-TNC in substantial noncompliance
Gain and Maintain Operator Certification	Certified operators must meet minimum educational and testing standards and receive continuing education.	Chapter 70A.120 RCW Chapter 246-292 WAC	DOH, WCS	T	All Operators
Operator Compliance with Federal and State Regulations	DOH may suspend an operator's certificate for up to one year or revoke an operator's certificate for up to five years, including for acts of fraud, deceit, or gross negligence.	RCW 70A.120.110 WAC 246-292-100	DOH	T	Existing certified operators
Develop and Implement an Operations and Maintenance (O&M) Plan	Group A systems must be operated in accordance with an approved O&M Plan as provided in a WSP or SWSMP. Sets forth criteria for approval including water system management and personnel, operator certification, comprehensive monitoring plans for all contaminants, emergency response program, and maintenance and reliability standards.	RCW 43.20.050 (2)(a)(v) WAC 246-290-415	DOH	TM	Existing Group A
Perform Water Quality Monitoring	DOH requires all Group A systems to conduct water quality monitoring at the source and in the distribution system. Frequency of monitoring is based on source vulnerability, actual or suspected contamination, and evaluation of the effectiveness of treatment. A local health officer or DOH may require Group B systems to collect water samples.	RCW 43.20.050 (2)(a)(ii) RCW 43.20.050 (2)(b) RCW 70.05.070(1) RCW 70A.130.020 & .030 WAC 246-290-300 WAC 246-291-300	DOH	T	Existing public water systems
Submit to Periodic Sanitary Survey	All Group A systems must cooperate in a sanitary survey conducted by DOH or its designee, including third parties and other qualified individuals. Regulations require purveyor to ensure cooperation in scheduling the survey and ensure unrestricted availability of all facilities and records at the time of the survey.	WAC 246-290-416 Policy A.18	DOH	TMF	Existing Group A
Submit to Special Purpose Investigation	When DOH is aware of a potential public health concern, regulatory violation, or consumer complaint, water systems must submit to on-site inspection by DOH or designee.	WAC 246-290-416 (1)(d)	DOH	T	Existing Group A
Provide Public Notification	DOH requires water systems to notify water system users, consecutive systems, and DOH for violations and other situations. Information must be in the appropriate languages or contact information to request translation assistance	RCW 43.20.050(2) RCW 38.52.070 (3)(a)(ii) Part 7A of chapter 246290 WAC WAC 246-291-360	DOH	M	Existing public water systems

Table A: Basis of authority

Purveyor Responsibility	State or Local Developmental or Assessment Activity	Basis of Authority	Agency	Assessed Capacity	Application
Maintain and Improve Consumer Confidence	Community systems must deliver specified content in annual reports to their customers.	Part 7B of chapter 246-290 WAC	DOH	M	Existing Group A-community
Make Customer-Protective Revenue Choices	The state approves water rates that are just, fair, and reasonable for customers and sufficient to cover legitimate costs and allow the company the opportunity to earn a return on capital.	RCW 80.28.010(1)	UTC	MF	Existing investor-owned public water system
Provide Customer-Protective Service	Water systems must furnish their service safely, adequately, and efficiently, and in all respects just and reasonable.	RCW 80.28.010(2)	UTC	T	Existing investor-owned public water systems
Provide Just and Reasonable Rules	Water system rules and regulations affecting or pertaining to its service must be just and reasonable.	RCW 80.28.010(3)	UTC	M	Existing investor-owned public water systems
Maintain Required Commodity Quality	The state may require improvements to the purity, quality, volume, and pressure of water if it is found insufficient.	RCW 80.28.040 RCW 70.54.040	UTC	T	Existing investor-owned public water systems
Submit to Public Purveyor Audits	The state auditor conducts accountability, financial, and federal single audits to evaluate whether local governments adhere to state laws, regulations, and their own policies and procedures, whether their financial statements present a reliable, accurate picture, and whether the local government has complied with applicable federal requirements.	Chapter 43.09 RCW	State auditor	MF	Existing public water system owned by a local government
Submit to Private Purveyor Audits	Water systems must submit to an audit for the purpose of identifying legal roles and responsibilities, development of system financial programs, assess financial viability, informing system customers, and resolve UTC jurisdiction.	RCW 80.04.110 Policy J.03	DOH, UTC	MF	Existing public water systems not owned by a local government and failing to meet state board of health standards
Comply with Loan Conditions	DOH will not approve construction funding unless the project is in an approved water system planning document; addresses federal, state, and local laws; guarantees payment from a dedicated source; and DOH is confident that the recipient will maintain records, submit a construction completion report, comply with EPA and departmental orders, and submit to an audit.	RCW 70A.125.160 WAC 246-290-100 WAC 246-290-105 WAC 246-296-150	DOH	MF	All Group A
Provide Notice of System Transfer or Termination	A purveyor may end utility operations only after providing written notice to all customers and to DOH at least one year prior to termination of service. Additionally, a purveyor must provide written notice to DOH and all consumers at least one year prior to a transfer of ownership (except Group A systems, if the new owner agrees to an earlier date).	RCW 43.20.050 (2)(a) RCW 7.60.200 WAC 246-290-035 WAC 246-291-250	DOH	M	Existing public water systems

Table A: Basis of authority

Purveyor Responsibility	State or Local Developmental or Assessment Activity	Basis of Authority	Agency	Assessed Capacity	Application
Prevent Receivership	The secretary of health or a local health officer may petition superior court to place a failing public water system into receivership. The UTC may request that DOH make a petition for failure to comply with a commission order.	Chapter 7.60 RCW RCW 43.70.195 RCW 80.28.030(2)	DOH, LHJ, UTC	M	Existing public water systems
Prevent Injunctions	The secretary of health or local health officer may bring an action to enjoin a violation or the threatened violation of any of the provisions of the public health laws or regulations.	RCW 43.70.190	DOH, LHJ	M	All public water systems
Prevent Civil Penalties	A person who violates a law or rule is subject to a penalty of not more than five thousand dollars per day for every such violation or ten thousand dollars if the violation has been determined to be a public health emergency.	RCW 43.70.095 RCW 43.70.200 RCW 70A.125.040 & .030 WAC 246-290-050	DOH	M	All people
Prevent Criminal Penalties	Certain documentation submitted to DOH is subject to penalties under perjury. Examples of criminal acts include furnishing impure water, operating a water system without a permit, operating without a required certified operator, and polluting watersheds that serve communities in other states.	RCW 70.54.020 & .030 RCW 70A.120.130 WAC 246-290-050	Attorney General, County Prosecutor	M	All people
Comply with All-Agency Enforceability	All local boards of health, health authorities and officials, officers of state institutions, police officers, sheriffs, and all other officers and employees of the state, county, or city enforces all rules adopted by the state board of health.	RCW 43.20.050(5)	(See list in column 2)	M	All people

B.0 Public involvement

B.1 Communications program

Interested parties. Water is of interest to everyone. We recognize that in addition to the responsible agencies and collaborative relationships documented in section 5.3 Partnerships, others have a vested interest in our approach to water system capacity, including the public water system owners and operators.

Solicitation of public comment. We solicited and considered public comment and encouraged stakeholder involvement through:

- Topic-focused email notification.
- Presentations at conferences and advisory group meetings.
- Requesting comments at conferences, advisory group meetings, and via GovDelivery (see Public and stakeholder notification below).
- Holding a comment period.
- Considering all comments received during the comment period.

Conferences and advisory group meetings. We provided an overview of the capacity development strategy purpose in fall 2021 to the ERWoW and Infrastructure Assistance Coordinating Council conferences. Stakeholders were also invited to provide comments during the public comment period.

Drinking Water Advisory Group. Over the course of a year, we had five specific presentations and input sessions with the participants of DWAG meetings. The dates and titles of each session were:

- June 2021. Introduction to Washington's Capacity Development Strategy.
- September 2021. Major Issues in the next ten years.
- December 2021. Themes from DWAG.
- March 2022. Barriers and Incentives.
- June 2022. The Future of Asset Management.

The June 2021 session was an introduction for DWAG participants about how we were going to be developing the strategy and asking for their input. The December 2021 session was used to confirm with DWAG participants that we had heard their concerns well and to solicit additional short-term implementation guidance not detailed in this strategy. The input received from the other three sessions are documented in the following section.

Public and stakeholder notification. GovDelivery is an email-delivery service that allows members of the public to receive notifications of governmental action. The public may sign up for any number of subscription topics at DOH. We use GovDelivery for a variety of activities, including newsletters, announcing public meetings, and policy updates and rule changes. We employ GovDelivery to distribute notice to the public and stakeholders. This includes local

health jurisdictions, water system utilities, water system associations, and third-party technical assistance providers. We encouraged people to download and read the draft capacity development strategy and make comments.

The timeline for stakeholder involvement has closed. However, the strategy itself encourages ongoing stakeholder participation through the emerging environment and program plan continual improvement process.

B.2 Input

Stakeholder input: Major issues in the next ten years. In September 2021, we asked DWAG members to identify their biggest issues over the next ten years. We grouped the input into a list of top issues.

Table B.1: Topics mentioned by stakeholders as major issues

Topic	Mentions	Focus
Affordability	1	Affordability in conservation and drought response.
Aging infrastructure	3	Maintenance/replacement costs; budgeting with inflation.
Arsenic	1	Preventing contamination.
Asset management	2	(See the *Stakeholder input: Future of asset management* subsection and Table B.4 below).
Capacity development	2	Training and how to reach smaller systems.
Climate change	2	Water use efficiency and increased costs due to drought.
Consumer engagement	5	Customers need to understand costs; Better CCRs; WUE.
Cross-connection control	1	Staffing.
Emergency Response	4	Risk assessments; cybersecurity; DOH inclusion; prioritization.
Emerging contaminants	9	State/fed differences; PFAS; LCRR; Effect on B's; UCMR; costs.
Environmental justice	2	Focus on preventing contamination.
Equity, diversity, and inclusion	4	Funding equity; drought costs; minority operators; disconnection.
Operator certification and training	9	Lack of operators; OIT; more testing locations.
Pandemic impact	9	Disconnection; in-person activities; prioritization; ODW offices unavailable; LHJ capacity; vaccine mandates.
Public Right-to-Know	2	PFAS; CCRs.

Topic	Mentions	Focus
Regionalization and consolidation	6	Facilitation of consolidation and restructuring; water rights.
Sanitary survey	1	Relationship with project review.
SMAs	2	Lack of operators, meeting needs of new customers.
Source water protection	1	Future capacity.
Water system planning	1	Relationship with sanitary surveys.
Water use efficiency	2	Audits and public education.
Water rights	3	Regionalization, efficiency, gaining more rights.
Workforce depletion	2	Funding and training for future workforce.

Stakeholder input: Capacity development barriers and incentives. In March 2022, we engaged DWAG in a breakout and report session to identify barriers and incentives to capacity development. (Barriers and incentives to asset management were discussed at a later meeting.) We asked DWAG participants to provide their perspectives on three, two-part questions.

1) **Thinking about local governments** (or other local governments, if you represent one), such as local health jurisdictions, counties, cities, towns, public utility districts, special purpose districts, etc.
   a) How do local governments hinder your system's progress?
   b) How do local governments help your system's progress?
2) **Thinking about the federal government**, such as EPA, the white house, or congress:
   a) How does the federal government hinder your system's progress?
   b) How does the federal government help your system's progress?
3) **Thinking about the state government**, such as ODW, Ecology, Utilities and Transportation Commission, Washington State Department of Transportation, the governor, and the legislature:
   a) How does the state hinder your system's progress?
   b) How does the state help your system's progress?

The categorized data we received are in Tables B.2 *Barriers to capacity development* and B.3 *Incentives for capacity development.*

Table B.2: Barriers to capacity development

Category	Barriers to capacity development
Education	• Educating **customers** on what we do and why. • Communication issues with **customers** and helping them understand the cost and value of drinking water. • Educating **City Councils**. • Rate increases and how to communicate to **customers** about why rate increases are necessary.
Operating costs	• Cost of **water** and running water systems. • Impact of **utility taxes** can be extreme. • Varying charges for **permits and sanitary surveys** between counties.
Communication/ coordination	• Communication issues and understanding/coordinating between **LHJ, ODW, Federal, Counties**. • LCRR **rulemaking** timeline. • Challenges working with exempt wells and Department of **Ecology**—need more communication and coordination.
Federal funding	• Federal government funding—difficult/a lot of work to get **access** to this funding. • **Timeline** requirements of federal government for construction funding can be hard to meet. • COVID relief funds are available, but they're difficult to **access**.
Workforce depletion	• **Operator vacancies**/shortages. • **Educational background requirements** are being problematic for higher operator certifications. • **Apprenticeship** needs and bringing new people into the industry.
Land use	• Local government requirements for **zoning, density, landscape** can be costly and challenging. • Constantly changing **growth management act** requirements. • Water systems have insufficient **source water protection control** over what gets into their water.

Table B.3: Incentives to capacity development

Category	Incentives for capacity development
Education	• **DOH engineers** have been great resource to systems. • Appreciate education materials provided by **DOH/ODW**.
Communication/ coordination	• Have good communication between **government agencies** and water systems and utilities. • **Communication and coordination getting better.** • Benefit of **overarching support**. • LCRR **rulemaking** was also an incentive to help with planning and preparation for the changes.

Stakeholder input: Future of asset management. In June 2022, we asked DWAG stakeholders what they believed the future of asset management in Washington should be. We asked five questions during the breakout, and each group reported out.

- Do you have an asset management program? If so, how much public engagement was there in setting your level of service?
- Which of asset management's five core questions is our weakest?
- What other organizations encourage or assist with asset management (e.g., RCAC)?
- What barriers are small systems struggling against?
- What should ODW do to help small systems use asset management and what should others do?

The data we received are in Table B.4 *Future of asset management input*.

Table B.4: Future of asset management input by topic

Topic	Future of asset management input
Do you have an asset management program?	• My public utility district has an asset management plan that was created in 2012 and updated in 2018. We use it in all aspects of management of 208 water systems. • Sammamish has an asset management program. • Lakewood is currently working on one.
Public engagement	• It is difficult to get the public engaged. A way to explain it is that it's like a new roof; it needs to be replaced every 25-30 years. You need to plan and save money for this. • Recommend a brief "snippet" on customer water bills to keep customers constantly informed about repairs and improvements currently needed or in process. • City of Vancouver put together a Finance and Asset Management group, working with consultants on planning and risks. • Direct impact to rates and fees gets people involved.
What barriers are there to adopting asset management?	• One participant had the impression that it may be easier for smaller water systems to create asset management plans as there are less communications needed. • Small systems find it daunting. • Small systems often aren't prepared to manage a water system (homeowners' associations, for example). • Systems seem focused on financial aspect of capacity and the prevailing thought that water is "free" but the service to get water is not. • One challenge is that city council members frequently change. Water systems are constantly needing to explain needs and costs. • It's difficult to know how detailed asset management plans should be. • Barrier is that people don't understand the importance of asset management programs. "People" are often the most important asset to a water system. • Dynamic and continuing evolving assets is a challenge.
Weakest core question	• Level of service is difficult to address in a technical way, but it ultimately drives what rates/fees will be.

Topic	Future of asset management input
How could ODW help?	• One solution is to emphasize the Small Water System Management Plan for smaller systems. • Ability to assess, mentor, and evaluate more systems would be helpful. • Suggestion of different levels of intensity for different water systems depending on size of system. • Emphasize the importance of asset management plan in keeping good records and assisting with attaining grant funding. • Convey the importance of education and an asset management program. • Small systems need assistance and education on how to plan and apply for funding when needed. • Additional regulation would not be helpful.
Who else helps?	• ERWoW and RCAC can assist with developing asset management programs.
What could others do?	• Mentorship between cities and water systems to compare what level of service each has established and help each other for creating asset management programs. • Homeowners' associations and small water systems need to bring to their boards' attention the importance of investing in future improvements. • Important to coordinate and communicate with systems as a piece of attainting funding from the Public Works Board. • The Public Works Board, specifically, is likely to use asset management plans as they begin to evaluate work on climate impacts/emergency response, equity, and affordability."

Public comment period. The comment period opened on October 24, 2022 and closed on November 6, 2022. We received relevant input from four commenters, including comments from EPA Region 10 received on October 17, 2022.

Table B.5: Public comments and ODW response

Commenter	Comment Summary	Response
Tom Jensen, PE	The purpose of this document is unclear. It would benefit from an executive summary.	Please see sections 1.0 Introduction and 1.4 Organization of this document.
	It is unclear who this document is for.	Section 1.3 How this document will be used clarified.
	I am creating an asset management plan for my water system due to free online classes for continuing education	Noted.
	Aspirational statements are not necessary.	Noted.
Diane Johnson	It's prohibitively expensive to connect to the local public water system.	Note on replacing inadequate supplies added to section 11.2 Affordability
EPA Region 10	Is the information about 2017 workgroup necessary for the strategy?	Unnecessary information in section 11.3 Asset management removed.

Commenter	Comment Summary	Response
	Consider rearranging asset management subsections for clarity.	Subsections in section 11.3 Asset management reordered.
	Five Questions headers are indistinct.	Headers in section 11.3 Asset management updated.
ERWoW	Staff turnover is also a concern.	Added to Internal Capacity list in section 1.1 Water system capacity
	Water distribution certified operators are not listed in section 8.3 Water system lifecycle.	WDM or WDS are required for all Group A Community and NTNC. See the **New systems** subsection.
	Apprenticeship and QUEST programs begin in the fall.	Section 13.1 Workforce depletion amended.

B.3 Consideration

We considered input from both public comments and stakeholder involvement and integrated their observations into the strategy. In particular:

- **Major issues.** Stakeholder input from the "major issues in the next ten years" session was used as a sidebar example in section 3.1 Sensing the evolving environment as the type of stakeholder involvement we continually engage in. Many of the topics DWAG identified were adopted as state initiatives in chapters 11 Financing, 12 Environment, and 13 People.
- **Barriers and incentives.** Input we received from the "barriers and incentives" session was used to generate potential state responses. The responses are integrated into the strategy as the Barriers and incentives subsection of section 5.2 Attainability.
- **Future of asset management.** Stakeholders provided guidance that will help us focus our activities. Their observations were integrated into our asset management state strategy in section 11.3 Asset management.
- **Public comments.** Each comment received by the department, including those from EPA Region 10, was evaluated for relevance. Draft responses for relevant comments were generated by ODW policy and planning staff. Comments that could be addressed by regional or headquarters staff were forwarded to the appropriate technical assistance provider. The comments and responses were then reviewed by our Management Team and approved prior to publication. Relevant comments and our responses are included in the public comment period subsection of section B.2 Input, including the location where the comment resulted in an enhancement of the strategy.

After strategy adoption. After the strategy has been adopted, the public and stakeholders will continue to have the opportunity to provide input on the implementation of the capacity development strategy.

C.0 Review of federal compliance

Purpose. *Washington's Drinking Water Strategy* is deeply rooted in the state's philosophy of empowering and honoring local decision making by providing a wide range of high-quality assistance to achieve both local and statewide goals. We recognize that water system purveyors are primarily responsible for the equitable delivery of safe, reliable drinking water. Many other public, private, and nonprofit organizations are also engaged in activities that affect drinking water quality and quantity.

Consequently, the document is much broader in scope than would be required if its primary duty was to satisfy federal requirements. Our capacity development strategy considers the needs of:

- Public water systems subject to the Safe Drinking Water Act.
- Smaller public water systems not subject to the Safe Drinking Water Act, yet still expected to achieve and maintain satisfactory water quality standards.
- Every water source people use for their potable needs.
- Satellite management agencies to achieve superior technical, managerial, and financial capacity.
- Regional, coordinated action to reduce and prevent the creation of small, inadequate water systems and to improve existing systems' technical, managerial, and financial capacity.
- Local governments, such as cities, towns, and counties, through land use controls for source water protection, system adequacy for new subdivisions, water-supportive land use, consistency with growth management principles, and community economic development aspirations.
- State agencies and local bodies engaged in the protection of water resources.
- The people of Washington state to equitably secure their due rights and privileges regardless of race, creed, color, national origin, citizenship or immigration status, sex, honorably discharged veteran or military status, sexual orientation, or the presence of any sensory, mental, or physical disability or the use of a trained dog guide or service animal by a person with a disability.

To ease federal evaluation, we developed this appendix to identify the chapters, sections, and appendices of the capacity development strategy that satisfies federal requirements encoded in Section 1420 of the safe drinking water act, 42 U.S.C. 300g-9(c)(2), as amended. This appendix is organized around the topics addressed by capacity development assessment worksheets provided by EPA:

- Worksheet for Assessing State Programs for Ensuring Demonstration of New System Capacity.
- Worksheet for Assessing Proposed State Capacity Development Strategies for Existing Public Water Systems.

- Worksheet for Reviewing Current State Asset Management Programs within the Capacity Development Strategy for New and Existing Systems.

State grant of departmental authority. The state delegates the responsibility to administer a drinking water program to the department of health in RCW 70A.125.080. In subsection (1), the department is directed to include "those program elements necessary to assume primary enforcement responsibility for part B, and section 1428 of part C of the federal safe drinking water act." The department is also responsible for making agreements with other agencies to administer the act, such as the department of ecology (See the "Collaborative Agreements" subsection in section 5.3 Partnerships). For this purpose, the department is authorized to accept federal grants.

The Safe Drinking Water Act (SDWA) Amendments of 1996 contain three key capacity development provisions. The first provision requires states to obtain the legal authority or other means to ensure that new community and non-transient non-community water systems are created with capacity. The second provision requires states to develop and implement a strategy to assist existing public water with acquiring and maintaining capacity. The third provision requires states to assess and only award Drinking Water State Revolving Fund (DWSRF) financing to systems that currently have capacity or systems that will acquire capacity by obtaining the DWSRF assistance.

C.1 New system capacity

Basis of authority. The state's regulations, policies, and other implementing authorities, including their statutory basis, are listed in Appendix A. The specific statutes, rules, policies that empower state and sub-state action are listed in the column labeled "Basis of Authority." Each listed authority states which agency (or agencies), whether state or sub-state, is responsible for implementation in the column labeled "Agency." Collaborative arrangements are listed in section 5.3 Partnerships.

Control points. We list control points in Appendix A for each listed authority. We included which aspects of capacity (TMF) are evaluated at that control point. We evaluate each aspect of capacity at multiple control points, including the creation of a new water system and periodically for existing systems. Specifically:

- **Control points** are labeled "Purveyor Responsibility" in Column 1.
- **Aspects of capacity** evaluated at each control point are labeled "Assessed Capacity" in Column 5.
- **Specific actions** taken at each control point are labeled "State or Local Developmental or Assessment Activity" in Column 2.

Please note that the requirements for both "New" and "All" systems apply to new systems.

Plan for implementation and periodic review. The state evaluates its effectiveness on three levels: by each program area, across statewide priorities, and at the strategic level. How we

evaluate the implementation and on-going effectiveness of our new system capacity development program is addressed for:

- Individual program areas, in section 6.2 Goalsetting.
- Statewide priorities, in the Gap and attainability chapter.
- Both program area and strategic processes, the Strategic framework chapter.

Overall program functionality. The state's proposed program ensures that new systems demonstrate TMF capacity is addressed in the "New Systems" subsection of section 8.3 Water system lifecycle.

C.2 Existing system capacity

Solicitation and consideration of public comments. Appendix B addresses:

- How we solicited public comment on the program elements listed in §1420(c)(2)(A-F) of the SDWA, as amended in 1996 and in 2018 through AWIA.
- The stakeholder involvement process, including the input we received.
- How the state evaluated and integrated public comment and stakeholder input on program elements.

Additionally, future feedback from stakeholders and the public is addressed in:

- The Evolving environment chapter, demonstrating the state's ongoing commitment to considering the industry's needs as part of the state's capacity development strategy's implementation.
- Section 13.5 Consumer engagement, making a commitment to increased interaction with the people ultimately intended to benefit from our work.

Program elements. The state considered the appropriateness of each of the following elements in deciding whether to include it in the state's strategy.

- **Methods or criteria that the state will use to identify and prioritize provision of capacity development services.** A water system must meet three conditions to use the assistance provided by state and sub-state agencies.
  - There is a significant TMF deficiency to avoid or address.
  - There is an effective intervention provided by the state or sub-state agency.
  - Water system personnel are willing and able to use the resources they are provided.

  When it comes to addressing an existing deficiency, we will always prioritize the system to end the public health threat. However, if a deficiency can still be avoided, we find the willingness or ability of water system personnel is the controlling factor. Consequently, we prioritize SDWA violations and sanitary survey significant deficiencies and significant findings[xxv], then rely on water systems to self-identify that they are motivated to make changes to their operations. To improve this strategy, we also pursue funding to increase local drinking water surveillance by LHJs. Ultimately, our prioritization is informed by the

spectrum of water system capacity and addressed in section 7.3 Water system capacity and risk.

- **Barriers that encourage or impair capacity development.** Knowing what barriers public water systems perceive is a source of critical information. We asked stakeholders at our Drinking Water Advisory Group (DWAG) and received input documented in the capacity development barriers and incentives subsection of section B.2 Input. Our response to their input is the incentives and barriers subsection of section 5.2 Attainability.
- **Using authority and resources for compliance, encourage partnerships, and assist training and certification of operators.** These concepts are deeply embedded in our capacity development strategy and addressed in section 7.4 Interventions and preferences in the subsection addressing capacity development interventions.
- **Baseline.** The evaluation of program data is a major function set within the strategic framework. Documentation of industry baseline achievement will be the purpose of the landscape assessment. We will use it as the historical baseline for future policy development efforts. Specific program measurables and any newly developed policy will be used to inform resource, strategy, and timeline decisions while setting statewide program goals.
- **Interested parties.** We identify many interested parties throughout the document based at least in part on the degree to which they are:
  - Advisors listed in section 3.1 Sensing the evolving environment.
  - Responsible agencies and collaborative partners, documented in section 5.3 Partnerships.
  - Additional stakeholders, noted in section B.1 Communications program.
- **Asset management.** ODW currently provides both encouragement and assistance to public water systems and certified operators using multiple intervention strategies. We address how we will encourage and assist water systems to engage in asset management in section 11.3 Asset management.

Strategy. We state why we believe this strategy best serves the people of Washington in the Strategic basis section of chapter 2.

Implementation. While we currently implement the functions of the strategic framework, our intention is to focus on making directed improvements within each of its functional areas, stated in section 1.3 How this document will be used.

- **Current efforts.** We are currently working on efforts to increase office efficiency listed in section 10.4 Continual improvement.
- **Future implementation.** Because our implementation is embedded in each of the program areas, future strategy implementation is strongly driven by the effort to update plans based on the new tools being developed. We list the tools in section 3.3 New tools, with greater detail provided in each of the future implementation chapters: Chapter 11

Financing, Chapter 12 Environment, and Chapter 13 People. We will pursue other potential outcome enhancements listed in the potential state responses table in section 5.2 Attainability.

- **Ongoing discovery.** The framework is designed around the inevitability that we will discover new challenges and opportunities and water system capacity will improve over time. We address plan updates as part of our continual improvement strategy, articulated in Chapter 2 Strategic framework. Individual program area improvement is addressed in section 6.2 Goalsetting. Statewide priorities are updated due to priorities developed in Chapter 5 Gap and attainability analysis.

C.3 Asset management

Current asset management approach. Asset management is discussed in section 11.3 Asset management. While we do not always use the same terms as are listed in the federal worksheets, the section addresses, in detail:

- **Promotion and assistance.** In differentiating between promotion and assistance we define:
  - **Promotion** is any intervention that increases the likelihood that a water system will engage in asset management.
  - **Assistance** is any intervention that increases the likelihood that the resulting effort will improve system TMF capacity.

  Consequently, requiring asset management as part of a water system planning document is promotion. Providing guidance on asset management techniques is assistance. The specifics are listed in the Interventions subsection of section 11.3.
- **Training.** Training is addressed as part of the "Technical Assistance" and "Passive" interventions. See also section 7.4 Interventions and preferences for how we differentiate between them.
- **Enforcement.** While we do not typically use asset management as part of enforcement, a system may be required to produce an asset management program as part of a comprehensive compliance document, as described in section 11.3.
- **Funding.** Funding for asset management is called a financial assistance intervention.
- **Regulatory.** Regulatory interventions are referred to as "Compliance Assurance" in section 11.3. Additionally, the planning requirements on all Group A systems include asset management. See Appendix A under "Develop and implement a water system plan" and "develop and implement a small water system management program."
- **Technical Assistance.** In section 11.3, we also address technical assistance as a "Technical Assistance" intervention.
- **Other.** All interventions are addressed in the Interventions subsection of section 11.3.
- **Report to the Governor.** Asset management's role in the triennial gubernatorial report is addressed in section 4.3 Reporting.

- **Satisfying AWIA.** The capacity development strategy satisfies the requirements of the America's Water Infrastructure Act, as demonstrated in the Encouragement and assistance subsection of section 11.3.

Stakeholder involvement. Stakeholders were asked specifically about the future of asset management involvement. We addressed their responses throughout Appendix B. We focus on the timeline for stakeholder involvement at the conclusion of section B.3 Consideration.

Barriers. Section 11.3 Asset management characterizes the breadth of asset management encouragement and assistance we provide. We already satisfy federal requirements for encouragement and assistance. Consequently:

- **Existing and anticipated barriers.** ODW has no barriers to AWIA compliance.
- **Addressing barriers.** No additional effort is necessary to achieve compliance.

Asset management strategy. Asset management is an important topic within our capacity development strategy. We mention it in multiple locations throughout the strategy document and fully address it in section 11.3 Asset management.

- **Asset management integration.** The state already performs encouragement and assistance required under AWIA. We integrate them into all intervention types as demonstrated in the Interventions subsection of section 11.3. Asset management enhances implementation by creating greater confidence that important infrastructure maintenance issues are addressed, especially during the DWSRF allocation process.
- **Five core questions.** We use the five core questions as part of our water system encouragement and training activities. For example, *Asset Management for Small Water Systems 331-445* includes the five core questions as its organizing principle. For more information, see the subsections beginning with The Five Questions in section 11.3.
- **Strategic basis for asset management.** We use a wide variety of tools to encourage and assist in the use of asset management.
    - The use of all intervention types (see Interventions in section 11.3).
    - The requirement to include asset management elements within all group A water system planning documents.
    - ODW's four approaches to engage water systems in asset management (see Approaches in section 11.3)

  Together, they constitute a complete strategy. We do, however, note that asset management as currently envisioned does not adequately address environmental justice and equity issues. We will need to revise it to conform with current standards.

- **Weakest activities.** We address weaknesses in both asset management as a strategy and as implemented in the Weaknesses subsection of section 11.3.
- **Future plans.** Because programs are implemented through program plans, we will integrate specific initiatives into multiple program areas, such as planning, water system

capacity, and drinking water state revolving fund. Examples of intended updates are listed in the Weaknesses subsection of section 11.3.

Endnotes

[i] Section 1, chapter 403, Laws of 1995, https://lawfilesext.leg.wa.gov/biennium/1995-96/Pdf/Bills/Session%20Laws/House/1010-S.sl.pdf.
[ii] "Municipal Water Supply—Efficiency Requirements," downloaded on November 29, 2022 from https://lawfilesext.leg.wa.gov/biennium/2003-04/Pdf/Bills/Session%20Laws/House/1338-S2.SL.pdf.
[iii] Source: Sentry NextGen, Water System Statistics Report, August 26, 2022.
[iv] Source: Sentry NextGen, Water System Statistics Report, August 26, 2022.
[v] Source: Sentry NextGen, Water system full time population, August 24, 2022.
[vi] April 1, 2022 Population of Cities, Towns, and Counties from https://ofm.wa.gov/sites/default/files/public/dataresearch/pop/april1/ofm_april1_population_final.pdf.
[vii] Transformational Plan: A Vision for Health in Washington State (2022-2024), downloaded from https://doh.wa.gov/about-us/transformational-plan on August 28, 2022.
[viii] ODW Publications/Forms, https://fortress.wa.gov/doh/odwpubs/Publications/, as of August 28, 2022.
[ix] RCW 43.20.050(2).
[x] "Proposed Revision to Enforcement Response Policy for the Public Water System Supervision (PWSS) Program under the Safe Drinking Water Act and Implementation of the Enforcement Targeting Tool," December 8, 2009, downloaded from https://www.epa.gov/sites/default/files/2015-09/documents/drinking-water-erp-2009.pdf on August 29, 2022.
[xi] Chapter 34.05 RCW.
[xii] Sync's Introductory Guide to Value Planning is available at: https://deptofcommerce.app.box.com/v/SyncValuePlanningGuide, downloaded on November 14, 2022.
[xiii] "Cash Reserve Policy Guidelines," downloaded on December 19, 2022 from https://www.awwa.org/Portals/0/AWWA/ETS/Resources/awwacashreservepolicynew.pdf.
[xiv] RCW 43.21C.020(3).
[xv] RCW 43.21C.020(2).
[xvi] Section 1, chapter 316, Laws of 2021 downloaded from https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/Session%20Laws/Senate/5126-S2.SL.pdf on August 30, 2022.
[xvii] "Preparing for a Changing Climate: Washington State's Integrated Climate Response Strategy" downloaded from https://apps.ecology.wa.gov/publications/documents/1201004.pdf on November 23, 2022.
[xviii] Data from this section, "U.S. Energy Information Administration - EIA - Independent Statistics and Analysis" downloaded on August 25, 2022, from https://www.eia.gov/state/?sid=WA#tabs-4. Figures may not add due to rounding.
[xix] Chapter 70A.02 RCW.

[xx] "Title VI, Civil Rights Act of 1964" downloaded on November 23, 2022 from https://www.dol.gov/agencies/oasam/regulatory/statutes/title-vi-civil-rights-act-of-1964.
[xxi] "Executive Order 13166" downloaded from https://www.justice.gov/crt/executive-order-13166 on November 23, 2022.
[xxii] "Executive Order 12898" downloaded from https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf on November 23, 2022.
[xxiii] SMAs willing to take ownership of systems which have not obtained their operating permit or are classified in the red operating permit category pursuant to chapter 246-294 WAC, may be allowed a "special provision" whereby they are given time to bring the system into regulatory compliance. WAC 246-295-110(1), part.
[xxiv] RCW 49.60.010.
[xxv] A significant finding is a problem that imparts a serious but less direct public health threat than a significant deficiency. These include a lack of access or information, which interferes with the surveyor's assessment into whether a significant deficiency exists; or a defect or problem, which, if left unaddressed, indirectly creates a significant risk to the physical safety, security, or reliability of the public drinking water supply. See our DOH Publication 331-486 *Field Guide: Information for Washington's Third Party Sanitary Surveyors*. Significant findings are addressed in addition to significant deficiencies under 40 CFR 141.403(a)(4).