

Report to the Legislature
**Small Public Drinking
Water Systems**

Fulfilling Requirements from 2008 Session,
Enrolled Substitute House Bill 2765

July 2009

DOH 331-437



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Contents

Executive Summary	1
Background	5
Regulatory framework	6
Where people get their water	7
Recent trends in the number of public water systems.....	8
Ownership of small water systems	9
Regulatory role of the Utilities and Transportation Commission.....	10
Compliance issues for small water systems	11
More violations seen in privately owned water systems	11
Compliance and Group B public water systems	11
Satellite management of small water systems	12
Limitations of the satellite management program	12
Satellite management agencies and Group B water systems	13
Policy Analysis and Recommendations	14
Reduce the growth of public water systems	15
Ensure water systems have an ownership structure that positions them for success	17
Improve department oversight of financial health and align resources to assist water systems in need	19
Rates and Oversight Challenges	19
Create a new tool that ranks water system capacity	20
Evaluate new ways to promote financial awareness.....	20
Link third-party financial assistance with capacity assessment score	21
Evaluate the feasibility of requiring financial indicators in consumer confidence reports.....	22
Propose to allow limited principal forgiveness for DWSRF loans.....	22
Develop a more targeted, focused approach to compliance	23
Future considerations	24
Small Systems not paying their “fair share”	24
Strengthen the existing legal framework for addressing failing water systems.....	24
Appendices	28
Appendix A: Sample communities that would benefit from consolidation	28
Woodland Mobile Home Park and Woodland Foursquare Church, Clark County	29
Bar Development and neighboring water systems, Douglas County	31
Eltopia Water Association, Franklin County	32
South Keyport Heights, Kitsap County	34
Bertrand Creek and Northwood areas, Whatcom County	35
Appendix B: Potential Water System Acquisition and Rehabilitation Program Projects	38
Appendix C: Issues affecting the number of water systems	42
Appendix D: Section 2009 of Engrossed Substitute House Bill 2765	46

Executive Summary

Since 2003, the Washington State Legislature has appropriated more than \$18 million toward failing small water systems to address urgent health and safety needs. To seek recommendations on how to prevent this need for state intervention, the 2008 Legislature directed the Department of Health (the department) to “*conduct a statewide review of small public drinking water systems that have or may in the future require significant state resources to resolve urgent threats to public health and safety.*”

The Environmental Protection Agency (EPA) defines small water systems as those water systems that supply drinking water to fewer than 1,000 households. These systems face many technical, managerial, and financial challenges that affect their capacity to provide safe drinking water to their customers:

Technical

Compared with larger water systems, small water systems have more water quality violations and are more likely to fail to properly monitor for contaminants, make timely repairs, or replace faulty materials. This can lead to poor water quality, water system unreliability, and failing water system infrastructure, all of which can pose significant public health risks to their customers.

Managerial

Water system owners and board members of small water associations often do not fully understand their responsibilities to ensure the safe and reliable delivery of drinking water to their customers.

Financial

The most pressing problem for small water systems is financial viability. Their smaller rate base puts them at a significant financial disadvantage. They must bear relatively higher per-capita costs to meet regulatory requirements and to maintain infrastructure, because fewer customers share the expenses.

Understanding the inherent challenges facing small water systems, the policy direction from the Legislature and State Board of Health over the past 30 years has been to:

- Limit the creation of new water systems whenever possible.
- Direct new water system applicants to a satellite management agency to own or operate the newly created water system.

To improve state oversight of small water systems, the department proposes building upon the past and making the following changes to state policy, State Board of Health regulations, and agency practices:

Reduce the growth of small public water systems.

- *The department recommends that the legislature amend chapters 70.119A and 43.20, Revised Code of Washington (RCW), to require new water system developers to first request service from an existing utility that serves the area before seeking approval to create a new Group A community water system. The department would approve a new water system only if an existing water system could not provide service.*

Ensure new water systems have an ownership structure that positions them for success.

- *The department recommends that the legislature amend RCW 70.119A.060, RCW 70.119A.110, and RCW 70.116.134 to require all new Group A community water systems to be owned by a satellite management agency, if one is available. If a satellite management agency is not available, require a public entity to own the new water system.*
- *The department recommends that the legislature amend RCW 70.119A.060 and RCW 70.116.134 to eliminate satellite management agency requirements for Group B (water systems with fewer than 14 connections) and Group A non-community water systems.*
- *The department recommends that the legislature increase funding for the Water System Acquisition and Rehabilitation Program. Funding provided through this program helps small, troubled systems consolidate with larger, well-operated municipal water systems.*

Improve department oversight of the financial health of water systems, and align resources to assist water systems in need.

- *The department recommends that the State Board of Health amend chapter 246-290 WAC to require water systems to include financial viability indicators in their annual consumer confidence reports.*
- *The department recommends that the legislature, the department, and Utilities and Transportation Commission (UTC) evaluate potential changes by researching other states' regulatory oversight of rate setting for water systems.*
- *The department will create a new financial capacity assessment tool to evaluate water systems' technical, managerial, and financial capacity.*
- *The department will modify the water system planning program to help small water systems improve their financial viability.*
- *The department will expand and improve delivery of financial technical assistance through third-party providers.*
- *The department will amend chapter 246-296 WAC to allow limited principal forgiveness for some Drinking Water State Revolving Fund loans.*

Future Considerations

The department recommends that the legislature amend RCW 70.119A.110 to increase the base fee for water systems to obtain an operating permit that would include a variable, declining per-connection charge for every size system. Potentially, the fee could be structured to provide a cost-incentive for systems to be well-managed, and in full compliance with state rules.

The department believes the early intervention strategies identified in the report will reduce the number of failing water systems. However, some water systems will inevitably fail. Changes to receivership authorities could strengthen the existing legal framework for addressing failing water systems.

The department recommends a legislative review or study to determine which changes would strengthen the receivership statute. The study should include participation from the department, the Attorney General's Office, local government, UTC, and other stakeholders.

Background

Congress knew when it passed the federal Safe Drinking Water Act in 1974 that small water systems would face significant challenges meeting the requirements. The Congressional Record includes the following¹:

- “It is evident that what is a reasonable cost for large metropolitan (regional) water systems may not be reasonable for a small water system.”
- “The quality of the nation’s drinking water can only be upgraded if the water systems that provide water to the public are organized to be most cost-effective.”
- “Larger water systems are to be encouraged and smaller water systems discouraged.”
- “Some small water systems will be unable to promptly comply with all primary regulations.”

Since 2003, the Washington State Legislature has appropriated more than \$18 million to address urgent health and safety needs for failing small water systems. To seek recommendations on how to prevent the need for state intervention, the 2008 Legislature directed the Department of Health (department) to:

“Conduct a statewide review of small public drinking water systems that have or may in the future require significant state resources to resolve urgent threats to public health and safety. A small water system is less than one thousand connections (group A or group B water systems). The department must evaluate case studies, the two regulatory frameworks in place for small systems, and provide a report to the appropriate legislative committees and the office of financial management with recommendations on early interventions or changes to the regulatory structure that could prevent such problems in the future.

“The report shall identify the communities that would benefit from consolidation, regionalization, or other measures that will lead to improved small system regulatory compliance, long-term public health protection, and sustained economic vitality in communities served by small systems.” (Section 2009, ESHB 2765)

In December 2008, the department submitted a progress report to the legislature outlining three primary issues to address to prevent future small water system problems:

- Stop proliferation of small water systems.
- Improve financial viability for small water systems.
- Obtain better tools to address failing water systems.

Since then, the department has formed work teams to better define potential policy changes and early intervention strategies. The department has met with staff from Department of Ecology

¹ House Report No. 93-1185, *The Committee on Interstate and Foreign Commerce, Section 1412 - National Drinking Water Regulations, Legislative History, Public Law 93-523, Safe Drinking Water Act.*

(Ecology), Community, Trade and Economic Development (CTED), and the Utilities and Transportation Commission (UTC) to discuss the policies that affect their missions. Staff also met with a subcommittee of the Water Supply Advisory Committee to hear stakeholder input about potential policy changes. This report includes recommendations based on these discussions.

Case Study: Rock Ridge Water Association – *The high cost of state help*

The Rock Ridge Water Association is a Group B water system outside of Yakima serving six households and 16 people. The association's well went dry in September 2005, and it hauled water by truck for the next 13 months.

In late 2005, Yakima County Public Services Department applied for a grant on behalf of the association through Ecology's Emergency Drought Assistance Program.

The emergency drought fund grant paid for \$235,000 of the \$270,000 total cost to construct a new well and storage reservoir. *The grant paid the equivalent of \$39,166 per household.*

Regulatory framework

Washington law (RCW 70.119A.020) defines a public water system as **any water system, except** a single-family residence and a water system with four or fewer connections, all of which serve residences on the same farm. Under state law, public water systems range from a few homes sharing a well to utilities that deliver millions of gallons of water each day to tens of thousands of people.

Chapter 246-290, Washington Administrative Code (WAC), classifies **Group A** public water systems as those serving 15 or more households or equivalent, businesses with 25 or more customers per day, or facilities such as schools that serve 25 or more people per day. The department oversees Group A water systems by carrying out the federal Safe Drinking Water Act under a formal primacy agreement with the U.S. Environmental Protection Agency (EPA). To retain primacy and the federal funding received to carry out the program, rules adopted by the State Board of Health governing Group A water systems must be at least as stringent as federal rules.

Chapter 246-291 WAC classifies **Group B** public water systems as those serving two to 14 households or equivalent, or very small businesses with fewer than 25 customers per day. These water systems are not subject to the requirements of the federal Safe Drinking Water Act. Because of that, they are not included in the primacy agreement or funding allocation from EPA. There is wide variability in how the local governments implement the Group B rule across the state. The department has provided pass-through state general fund dollars to many local health agencies to approve and/or oversee Group B water systems, though the legislature eliminated those funds in the 2009-2011 biennial budget.

Based on legislation passed in 2009, the State Board of Health has the flexibility to adopt rules for Group B water systems that require the department only to approve the initial water system design, with no ongoing oversight.

Table 1 describes some of the key requirements for Group A and Group B water systems. Group A water systems have much more stringent monitoring, reporting and inspection requirements than Group B water systems.

Table 1. Differences between Group A and Group B regulatory frameworks

Group A (Federal Safe Drinking Water Act)	Group B (RCW 70.119A)
<ul style="list-style-type: none"> • Monthly water quality sampling • Monitoring for 100+ contaminants • Certified operator • Inspections every 3-5 years • Annual operating permit • Demonstration of financial, technical and managerial capacity 	<ul style="list-style-type: none"> • Annual coliform bacteria sampling • Sampling for nitrate once every three years

Where people get their water

Consistent with EPA definitions, the department uses the term “small water system” to mean water systems serving fewer than 1,000 households. In this report, “large water system” means water systems serving 1,000 or more households.

This report uses another regulatory distinction – community and non-community water systems. Community water systems serve full-time residences, such as single-family homes, apartments, condominiums and other structures that people use as residences. Non-community water systems serve businesses, schools, hotels, vacation rentals, and similar facilities.

More than 75 percent of people in Washington get their water from 223 large Group A community water systems that collectively serve about five million people (see Figure 1).

In contrast, about 2,000 small Group A community water systems provide drinking water to 8 percent of Washington households, about 550,000 people; and roughly 13,000 Group B water systems provide drinking water to just 2 percent of Washington households, or about 110,000 people.

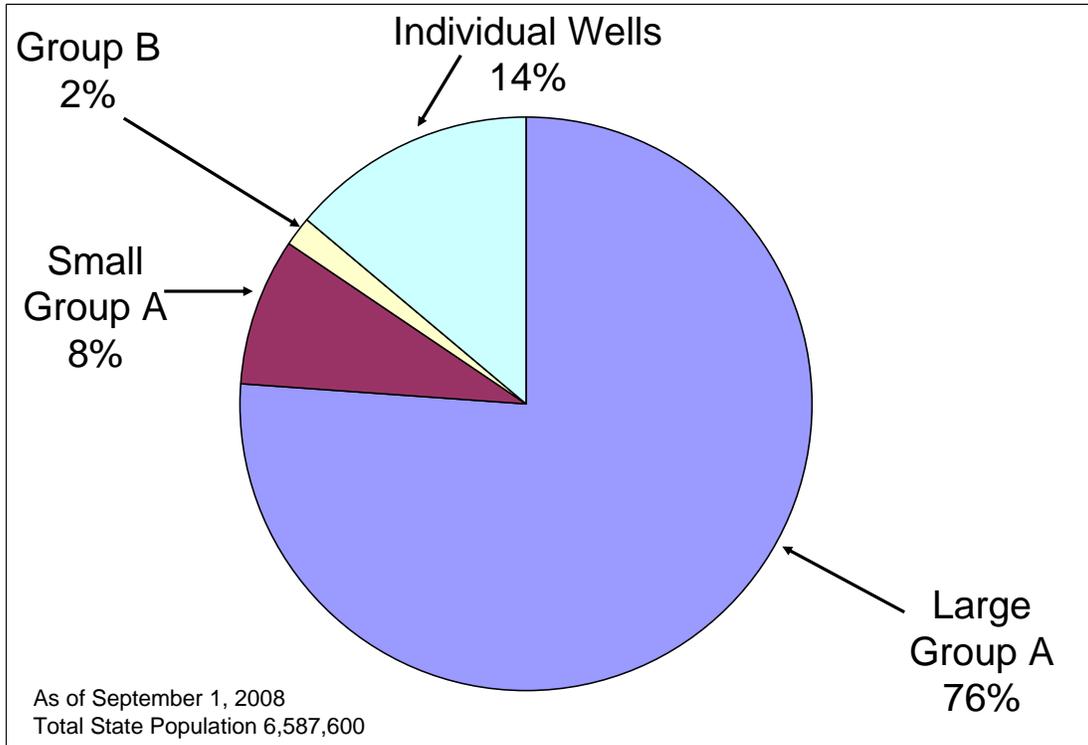


Figure 1. How households in Washington get their drinking water. Data from the department's database and Office of Financial Management (2008).

Recent trends in the number of public water systems

The total number of public water systems has increased substantially over the past 15 years. Most of this growth represents an increase of about 3,000 new Group B water systems. However, in 1996, the department adopted a policy that exempts two-connection water systems from the Group B regulations. So the number of Group B systems continues to increase, but at a slower rate. (Figure 2)

The number of Group A public water systems has remained relatively stable. In fact, about 150 Group A water systems were removed from the department's inventory in the past five years. Some Group A water systems became Group Bs (because they serve fewer people); others consolidated with a larger water system, or supplied a business that closed.

Because of growth in urban areas, the proportion of the state's households served by Group B water systems keeps dropping. In 1991, small Group A and Group B water systems together served about 20 percent of the state's population, compared to only about 10 percent today.

The department projects an increase in demand for new Group Bs as water rights become scarcer and new, small developments become the trend in rural areas.

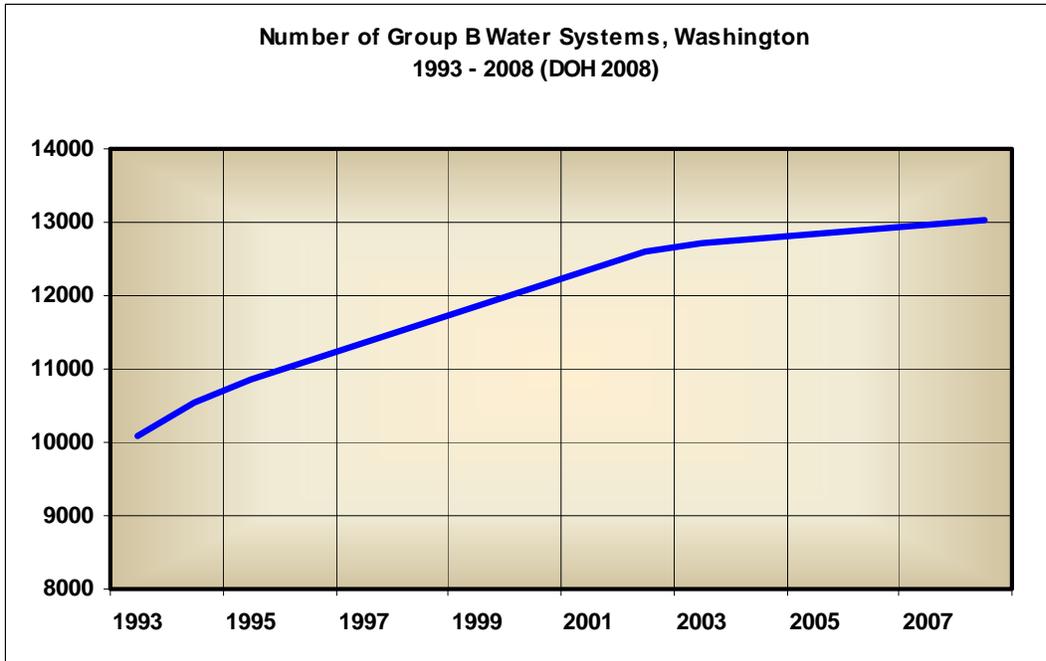


Figure 2. Group B public water systems 1993-2008. Data from the department's database.

Ownership of small water systems

Almost 80 percent of small Group A community water systems are privately owned: 27 percent are owned by private investors, and 52 percent are owned by private nonprofit associations (such as homeowners' associations). In contrast, municipalities and other public entities, such as public utility districts, own 89 percent of large Group A community water systems.

Of all community water systems in Washington, about 4 in 10 are private nonprofit-owned water systems with fewer than 100 connections.

Ownership of non-community water systems reflects use. Most private non-community water systems serve businesses, such as restaurants and stores. Schools and campgrounds are common types of publicly owned non-community water systems.

The creation of new public water systems typically satisfies a condition necessary to accomplish another purpose, such as land development or a business operation. Developers most often transfer ownership to a homeowner's association, which must then try to comply with complex drinking water requirements. Less commonly, developers retain ownership of the water system. In these circumstances, the land developer becomes the entity responsible for ensuring the community has safe and reliable drinking water.

Regulatory role of the Utilities and Transportation Commission

The Washington Utilities and Transportation Commission (UTC) provides economic regulation and consumer protection for private investor-owned water utilities that do one of the following:

- Serve more than 100 connections.
- Generate annual revenue in excess of \$471 per connection.

Figure 3 shows the ownership breakdown of Group A community and non-community water systems. Currently, UTC regulates 65 utilities representing a market share of about 2 percent of Washington households. The national average for private investor-owned utility market share is 15 percent.

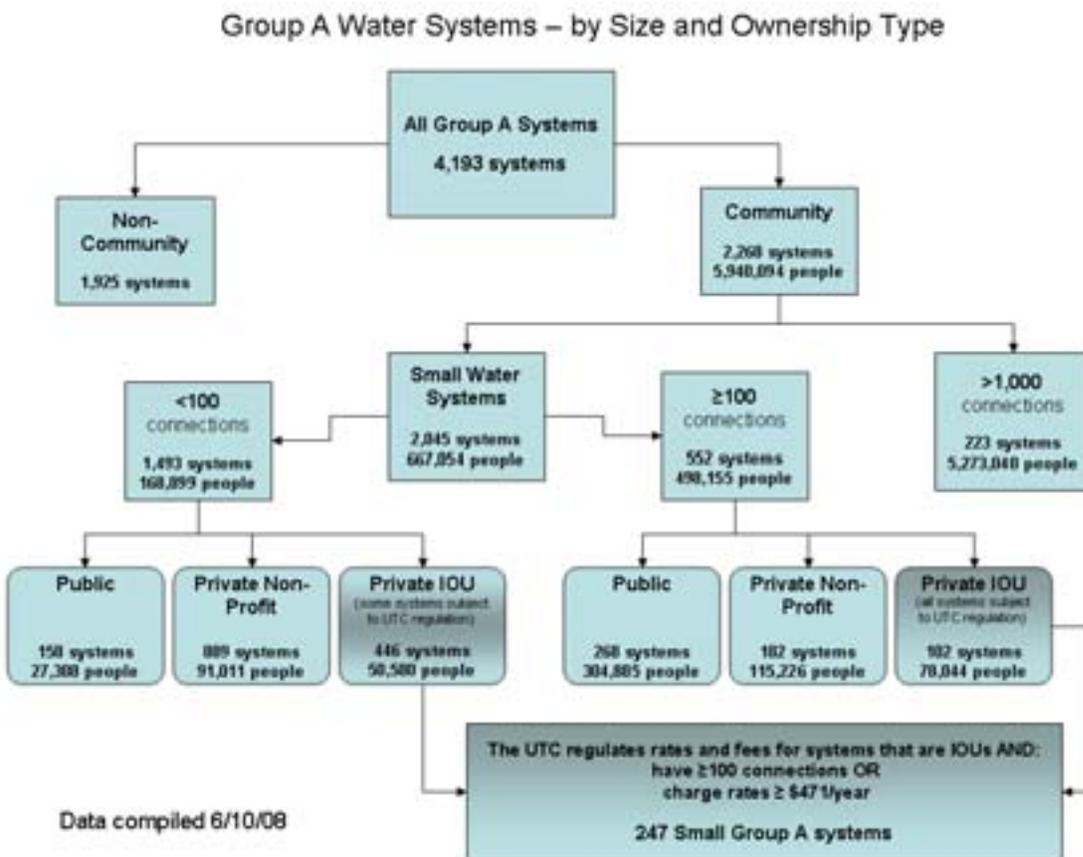


Figure 3. Number of public water systems separated by ownership and size. Data from the department's database (2008) and UTC (2008). "IOU" means an investor-owned utility.

Compliance issues for small water systems

The department measures a water system's success by collecting data and assessing compliance. Some data, such as a water sample that is positive for *E. coli* bacteria, indicate a direct threat to public health. Other data highlight subtle problems with the overall viability of a water system.

The department tracks compliance for all Group A water systems and reports violations to EPA. Small water systems generate a disproportionate number of monitoring and water quality violations. Many are not meeting even basic water quality requirements.

In 2007, small water systems accounted for almost all violations of:

- Coliform (bacteria) monitoring – 99.5 percent of all violations for failure to monitor.
- Coliform standards – 98 percent of all violations with presence of coliform bacteria in a sample.
- Nitrate monitoring – 95 percent of all violations for failure to monitor.
- Nitrate maximum contaminant level – 100 percent of water systems exceeding maximum contaminant level.

(Coliform bacteria indicate that contamination is entering the water system. Nitrate contamination can be an acute health hazard for pregnant women and infants.)

The department takes formal compliance action toward a Group A water system that:

- Repeatedly violates a monitoring requirement.
- Fails to resolve a water quality violation within a certain period.
- Fails to maintain the proper level of operator certification.
- Fails to schedule a water system inspection or follow-up on deficiencies identified.

More violations seen in privately owned water systems

The data also suggest a correlation between the type of ownership and the small water system's record of providing safe and reliable drinking water.

The rate of non-compliance with drinking water rules was 30 percent higher for small privately owned community water systems than for small publicly owned community water systems. Between 2003 and 2007, 83 percent of the 668 compliance actions the department issued were against privately owned water systems.

Compliance and Group B public water systems

The department does not track compliance with water quality monitoring requirements for the state's 13,000 Group B water systems. It does not have adequate resources to do so.

In 2001, the legislature appropriated money to assess the condition and status of Group B water systems. Working with the department, local health agencies used this funding to conduct 3,230 site inspections. Important findings from the inspections included:

- 45 percent of the water systems surveyed lacked a properly built and screened well vent, allowing potential contaminants into the well.
- 45 percent of the water systems surveyed did not sample for coliform and nitrate as required.
- 31 percent of the water systems surveyed had biological or chemical contaminants located within 100 feet of the source, including wellheads and surface water intakes. A minimum 100-foot setback is essential for public health protection.

From 2001 to 2009, the department provided funding to local health jurisdictions to oversee and provide technical assistance to Group B water systems. However, the 2009 state budget eliminated all Group B water system funding.

Satellite management of small water systems

In 1995, the legislature adopted RCW 70.116.134 (Satellite System Management Agencies) to improve management and compliance for small water systems. The department uses this authority to approve and regulate satellite management agencies.

The legislature also obligated all new Group A and B water systems to be owned *or* managed by an approved satellite management agency, *if one is available* (RCW 70.119A.060).

About 50 approved satellite management agencies now operate in Washington. They manage or own only about 18 percent of the water systems created since the law passed. Of those, they own about half and manage the rest:

- **Manage:** 313 community and 106 non-community Group A water systems (419 total)
- **Own:** 321 community and 28 non-community Group A water systems (349 total)

Satellite management agencies also operate 1,108 Group B water systems (See page 13).

Limitations of the satellite management program

The law does not obligate either the satellite management agency or the water system to continue the initial contract. Many water systems end their contracts because of the expense or for other reasons. Some satellite management agencies discontinue service to unprofitable or uncooperative water systems.

The department does not have the authority to supervise and hold satellite management agencies accountable for the fees they charge or the services they render. Even if it did, the effort involved in enforcing the requirement would be overwhelming.

If a satellite management agency only manages a water system, the scope of the contract varies, based on the satellite management agency’s capabilities and how willing or able the water system is to pay. The satellite management agency also has no direct ability to ensure the water system’s long-term financial viability. The water system’s owner or board of directors makes decisions about rates and asset management.

Water systems with satellite management agencies that only **manage** their water system:

- Incur more monitoring violations, and are issued more enforcement documents, than water systems **owned** by satellite management agencies.
- Issue more than twice as many health advisories (such as telling their customers to boil water because contamination has occurred) as water systems **owned** by satellite management agencies.

Satellite management agency-owned water systems are successful because the “manager” and “water system owner” are the same. In these cases, the satellite management agency has both the interest and the expertise to ensure water systems deliver safe and reliable water. (See Table 2)

Table 2. Total percentage of Group A community water systems with violations between January 1, 2007, and December 31, 2008. “SMA” means satellite management agency.

SMA Status	Number of Water Systems	Coliform Monitoring Violations	Nitrate Monitoring Violations	Water Systems Issued Enforcement Documents	Water Systems Issuing Health Advisories
No SMA	1,634	12%	15%	10%	6%
Manage	313	8%	5%	5%	8%
Own	321	2%	3%	3%	3%

Satellite management agencies and Group B water systems

Satellite management agencies manage 1,108 Group B water systems. That’s fewer than 10 percent of all Group B systems. Local health jurisdictions and public utility districts have said that most satellite management agencies are not interested in managing Group B water systems. Group B owners may also be reluctant to hire satellite management agencies because they are not required to do so.

Policy Analysis and Recommendations

The legislature directed the department to identify early interventions or changes to the regulatory structure that could prevent small water system problems that require the state to spend public resources to fix.

Three previous efforts to describe and address small water system problems led to some policy and program changes. However, many of the problems small water systems now face remain similar to those identified in these reports:

- *Small Water Systems: Problems and Proposed Solutions—Report to the Legislature* (1991).
- *Small Water System Advisory Committee—Prioritized Summary* (1998).
- *Recommendations Regarding Affordability and Sustainability of the State’s Drinking Water Systems* (2003).

The department believes that policy changes and early intervention strategies can reduce the number of failing small water systems. Despite the department’s early interventions, some small water systems will still fail. A water system’s failure to achieve and maintain economic sustainability and good governance can happen despite advice, technical assistance, compliance, and restructuring efforts. In some cases, water systems will fail because their consumers choose not to pay the full cost of delivering safe and reliable water, or cannot pay the costs of running an inefficient water system.

Because of the inherent challenges in running small water systems, the department believes that the best approach is to prevent the creation of these water systems whenever possible. Small water systems are often created for reasons beyond the department’s control. However, the state could **reduce** the creation of small water systems.

The proposals and recommendations in this report fall into four general categories:

- Reduce the number of public water systems.
- Ensure water systems have an ownership structure that positions them for success.
- Improve department oversight of financial health, and align resources to assist water systems in need.
- Strengthen the existing legal framework for addressing failing water systems.

Recommendations include statutory changes combined with options the department can address using existing authorities -- by amending department or State Board of Health rules, or by shifting program priorities. The following statutory authorities are noted in this report:

- Chapter 70.116 RCW, Public Water System Coordination Act
- Chapters 90.44, 90.54, and 90.03 RCW, the State’s Water Code
- RCW 70.116.134, Satellite System Management Agencies

- RCW 70.119A, Public Water Systems
- RCW 43.70.195, Receivership
- Chapter 43.20 RCW, State Board of Health

Reduce the growth of small public water systems

Developers create most water systems to support land development proposals or new businesses. Local governments decide whether to approve each new development or business.

In response to increasing numbers of water systems, the legislature and the State Board of Health over the past 30 years developed policy intended to:

- Steer water system applicants toward an existing water system and limit the creation of new water systems whenever possible.
- Direct new water system applicants to an experienced water system or satellite management agency that could own the newly created water system.
- Provide effective tools for the department, UTC, and Ecology to permanently restructure water systems when owners fail to provide basic safe and reliable water service.

The department supports each of these policy goals. Overall, the cost of eliminating an existing water system can be more expensive than the original cost of construction. We will continue to promote consolidation of existing small water systems and reducing creation of new small water systems whenever possible.

Statutory Recommendation 1: Amend chapters 70.119A and 43.20 RCW to require new water system developers to first request service from an existing utility that serves in the area before seeking department approval to create a new Group A community water system.

The Public Water System Coordination Act of 1977 (Coordination Act, RCW 70.116) seeks to prevent the creation of new public water systems by first directing an applicant to an existing water system. The Act gives local governments the option of initiating and establishing a Coordination Act planning area. If a proposed water system is in a Coordination Act area and within an existing water system's service area, the existing water system has the option to provide service to the applicant. Figure 4 shows Coordination Act areas in Washington.

Local government is responsible for implementing ongoing coordination among water utilities and for coordinating new water service. The program's success depends on the capacity and interest of local government to refer applicants to existing utilities for water service. Some local governments are more effective than others at implementing the Act's provisions.

Under Washington's Municipal Water Supply – Efficiency Requirements Act of 2003 (known as the Municipal Water Law), if an existing municipal water system meets minimum criteria, it has a duty to provide water service to an applicant upon request. There is *no obligation*, however, on

the part of the applicant to apply for water service, except within a Coordination Act area.

The Coordination Act requires applicants to seek service from an existing water system before developing their own water system. In contrast, the Municipal Water Law *obligates a water system to provide service* (subject to conditions) when an applicant requests it. Outside a Coordination Act area, there are *no statutory requirements* for an applicant to seek service from a water system.



Figure 4. Areas of the state planning under the Public Water System Coordination Act

Creating a statewide requirement for water system applicants first to seek service from an existing utility will help reduce the creation of new water systems.

However, many of the reasons small water systems are created are not within the department's control. New small water systems will continue to be created until the root causes, such as limited access to new water rights, are addressed. See Appendix C for a further discussion of water resource and local land use issues, and how they contribute to the creation of small water systems.

Reducing water systems: The Alabama experience

In 1978, Alabama recognized it could not oversee the state's 1,361 public water systems with the resources that were available. The state limited approval of new small systems, focused its efforts on consolidating existing systems and, worked with local governments to limit subdivisions that contributed to new water system creation.

By 1998, the state only had 745 public water systems.

Ensure water systems have an ownership structure that positions them for success

Statutory Recommendation 2: Require that all new Group A community water systems be owned by a satellite management agency, if one is available. If a satellite management agency is not available, require that all new water systems be owned by a public entity.

As described on pages 12-13 of this report, the satellite management agency statute (RCW 70.116.134) only partially meets its legislative intent:

- The satellite management agency requirement is enforced at the time of water system approval, but not afterward. Water systems can terminate their contract with the satellite management agency at any time. The department does not currently have resources to oversee water systems' private contracts and does not believe it is an appropriate role for the agency to oversee private contractual agreements.
- The department cannot supervise and hold satellite management agencies accountable for the fees charged and services rendered within available resources.
- Importantly, the water system owner or board of directors sets the direction for the water system. Satellite management agencies cannot effectively ensure long-term water system viability. The financial decisions and direction set by the board of directors, or by private water system owner or investors, determine if the water system will succeed or fail.

Requiring satellite management agency ownership, not just management, would support improved operations, public health protection, and long-term financial viability for each new community water system.

When a satellite management agency chooses not to own a new water system, the new community water system should be owned by a public entity. The department's data suggest that

public ownership provides better assurance for providing safe and reliable water than private ownership.

There are inherent challenges in this recommendation because there are only 50 approved SMAs in the state. The department believes that both Statutory Recommendations 1 and 2 are needed to create an incentive for existing SMAs to take on more water systems, or for new SMAs to come into the market. When a satellite management agency is not available, it could be challenging to turn over ownership to a public entity, or establish a new public entity (such as a water district).

Statutory Recommendation 3: Amend RCW 70.119A.060 and RCW 70.116.134 to eliminate satellite management agency requirements for Group A non-community, and all Group B water systems.

Group A non-community and Group B water systems are often unattractive for satellite management agencies to own or manage due to their small size. In addition, the 2009 Legislature eliminated funding for the Group B program and adopted legislation that allows the State Board of Health to reduce the level of regulatory oversight of Group Bs.

Statutory Recommendation 4: Increase funding for the Water System Acquisition and Rehabilitation Program

The Washington State Legislature created the Water System Acquisition and Rehabilitation Program (WSARP) in 2003. The program provides cost-share grants to well-managed, publicly owned water utilities to assist with the costs of acquiring troubled water systems and permanently fixing the problems.

Water utilities that acquire troubled water systems typically must update the water system's infrastructure, and sometimes must obtain a new water supply source. These utilities spend a large amount of their own money to improve the troubled water system. The availability of WSARP funds provides an incentive to take on challenging situations and ultimately ensures better public health protection.

The department completed a report in January 2009 that identified a biennial need for \$12 million for the Water System Acquisition and Rehabilitation Program (See Appendix B for the list of recommended projects to be funded with WSARP). The Legislature was not able to fund the program in the 2009-2011 biennium.

Improve department oversight of financial health and align resources to assist water systems in need

A review of the department’s federal and state authorities shows it has clear authority and obligation to address the financial viability of Washington’s drinking water systems. A challenge for the department is identifying an effective approach to doing so. Another is having sufficient resources to provide the additional oversight and technical assistance small systems need.

Federal Authority

Congress established broad direction for the development and implementation of the national Capacity Development Program in the 1996 federal Safe Drinking Water Act Amendments. Each statutory provision of the Capacity Development Program includes a financial component:

- States must ensure that all new community water systems and non-transient non-community water systems demonstrate technical, managerial, **and financial** capacity.
- States must develop and implement a strategy to assist public water systems in acquiring and maintaining technical, managerial, **and financial** capacity.

State Authority

The state authority regarding penalties and compliance for Group A water systems calls for the **assessment of financial viability** of public water systems:

“70.119A.100 Operating Permits - Findings

*(4) The operating permit requirements shall be administered by the department and shall be used as a means to assure that public water systems provide safe and reliable drinking water to the public. **The department and local government shall conduct comprehensive and systematic evaluations to assess the adequacy and financial viability of public water systems.** The department may impose permit conditions, requirements for system improvements, and compliance schedules in order to carry out the purpose of chapter 304, Laws of 1991” [emphasis added].*

Rates and Oversight Challenges

The department does not have statutory authority for public water system rate setting and does not view it as an appropriate role for the agency. UTC regulates rate setting for private, investor-owned public water systems over a certain size (see Figure 5 on page 10). UTC-regulated utilities operate fewer than 500 water systems, providing water to fewer than 2 percent of the state’s households. UTC budgets roughly \$500,000 annually for overseeing the rates and finances of about 65 private, investor-owned utilities.

In contrast, the department regulates about 1,800 Group A community water systems—not regulated by UTC—that provide water to 80 percent of the state’s population. To succeed in a

rate oversight role, the department would have to budget several million dollars annually and develop expertise well beyond its current role in drinking water safety.

In addition, countervailing forces are at play. UTC recently completed an internal report summarizing its regulatory approach toward private, investor-owned water systems, “Water Regulation Initiative Statement of Problem, Risk and Opportunity.” According to that report, a substantial part of UTC’s workload relates to customer complaints about water companies charging **too much**. Yet, the facts show that water systems that don’t charge adequate rates are in danger of failing.

Legislative Recommendation 1: Direct legislative staff, the department, and UTC to evaluate potential changes by researching other states’ regulatory oversight of rate setting for water systems.

The department and the UTC have been working together to explore how best to get financial assurance from private, investor-owned utilities that are regulated by the UTC. The department supports a goal of developing a source of funding that can be used if the water system fails, such as surety bonds or trusts.

Create a new tool that ranks water system capacity

EPA requires the department to develop and implement a capacity development program and strategies to help water systems maintain technical, managerial, and financial capacity to meet Safe Drinking Water Act requirements.

Currently, the department’s program concludes that a water system has “capacity” when it has:

- A “green” operating permit, meaning the water system is adequate for current uses.
- Completed planning documents.
- No significant enforcement actions.

These three indicators provide a rough sense of which water systems are currently providing safe and reliable drinking water. However, the measures do not help predict long-term financial certainty, nor do they help us to target technical assistance, education, and compliance tools.

The department looked at other states’ models. Other states score and rank water system capacity based on answers to questionnaires, which allows the states to provide technical assistance to those water systems most in need. Similarly, we will develop a scoring and ranking tool that better measures multiple aspects of technical, managerial, and financial capacity.

Evaluate new ways to promote financial awareness

The department uses its planning program to document whether a water system meets its technical, managerial, and financial capacity objectives. The rule requires Group A community water systems to complete either a water system plan or a small water system management program.

Water System Plan – This document must be completed by Group A community water systems that are new or expanding, or are directed by the department to complete a water system plan for other reasons. Financial viability requirements include providing a six-year budget, operations and maintenance plan, capital and emergency improvements plan, and a plan to fund operations and reserves (WAC 246-290-100(1)(a), (4)(j)(i-iv)).

Small Water System Management Program – This document must be completed by Group A community water systems that don't meet the water system plan requirements. Financial viability requirements include a six-year budget, a water system component inventory and assessment, and a list of planned improvements [WAC 246-290-105(1)(a), (4)(n) (4)(o) and (4)(t)].

To manage within its resources, the department requires that planning documents be submitted only when a water system hits a specific “trigger point.” Trigger points include but are not limited to changes that increase the size or use of a water system (expansion), or when a water system obtains a Drinking Water State Revolving Fund (DWSRF) loan.

While most large water systems are meeting state planning objectives, most small water systems are not planning at all. About 1,300 of the 2,045 small Group A community water systems are non-expanding and don't need to submit a plan to the department unless they hit a trigger point. The department is refining its planning program to target water systems that show warning signs. The goal is to provide water system owners or governing boards/commissions with financial technical assistance and training, such as:

- Computer templates and guidance that enable small water systems to complete financial information forms or spreadsheets. This would help water systems create budgets to manage their finances, and could increase the number of water systems completing plans.
- Periodically reviewing financial information and developing new tools as needed.
- Self-directed, interactive asset-management software and training. This would improve water systems' understanding of their long-term needs.

Link third-party financial assistance with capacity assessment score

The department contracts with the Rural Community Assistance Corporation (RCAC) to help small water systems build financial capacity. RCAC staff meets with water system boards and commissions and educates consumers. RCAC uses a “financial toolbox” to develop individual rate-structure options that meet the current and future needs of each water system.

Currently, water systems receive technical assistance based on referrals from the department. The department plans to develop a capacity assessment tool that better identifies which water systems are most in need of assistance, and the areas of water system capacity needing attention (technical, managerial, or financial).

Evaluate the feasibility of requiring financial indicators in consumer confidence reports

The federal Safe Drinking Water Act requires Group A community water systems to send out a yearly consumer confidence report that informs water system customers about the quality and safety of their drinking water.

Requiring financial information or capacity assessment scores in the consumer confidence report would help customers understand the real costs of their drinking water. The department believes this information could help customers understand why safe and reliable water is more costly than they think, and might encourage acceptance of rate increases. This direct contact with water system customers could also present the opportunity to make the link between a customer's property value and the condition of the water system that serves the property.

The State Board of Health should amend chapter 246-290 WAC to require water systems to include indicators of financial viability in their annual consumer confidence reports.

Propose to allow limited principal forgiveness for DWSRF loans

The Drinking Water State Revolving Fund (DWSRF) loan program provides low-interest loans to water systems for repairing and replacing infrastructure. The program sets funding priorities to address the most serious public health issues and to help water systems comply with drinking water regulations.

In its 12-year history, the DWSRF loan program provided \$279 million to fund 349 projects around the state. Small water systems were awarded loans totaling \$119 million.

The department believes sufficient capital now exists in the revolving loan fund to provide additional support to encourage water system consolidation. Currently, water systems that serve economically disadvantaged communities can receive interest-free loans.

The department plans to propose a rule change that provides flexibility to forgive a portion of the principal if they meet both of the following two conditions:

1. The community served is economically disadvantaged.
2. The water system is consolidating with a municipal water system.

Other states have used this approach successfully for many years. To protect the viability of the loan fund, and to ensure funds are used effectively, the department would likely limit the:

- Maximum percentage of a DWSRF loan that could be forgiven.
- Maximum per-connection loan amount that could be forgiven.

Develop a more targeted, focused approach to compliance

The department structures its compliance program to focus resources on ensuring basic public health protection for water system customers. For example, it recently made a concerted effort to remind water systems about their responsibility to sample water for nitrate, an acute contaminant that can cause immediate illness. This effort increased water system compliance from less than 50 percent to about 97 percent. We will look for ways to build on this approach to increase financial viability. The department will evaluate whether additional compliance triggers are appropriate to better assess and encourage water systems to become and stay financially viable.

Case Study: What it Takes to Help a Water System Improve Financial Viability

The City of Roy is in southwest Pierce County. It supplies water to about 300 homes with roughly 870 residents, 15 businesses and a school. In 2000 and 2001, the state awarded Roy loans totaling about \$600,000.

To be eligible for the loans, Roy had to complete a water system plan and include a rate increase to make payments. Roy's rate increase did not raise enough money to pay the loan, compensate for inflation, or establish a sufficient reserve account.

In 2008, Roy notified the Public Works Board that it could not make its loan payment for the coming year. The city council had moved money from the water utility to its general fund to remedy cash flow problems. Immediately afterward, the water system pump controls failed and the utility didn't have enough money.

Getting on the Right Path

Starting in September 2008, the Rural Community Assistance Corporation (RCAC) provided the City of Roy with technical assistance funded by a contract with the department. RCAC reviewed Roy's water system budget, revenues, and rate structure, and held four training sessions with the council to discuss options.

RCAC projected budget and revenue scenarios showed impending deficits, so the council concluded it clearly needed to raise rates. RCAC helped facilitate two public meetings to share with the public the justification for raising rates. In January of 2009, the council voted to adopt a rate structure to increase the overall average monthly rate by 45 percent (from \$26 to \$37.72 per typical residential customer) and to change the rate structure to recover costs. These revenues will meet expenses and will provide about \$20,000 each year for future water system projects.

Future considerations

Small Systems not paying their “fair share”

The department was given authority in 1991 to charge an operating permit fee (chapter 70.119A RCW). There has been no change to the fee since then. Many systems currently pay nothing to obtain an operating permit or services by the department; there is no fee for Group B systems or for Group A systems with fewer than 15 connections.

The fee for small Group A systems (15-49 connections) is only \$25. These systems cost the state more to bill than it recovers. From 50 connections to 53,333 connections, systems pay a fee based on a per-connection charge, with a maximum fee of \$10,000.

As previously mentioned, small systems represent the majority of compliance actions the department takes, and represent most of the requests it receives for technical assistance. The State awards most Drinking Water State Revolving Fund loans to small systems, and state WSARP funds are used to consolidate these systems when funding is available. Yet small systems are paying very little for this state oversight and assistance.

The department recently evaluated its financial ability to carry out the drinking water program. The department found current operating permit fees inadequate to provide sufficient revenue to operate a fully capable program. In discussions with stakeholders, it also became clear that large systems are subsidizing the department’s oversight of small systems. The department believes an operating permit fee restructure and increase is needed to provide an equitable and shared cost of providing drinking water program services to water systems of every size.

Statutory Recommendation 5: Amend RCW 70.119A.110 to increase the base fee for water systems to obtain an operating permit that includes a variable, declining per-connection charge for every size system. Potentially, the fee could be structured to provide a cost incentive for systems to be well-managed, and in full compliance with state rules.

Strengthen the existing legal framework for addressing failing water systems

The approaches outlined in the previous pages provide a series of policy changes and early interventions that would reduce the future burden borne by state taxpayers to ensure safe and reliable drinking water. The multi-faceted approach proposed by the department will:

- Reduce the number of small water systems.
- Make sure new water systems have responsible ownership for the best likelihood for success.
- Improve the department’s oversight, technical and financial assistance so resources are focused on the neediest water systems.

Despite this approach, some water systems will fail. Failure to achieve and maintain economic sustainability and good governance happens despite the department’s advice, technical assistance, and compliance and restructuring efforts. Some water systems will fail because of poor management decisions, financial hardships, or consumers choosing not to pay for the full cost of delivering safe and reliable water. Preventive intervention can take a water system only

so far. To avoid failure, consumers and owners must also agree to share responsibility. Receivership is the last—and least often used—tool in the department’s compliance toolbox. The purpose of the receivership statute (RCW 43.70.195) is to:

- Remove an irresponsible owner from managing day-to-day operations, swiftly if necessary.
- Provide certainty to the restructuring of a failing water system by putting it in the hands of a willing and capable entity that can protect public health.
- Bring together the department and other willing entities to complete the process in a reasonable period of time, without unnecessary and excessive costs to the state, the receiver, or the consumer.

RCW 43.70.195 authorizes the department to place a public water system into receivership based on any violation or threatened violation of public health laws. It uses this tool only as a last resort. In the 20 years this authority has been in place, the department has initiated receivership action only seven times. Each receivership case involved a small privately owned Group A community water system with an owner or owners who failed to ensure a safe and reliable water supply to the community—despite prior offers of technical assistance and increasingly stronger compliance actions.

In a receivership action, the petition must include the names of one or more suitable candidates who have consented to assume operation of the water system. If no other person is “willing and able” to act as a receiver, the court appoints the county in which the water system is located as the receiver of last resort. Six of the seven receivership actions were brought against investor-owned water systems; in each of these cases, the water system was not returned to the purveyor. Four receivership cases were assigned to county government as the receiver.

The receiver must report its recommendations for the water system's future operation to the court and to the department. This could include forming a water district or other public entity, or assigning the system to private ownership.

The court cannot make an entity accept a water system that has been in receivership, unless the entity agrees to the terms and conditions outlined in the plan adopted by the court. Nor may the court terminate the receivership and return the water system to its owner unless the department approves. If the court does return the water system to the owner, it may impose reasonable conditions, including a security bond, performance and financial audits, employment of qualified operators, and financial viability requirements. If the owner fails to meet the court’s conditions, such failure would invoke the court’s powers of contempt.

At the end of the process, the original owner will generally be paid something for the water system. Either it will be a price negotiated between the original owner and the ultimate receiver, or it will be a price determined through the eminent domain process if a public entity acquires the water system. In an eminent domain process, the court oversees the appraisal, ensuring the water system’s value reflects the need to make improvements.

The department's receivership experience

Here are some general lessons the department has learned from implementing the receivership statute:

- Local county governments resent being placed in a position of responsibility for failing water systems. They view this as an unfunded state mandate.
- The receiver must pay the “start-up,” legal, administrative, operating, and upgrade costs associated with receivership of a failing water system with only the hope that a rate increase for consumers of the failed water system will someday recover the costs.
- If the receiver of last resort (the local county government) is unwilling to participate, then the department cannot help achieve a successful outcome.
- Receivership presumes a qualified, interested entity is willing to take ownership of the failing water system. The department's experience suggests otherwise. Receivership can end without a willing and capable new owner.
- Receivership is expensive and time-consuming for all concerned.
- The 12-month period provided in the receivership statute is not always sufficient.

Refer to Appendix A for the Case Study on Bar Development. From 2001 through 2006, the Department of Health used all of its regulatory tools except receivership in an attempt to bring Bar Development back into regulatory compliance. In early 2007, the department decided that receivership was the only remaining regulatory tool to bring Bar Development back into regulatory compliance.

By the court-appointed end of the receivership period, no parties with interest in owning this water system had stepped forward. Even after completion of the receivership process, Bar Development remains an unapproved water system on a boil-water advisory. So far, the total cost to local and state government in pursuit of this receivership action has been more than \$200,000.

Legislative Recommendation 2: The department believes a legislative work session is needed to determine what changes would strengthen the receivership statute. The session should include participation from the department, the Attorney General's Office, local government, UTC, and other stakeholders.

Summary

A review of the department's federal and state authorities shows it has clear authority, and obligation, to address the financial viability of Washington's drinking water systems. The challenge the department faces is in identifying an effective approach. This report includes several recommendations for rule and program changes the department believes will give water systems the greatest likelihood of success.

The department believes the number of very small water systems will continue to increase due to factors outside its control. And, finally, even with the proposed statutory changes, some water systems simply won't succeed because of factors beyond our control.

The department will continue to apply the tools it has available to help small water systems overcome the many obstacles to their success, and will attempt to find lasting solutions to protect the public's health even when water systems fail.

Appendices

Appendix A: Sample communities that would benefit from consolidation

Introduction

The 2008 Legislature directed the Department of Health to “identify the communities that would benefit from consolidation, regionalization, or other measures that will lead to improved small water system regulatory compliance, long-term public health protection, and sustained economic vitality in communities served by small water systems.”²

The department does not have a comprehensive list of communities that would benefit from consolidation, regionalization, or similar measures. The department did, however, develop a list of communities that would benefit from funding under the Legislature’s Water System Acquisition and Rehabilitation Program. (See Appendix B)

The following case studies profile five communities served by small water systems with limited ability to provide safe and reliable drinking water. Each of these communities would benefit from consolidation, regionalization, or other modifications of the current water supply structure in the community.

Each case study highlights specific issues associated with small water systems. They include difficulties a water system had serving a small low-income community, the few alternatives available to water systems located in basins closed to new water rights appropriations, and the challenge of dealing with individual owners who fail to provide a safe and reliable water supply to their communities.

Figure 5 shows the case study locations. These case studies typify the many Washington communities with small water systems in need of consolidation, regionalization, or other measures to achieve improved regulatory compliance, long-term public health protection, and sustained economic vitality.

1. Woodland Mobile Home Park and Woodland Foursquare Church, Clark County
2. Bar Development and neighboring water systems, Douglas County
3. Eltopia Water Association, Franklin County
4. South Keyport Heights, Kitsap County
5. Bertrand Creek and Northwood areas, Whatcom County

Bar Development and South Keyport Heights have been identified for potential funding under the Water System Acquisition and Rehabilitation Program.

² As part of the Review of Drinking Water Systems appropriation (08-2-850)



Figure 5. Map showing the sample of communities that would benefit from water system consolidation or regionalization.

Woodland Mobile Home Park and Woodland Foursquare Church, Clark County

Background

The Woodland Mobile Home Park and Woodland Foursquare Church water systems serve drinking water to about 270 mostly low-income people. The water systems were built in the 1980s, about a mile apart. Neither has a certified waterworks operator. Both are experiencing water quality problems, but do not present serious public health risks.

- Woodland Mobile Home Park serves a residential population of about 210 people.
- Woodland Foursquare Church houses a school part of the year and serves a non-residential population of about 60 people.

This part of Clark County lies within a basin that is closed to new water right appropriations. There are no alternative aquifers from which to draw water.

Current situation

Woodland Mobile Home Park draws water from three wells. Recently, after learning that the wells connect hydraulically to surface water, the water system started chlorination to protect against bacteria that may be getting into the water.

The water system does not meter water use, so residents pay a flat fee included in the per-unit rent. They experience persistent problems with inadequate water flow, low water pressure, and high levels of nitrate, iron, and manganese. They do not complain about the quality of their water because they are concerned about the cost to fix and maintain the water system. Community members say they prefer to buy bottled water rather than pay to fix the water system.

Though the water system has more service connections than the department approved, the community hopes to re-open a store with food service. However, the condition of the water system and the lack of available water connections make it unlikely that the store will be able to get the needed permits.

“The community is very quiet because they know that, whatever happens, they will end up having to pay a lot of money. An individual might complain occasionally, but when they realize what it will cost the community, they stop.”

Andy Anderson,
Regional Engineer
Department of Health,
Office of Drinking Water

Woodland Foursquare Church water system was designed to provide water for the church. The church now functions as a school, so the water system regularly provides water for a population larger than it was designed to serve. The church needs a new treatment system and a certified operator. During the past two years, the Woodland Foursquare Church had four violations of water quality standards for bacteria. It also has consistently high levels of iron, magnesium, sodium, chlorine, lead, and copper. The church’s water comes from a single well with unapproved, inadequate treatment.

Proposed solutions

Mobile home park residents and people who use the church are aware of the mounting water quality and quantity issues facing their water systems, but they have not been attempting to solve them. Both water systems lack the leadership and financial ability to spearhead the needed connections.

Although the water systems have poor water quality, the current contaminants do not present a serious public health threat. This limits their chances of receiving state funds through programs such as the Drinking Water State Revolving Fund or the Water System Acquisition and Rehabilitation Program. Using treatment to meet drinking water standards would be expensive and would not address water pressure problems at the mobile home park.

Both water systems hope that neighboring Clark Public Utilities (CPU) will eventually provide water service in their area. However, an extension of service is not financially feasible at this time because the communities are too far away from the utility’s current distribution lines.

Next steps

The department is taking steps to ensure that both water systems have certified operators in the near future. Both water systems will likely continue waiting for water service from CPU.

Bar Development and neighboring water systems, Douglas County

Background

Four water systems that serve about 350 people near the small agricultural town of Bridgeport are part of an ongoing consolidation effort in Eastern Washington. Douglas County, the department, and community members are striving to consolidate these four water systems:

- **Bar Development** has a severe water quality, compliance, and water system management problem. Its shallow, hand-dug well is susceptible to contamination from surface water. EPA provided funds to the Rural Community Assistance Corporation to sample for coliform bacteria in November 2006. The samples tested positive for *E. coli*. The water system does not have a certified operator. Only a few users pay their monthly water bill.
- **Downing Townsite Water District's** source of supply exceeds allowable levels of nitrates. Some tests also show a mixing of well water and surface water from the Columbia River, which could bring contaminants into the water system. Consequently, the district needs to either find a new well source or treat the existing water supply. It intends to drill a new well if consolidation does not occur. The department approved Downing Townsite water system for 50 connections. The water system now serves 64 connections. Most of the 153 residential customers are low-income renters.
- The **Rocky Butte** and **Rich Acres** water systems find it challenging to obtain volunteers to operate their water systems. The current operators have difficulty meeting the demands on their time to ensure their water systems meet drinking water regulations. They hope that, by consolidating the four water systems, they can afford to hire a single paid certified operator.

Current situation

Bar Development: Many of the current Bar Development owners have been unwilling to comply with drinking water standards, and have not fulfilled basic management responsibilities. The department issued a red operating permit for Bar Development several years ago. A red permit means that the water system is in substantial non-compliance with drinking water rules. Bar Development serves about 50 residents. Most are low-income renters.



Bar Development

Bar Development water system does not bill its customers for water service. The water association doesn't bill customers, and therefore customers do not know how much they owe or whom to pay. Some customers don't pay because the water association doesn't follow up or

enforce against non-payment. As a result, there is no money for routine water treatment or for structural upgrades, or to pay for a certified operator.

Bar Development repeatedly cites financial limitations for their failure to conduct maintenance or upgrades. The department shared information about financial assistance programs with representatives, but they have not pursued those opportunities.

Bar Development is among the most troubled water systems in the state. The water supply is an unchlorinated, 18 foot-deep hand-dug well. The “casing” is a corroded corrugated metal culvert. The water systems age is unknown.

Over the past 10 years, the system’s water repeatedly exceeded the maximum contaminant level for coliform. In August 2005, there was an unconfirmed report that one or more community members began experiencing gastrointestinal distress. The water system tested positive for *E. coli* when sampled in November 2006.

Proposed solutions

Recently, Douglas County hosted a community meeting for water system purveyors and individuals interested in consolidating with Downing Townsite Water District. At the close of the meeting, 20 water system customers signed petitions in support of annexing into Downing Townsite Water District. A follow-up meeting is planned for later this summer.

To move forward with consolidation, owners of at least 60 percent of the property within each water system must sign the petition.

Next steps

If the communities choose to consolidate, the direct connection and the numerous water system upgrades will probably cost several million dollars, and the process will likely take about four years. The communities will need significant funding assistance to make this process successful.

Eltopia Water Association, Franklin County

Background

The Eltopia Water Association serves a 100-resident community in the town of Eltopia, about 20 miles outside of Pasco, near Highway 395. It is the largest water system in the area. Built in the late 1960s, the water system aged over the years, steadily requiring more maintenance and regulatory attention. Challenges include degraded infrastructure, and nitrate and arsenic contamination of the water supply.

The homeowners association owns the Eltopia Water Association. Water users are aware of the problems and understand that they need to make repairs.

Current situation

The Eltopia water system is nearly at the point of permanent disrepair. The well has endured 40 years of deterioration and the reservoir is leaky. This makes the water supply vulnerable to contamination.

Eltopia's shallow well is close to surface water. The department tested the source and confirmed that the well is directly affected by surface water. This means Eltopia is required by law to disinfect its water supply.

Bacteria have not been a significant issue since the water system's certified waterworks operator started chlorination treatment. However, arsenic levels routinely exceed the maximum allowed. Nitrate fluctuates right around the maximum contaminant levels.

Proposed solutions

To resolve repeated high nitrate and arsenic levels, Eltopia signed a compliance agreement with the department in June 2008. The department provided funding to Eltopia so it could study its possible next steps.

Eltopia would benefit from consolidation with a larger publicly owned water system. However, it is the largest water system in the area. Eventually, it may provide an option for consolidation with other, smaller water systems. Before that could happen, Eltopia would need to develop a new and safer water source.

Water users now pay a flat monthly fee of about \$15. Most community members are not prepared to invest substantial amounts of time and money in developing a new water system, nor does there yet appear to be much interest in expanding to meet regional needs.

Ultimately, there are limited options for this water system, given its high arsenic and nitrate levels. Currently, the water system is in compliance with its agreement with the department and has a yellow operating permit ("sufficient for existing uses"). If the Eltopia Water Association fails to comply with its commitment to the department and to take the appropriate actions, it will receive a red operating permit. A red permit means a water system is in substantial non-compliance with requirements, and it will face more severe and formal enforcement measures.

Next steps

After Eltopia completes its study, the department will discuss the options, the costs of the options, and financial assistance opportunities with Eltopia water users. The department may also discuss regionalization with other small water systems in the surrounding areas to gauge their level of interest and need.

South Keyport Heights, Kitsap County

Background

South Keyport Heights is a small public water system in a rural area south of Keyport, on the Kitsap Peninsula. It serves a 103-resident community with 41 connections. The community includes middle-and lower-income families. The UTC does not regulate the water system.

Built in 1970, the water system includes two shallow wells, a small reservoir, and 4-inch PVC distribution system piping that suffers frequent breaks. The wells need chlorine treatment to ensure the microbiological safety of the water and treatment to reduce its corrosiveness. The owner bills each customer a flat monthly rate of \$34.

A community member owns the South Keyport Heights water system. The water system previously contracted with a satellite management agency. However, the satellite management agency cancelled the contract because of difficulties working with the owner. The water system does not have a certified operator.



South Keyport Heights Pumphouse

South Keyport Heights has a history of compliance issues and bacterial contamination. The department has received about 10 complaints from water system customers since 2004. Most of these complaints relate to customers without water because of water system failures or main

breaks. Most recently, in December 2007, the entire water system experienced a one- to two-day water outage and boil-water advisory.

The owner informed the department in March 2008 that he had stopped chlorinating the water for ideological reasons. The water system exceeded the standard for copper, and the owner has not installed corrosion-control treatment to meet requirements.

In the past 10 years, the water system has had three boil-water advisories. The department has issued nine formal enforcement actions against the water system during that time and recently issued a \$10,900 fine because the owner failed to comply with the order. The owner appealed the fine.

Current situation

On June 16, 2008, the department inspected the water system and directed the owner to address various high public health risks, including chlorinating the water, hiring a certified operator, and taking routine coliform compliance samples. The owner was also instructed to implement corrosion control measures and cross-contamination control, and to construct enclosures around wellheads. The department does not consider these requirements costly to implement.

Proposed solutions

The department has funded a feasibility study to evaluate the potential for the North Perry Avenue Water District to consolidate with the South Keyport Heights water system. The North Perry water system, based in Bremerton, serves about 19,000 residential customers in an area south of the South Keyport Heights water system. North Perry has distribution lines close to South Keyport Heights. It is well-equipped to construct a direct connection to South Keyport Heights or to acquire the water system.

The feasibility study will include an estimate of the cost of improvements necessary for South Keyport Heights to provide safe and reliable service to customers. The department is concerned about the water system's integrity and expects that North Perry may find more structural problems if and when it begins working with South Keyport Heights.

Next steps

The feasibility study should be complete in summer or fall of 2009. It will help North Perry decide whether it makes financial sense to acquire or provide a direct connection to the South Keyport Heights water system. Negotiating a reasonable price with the owner of South Keyport Heights may prove to be a challenge. He previously tried to sell the water system at a high price to North Perry and through advertisements in the local newspaper.

Bertrand Creek and Northwood areas, Whatcom County

Background

North Whatcom County is primarily an agricultural region, with numerous dairy and berry farms. Agriculture in this area and to the north in Canada is linked with high concentrations of nitrates in the underlying shallow Abbotsford-Sumas Aquifer.

About a dozen small public water systems in north Whatcom County have a nitrate concentration above the maximum contaminant level for drinking water. These water systems together serve at least 1,000 people.

Of particular concern to the department are some small Group A and Group B water systems that repeatedly exceed the drinking water standard for nitrate. These water systems are concentrated in two rural areas: Bertrand Creek, west of Lynden, and Northwood, northeast of Lynden.

Current situation

The Bertrand Creek area comprises small neighborhoods surrounded by berry fields, other agricultural fields, and the Maberry Packing berry processor. More than 400 people in the area receive their domestic water supply from one of several water systems that repeatedly exceed

the drinking water standard for nitrate (10 parts per million). The largest of these water systems is Rathbone Park, which was built before 1970 and serves a small residential neighborhood of about 240 people. Other water systems in the area with high nitrate concentrations include Century Water, Delta Grocery, Kontree Apartments, and Lynden Valley View.



Test well in the Delta Water Association's service area, near Lynden, Washington

In the Northwood Area, more than 600 residents and part-time users receive water from water systems that have exceeded the drinking water standard for nitrate. These include Covenant Christian School, Delta Water Association, Ehlers Farm, Northwood Park, Northwood Water Association, and Rader Farm. Delta Water Association is the largest of these water systems, serving about 420 residents spread across rural areas reaching up towards the Canadian border.



Storage tanks that belong to the Delta Water Association

These water systems face a number of challenges in providing safe and reliable drinking water. In addition to high nitrate levels, the aquifer is vulnerable to bacteria following heavy rainfall. Some, but not all, of the water systems drawing from this aquifer provide disinfection treatment. Furthermore, some of these water systems exceed the action level for lead or copper.

The City of Lynden is the largest nearby municipal water supplier, providing treated surface water from the Nooksack River. A number of residents in the Bertrand Creek and Northwood areas receive water from Lynden.

One water system, Covenant Christian School, installed a reverse osmosis system to treat its water supply. However, department staff believes the school would readily convert to an alternative clean water supply rather than maintain this expensive treatment system.

Proposed solutions

In 2007, a feasibility study assessed various proposals to provide a safe and reliable drinking water source to the 1,200 or so people the profiled water systems currently serve. Among other solutions, the study considered drilling new wells and building water treatment facilities. However, studies show there is no useful water below the shallow, nitrate-contaminated aquifer. This eliminates the option of drilling a new well. Water treatment facilities would be costly and would further stress the technical, managerial, and financial capacities of these small water

systems.

The feasibility study concluded that the most economically viable long-term solution is to construct transmission mains that would allow Lynden to service individual utilities through direct connections. Lynden has infrastructure near many of these water systems and is interested in providing water to them. However, Lynden does not have adequate water rights both to extend service to these water systems and to meet the expected growth within its city limits.

Next steps

In March 2009, the Whatcom County Public Utility District (PUD) signed an interagency agreement with the department to evaluate the feasibility of consolidating the small water systems. Potentially, this consolidated water delivery system could serve other area water systems that have high nitrate concentrations, but have not yet exceeded the MCL repeatedly. The PUD will also conduct a separate feasibility study of supplying water from the City of Sumas to the water systems through adjacent utilities. It will evaluate technical, legal, managerial, and water resource barriers. The PUD will also begin to identify plans for organizing the delivery of water to this regional service area.

Meanwhile, the City of Lynden is working with Ecology to evaluate various water right options, including acquiring water rights from Whatcom PUD or the City of Bellingham, confirming a water rights transfer from West Farm Foods, confirming existing Lynden water rights, or using reclaimed water. The likelihood of obtaining new water rights is small because the basin is closed to new water rights, and there is a significant backlog of water right applications.

Appendix B: Potential Water System Acquisition and Rehabilitation Program Projects

Municipal Agency	Water System Name	Population Served	Number of Connections	Proposed Acquisition Year	Estimated Project Cost (\$)	Estimated WSARP Grant Request (\$) ³	Estimated WSARP Grant Request (\$) with 10% Inflation
Birch Bay Water & Sewer District	Cherry Point Industrial Area	unknown	unknown	unknown	\$1,200,000	\$600,000	\$660,000
Bonney Lake, City of	Tapps Island	1,500	530	2010-2011	\$4,500,000	\$2,250,000	\$2,475,000
Cedar River Water & Sewer District	Reed Ranch	42	14	unknown	\$1,167,258	\$583,629	\$641,992
Centralia Utilities	Cherry Blossom	200	42	unknown	\$200,000	\$100,000	\$110,000
Clallam PUD	Parkwood	400	200	2009	\$1,750,000	\$875,000	\$962,500
Covington Water District	Ravensdale Water Supply Company, Ravensdale Mobile Home Park	128	51	unknown	\$742,806	\$371,403	\$408,543
Covington Water District	Sawyerwood Water Association	11	3	unknown	\$277,828	\$138,914	\$152,805
Covington Water District	Butcher, AC	23	9	unknown	\$108,000	\$54,000	\$59,400
Downing Townsite Water District	Bar Development Water Users Association, Rich Acres, Rocky Butte	40	16	2009-2010	\$1,350,000	\$675,000	\$742,500
Dupont, City of	El Rancho Madrona	93	33	2010	\$300,000	\$150,000	\$165,000
Elmer City Water System	Riverview Water Association	25	8	2009	\$750,000	\$375,000	\$412,500
Elmer City Water System	Lone Pine Water Association	38	28	2009	\$750,000	\$375,000	\$412,500
Evergreen Water & Sewer District	Whatcom County Water District #13	795	347	unknown	\$300,000	\$150,000	\$165,000
Freeland Water & Sewer District	Harbor Hills Community Water System	30	15	unknown	\$250,000	\$125,000	\$137,500
Freeland Water & Sewer District	Sunnyview Terrace Association Inc	8	4	2009	\$250,000	\$125,000	\$137,500

³ These figures are based on estimated project costs, and do not necessarily represent the sum for which the water system would be eligible under current WSARP guidelines.

Municipal Agency	Water System Name	Population Served	Number of Connections	Proposed Acquisition Year	Estimated Project Cost (\$)	Estimated WSARP Grant Request (\$) ⁴	Estimated WSARP Grant Request (\$) with 10% Inflation
Highland Water District	Sultan Estates	12	4	unknown	\$1,000,000	\$500,000	\$550,000
Jefferson PUD	Sahara Water Services, Inc	15	8	2009	\$150,000	\$75,000	\$82,500
Jefferson PUD	Quimper – Sahara	20	8	2009	\$75,000	\$37,500	\$41,250
Jefferson PUD	Brinnon Area	100	50	2011	\$750,000	\$375,000	\$412,500
Kitsap PUD	Port Gamble	200	83	2009	\$1,200,000	\$600,000	\$660,000
Kitsap PUD	Bill Point	200	84	2009	\$800,000	\$400,000	\$440,000
Kitsap PUD	Priddy Vista	200	83	2009	\$700,000	\$350,000	\$385,000
Kitsap PUD	Viewside Community	155	48	2009	\$400,000	\$200,000	\$220,000
Kitsap PUD	Country Meadows	90	31	2010	\$200,000	\$100,000	\$110,000
Kitsap PUD	Emerald Heights	200	79	2010	\$600,000	\$300,000	\$330,000
Monroe, City of	Marbello	291	88	unknown	\$600,000	\$300,000	\$330,000
Oak Harbor, City of	Heathrow	54	27	unknown	\$350,000	\$175,000	\$192,500
Oak Harbor, City of	Indian Ridge Water Co.	119	40	unknown	\$500,000	\$250,000	\$275,000
Omak, City of	Suncrest Plat	224	84	unknown	\$350,000	\$175,000	\$192,500
Pasadena Park Irrigation District	Spokane Christian Center	250	1	2009	\$250,000	\$125,000	\$137,500
Pend Oreille PUD	Ponderay Shores Water	43	60	2009-2010	\$350,000	\$175,000	\$192,500
Pend Oreille PUD	Goosehaven	75	46	2009-2010	\$340,000	\$170,000	\$187,000
Pend Oreille PUD	Metaline Water System	176	86	2009-2010	1,500,000.00	\$750,000	\$825,000
Pend Oreille PUD	Town of Cusick	420	230	2010-2011	1,700,000.00	\$850,000.00	\$935,000
Republic, City of	Pine Grove System	200	80	2009-2010	\$2,500,000	\$1,250,000	\$1,375,000
Sallal Water Association	Mt. Si Motel	7	11	unknown	\$25,000	\$12,500	\$13,750
Skagit PUD	McHaven Water System	89	35	unknown	\$366,000	\$183,000	\$201,300
Skagit PUD	Lower Cedardale Water Co.	30	14	unknown	\$288,000	\$144,000	\$158,400

⁴ These figures are based on estimated project costs, and do not necessarily represent the sum for which the system would be eligible under current WSARP guidelines.

Municipal Agency	Water System Name	Population Served	Number of Connections	Proposed Acquisition Year	Estimated Project Cost (\$)	Estimated WSARP Grant Request (\$) ⁵	Estimated WSARP Grant Request (\$) with 10% Inflation
Snohomish PUD	Pilchuck 26	66	23	unknown	\$763,750	\$381,875	\$420,063
Snohomish PUD	Lochaven	225	83	unknown	\$313,081	\$156,541	\$172,195
Stevens PUD	Riverside	400	90	2009	\$300,000	\$150,000	\$165,000
Stevens PUD	Loon Lake	49	200	2010	\$400,000	\$200,000	\$220,000
Stevens PUD	Loon Lake	50	15	2009	\$150,000	\$75,000	\$82,500
Stevens PUD	Spokane Lake Park	30	7	2010	\$150,000	\$75,000	\$82,500
Stevens PUD	Lake Spokane	32	4	2010	\$700,000	\$350,000	\$385,000
Sunnyside, City of	Outlook Community Water	282	66	unknown	\$2,200,000	\$1,100,000	\$1,210,000
Thurston PUD	Cedarwood	117	44	2009	\$700,000	\$350,000	\$385,000
Thurston PUD	Wildaire Estates	160	56	2009	\$120,000	\$60,000	\$66,000
Walla Walla, City of	Wallula Water District	200	50	unknown	\$500,000	\$250,000	\$275,000
Whitworth Water District	Chattaroy Hills Water System	539	210	2009	\$2,482,920	\$1,241,460	\$1,365,606
Whitworth Water District	Colbert Water System	188	75	2009	\$2,000,000	\$1,000,000	\$1,100,000
Yakima County Public Works	Outlook Community Water System	282	66	unknown	\$2,200,000	\$1,100,000	\$1,210,000
Yakima County Public Works	Outlook Elementary School	600	1	unknown	\$660,000	\$330,000	\$363,000
Yakima County Public Works	Wolfe System	68	27	unknown	\$200,000	\$100,000	\$110,000
Yakima County Public Works	Butterfield	108	40	unknown	\$600,000	\$300,000	\$330,000
Yakima County Public Works	Cascade Park	250	30	unknown	\$200,000	\$100,000	\$110,000
Yakima County Public Works	Neal Valley View	50	20	unknown	\$200,000	\$100,000	\$110,000
Totals:					\$43,729,643	\$21,864,822	\$24,051,304

⁵ These figures are based on estimated project costs, and do not necessarily represent the sum for which the system would be eligible under current WSARP guidelines.

Potential Water System Acquisition and Rehabilitation Program Projects without Cost Estimates

Municipal Agency	Water System Name	Population Served	Number of Connections	Estimated Project Cost (\$)
Covington Water District	Welch's Water	69	23	U ⁶
Covington Water District	Lake Retreat Camp & Conference Center	25 (379 non-residential)	25	U
Deer Creek Water Association	Laurel West	42	11	U
Deer Creek Water Association	Guide Meridian	190	80	U
North Bend, City of	Snoqualmie Valley Land Co.	80	1	U
North Perry Ave Water District	South Keyport Heights	103	41	U
Oak Harbor, City of	Wagonwheel Mobile Home Park	150	70	U
Parkland Light & Water	Martens Addition	98	32	U
Parkland Light & Water	Pinewood Glen	70	30	U
Snohomish PUD	Mountain Loop View Tracts	200	91	U
Snohomish PUD	Meadow Lake Water Association	171	52	U
Snohomish PUD	Tatoosh Water Co.	249	110	U
Snohomish PUD	Green Water Meadows	60	unknown	U
Snohomish PUD	Warm Beach Water Association	940	500	U
Snohomish PUD	Thunderbird Terrace	72	24	U
Snohomish PUD	Rim Rock	68	31	U
Snohomish PUD	Sky Meadow	960	384	U
Snohomish PUD	Green Velvet	24	13	U
Snohomish PUD	Meadow Ridge	175	67	U
Snohomish PUD	Kackman Creek	330	143	U

⁶ "U" indicates that project costs are unknown due to the lack of a feasibility study or lack of comprehensive knowledge about the water system's acquisition and rehabilitation needs.

Appendix C: Issues affecting the number of water systems

Looking at the numbers of small water systems, the obvious question that comes to mind is, “*Why are there so many small water systems in Washington State?*” This appendix highlights four reasons:

- The water code.
- Unclear definition of “municipal water system.”
- The need for additional incentives for restructuring.
- Local approval of land development proposals.

The Water Code (Chapters 90.03, 90.44, and 90.54 RCW)

The availability of water in Washington continues to decline as competition for the resource increases.

The law requires anyone wishing to use state waters to obtain a state permit, except for a few statutory exemptions. One key statutory exemption is for domestic (household) uses from a well that use 5,000 gallons per day or less. This exemption is similar to that found in water law in many Western states. It allows residents to provide water for homes, gardens, small industry, and livestock, without going through a water right permit process.

New water rights are difficult to acquire, and the review process for a new water right application may take many years to complete. Consequently, the use of the groundwater permit exemption has increased dramatically. Developing a small water system on a permit-exempt well is often a cheaper and easier alternative to waiting for a water right permit.

The department estimates that about 90 percent of new Group B water systems developed in the past 10 years use permit-exempt well sources. Exempt-well developments will continue to proliferate to meet the housing demand in areas where water rights are not available.

Typically, Group B water systems using permit-exempt wells are limited to six households⁷. However, some local agencies have approved Group B water systems with up to 14 residences for a group domestic permit-exempt use. And, the department’s design guidelines allow small Group A water systems to use exempt wells with appropriate engineering justification.

Watershed planning units assist Ecology by recommending approaches to address permit-exempt wells in instream flow rules. While these efforts may help to address regional effects of permit-exempt wells, a statewide approach is needed to prevent the proliferation of Group B water systems on permit-exempt wells.

⁷ This six-connection figure is most appropriate for Western Washington; in Eastern Washington, 5,000 gpd may more appropriately serve just four connections.

The departments of Health and Ecology are collaborating to find ways to slow the proliferation of exempt well developments and Group B water systems. Meanwhile, the department believes the number of very small water systems will continue to increase.

Unclear definition of a municipal water system

The State Supreme Court is currently reviewing an appeal of the Municipal Water Law (RCW 70.119A.180) for its constitutionality. A Superior court ruling found that privately owned water systems could not be classified as “municipal water suppliers.” Because of the ruling, these privately owned water systems cannot currently obtain the water right benefits afforded to municipal suppliers within the law.

The Municipal Water Law allows municipal water systems to retain their unused (“inchoate”) water rights, which would ordinarily be subject to relinquishment. However, if privately owned water systems cannot be classified as municipal water suppliers, they will be subject to water rights limitations based on current use.

The current ruling will result in many water systems being unable to serve new customers. New developments may have to create new small water systems using permit-exempt wells. The current ruling also puts privately owned water systems at a disadvantage for transferring water, which creates an additional barrier to pursue water system consolidation.

Need for additional incentives for restructuring

The department continues to explore and evaluate state policies that encourage consolidation among two or more water systems to provide a pathway out for failing or at-risk systems. Water system consolidation is at best a challenging endeavor because of high costs, along with frequent lack of community leaders and clear decision-making processes.

In addition, RCW 90.44.105 creates a regulatory barrier for water system consolidation. The department believes this statute’s intent was to ensure that any water system consolidating another water system using a permit-exempt well source would be “credited” 800 gallons per day per household. That means, for example, that a larger water system would receive 4,800 gallons of water right credit when the system consolidated a six-connection water system.

However, the Department of Ecology does not implement the statute that way. Ecology will transfer, or “credit,” only that amount of water proven to be put to beneficial use by the six-connection system. This requires meter readings or other records.

By providing an 800-gallons per-day per-household water right credit, a larger water system consolidating a small system might be able to use surplus rights to serve additional customers. This would help the larger water system connect to other homes, which would spread the costs of consolidation projects to more homes and promote efficient water use.

Case Study: Small Water System Proliferation in Kittitas County

Developers have created 102 new public water systems in the Upper Yakima River Basin since July 2002. Additional projects are proposed but not approved. These water systems are close to each other and often clustered. The department believes nearly all the water supplies serving the 74 Group B and 28 Group A water systems operate under the 5,000-gallon-per-day water right permit exemption in RCW 90.44.050. Ecology has closed the Upper Yakima basin to new water appropriations, so anyone applying for a new water right would be denied a permit, which creates an incentive to develop large numbers of very small water systems.

In the past six years, 30 new public water systems were created within about five miles of the City of Roslyn. Many of them are located in clusters of two or more water systems. In the past six years, developers created 10 new public water systems a short distance from Ellensburg. The department doesn't know why developers built individual water systems on the outskirts of the city. No rules require developers to request water service; nor do any state rules require Ellensburg to agree to connect a new development to the City's water supply if the City considers the effort feasible.

The inability to secure a water right has not slowed land development. Rather, it has promoted the creation of multiple small water systems, the types of water systems that are least likely to achieve sustainability or operate under effective governance.

The 28 Group A water systems recently established in Kittitas County include 15 community water systems. See Table C-1 for facts about these community water systems.

Table C-1. Group A community water systems recently created in Kittitas County

Water System Name	# Residential Connections	Ownership	Management	Water Rights	Water Rates (per year)
Anna Bell	14	Developer	Private SMA	Exempt well	\$360
Bell Creek	14	Developer	Private SMA	Exempt well	\$468
Brookside	14	Developer	Private SMA	Exempt well	\$468
Evergreen Park	14	Developer	Private SMA	Exempt well	\$360
Game Farm	30	Developer	Developer	Yes	\$300
Grasslands	14	Developer	Developer	Exempt well	\$500
Hidden Valley	14	Developer	Private SMA	Exempt well	\$360
Horse Meadows	14	Developer	Private SMA	Exempt well	unknown
Kittitas Foothills	14	Developer	Private SMA	Exempt well	\$468
Meadow Ridge	14	Developer	Private SMA	Exempt well	\$468
Misty Mountain	11	Developer	Private SMA	Exempt well	\$468
Ranch at Swauk	14	Developer	Private SMA	Exempt well	unknown
Timber Cove	14	Developer	Private SMA	Exempt well	\$468
Timber Heights	12	Developer	Private SMA	Exempt well	\$420
Turf Trails	12	Developer	Private SMA	Exempt well	\$360

Developers create small Group A community water systems with 12 to 14 connections that use water rights permit-exempt wells. These water systems are classified as Group A water systems because they provide drinking water to more than 25 people per day.

The challenges these small water systems face put them at risk of failing to sustain safe and reliable drinking water for their small communities. The water system owners must comply with comprehensive health and environmental regulations, and fund the costs of maintaining their infrastructure. Some day, these small privately owned water systems may want help getting out of the business: the well fails, infrastructure crumbles, or homeowners grow weary of trying to manage their own water system.

Based on experience, the department knows the costs of any such consolidation will be high. Preventing the creation of so many small water systems in the first place would be a more proactive and cost effective solution.

Local approval of land development proposals

Local governments decide whether to approve the new development or new business. The department's approval of the water system does not create the development; the development creates the water system.

The number of small water systems continues to increase. The combination of limited water rights availability, the existence of an exemption for small groundwater withdrawals and the fact that local governments make land use decisions together contribute to the increase.

Case Study: Land use decisions drive the creation of new water systems

Weiser Farms purchased farmland and three wells with irrigation water rights from Columbia Inland Corporation about five miles from West Richland. The company then applied to Benton County to change zoning on the property from agricultural to rural residential land. The owner also applied to Ecology and received approval to convert the water rights to domestic use.

In 2002, the owner applied to Benton County to subdivide 475 acres of farmland into 190 residential lots. The owner proposed to build Cottonwood Springs Development in four phases, and to obtain water service for the developments from the BC Water Company. The department approved the water company for 99 connections. The department later approved the company to expand its water system to serve 258 connections.

Recently, Benton County approved zoning for more than 500 additional lots, assuming that the developments will get their drinking water from BC Water Co. This is problematic because the county made the land-use decision without any certainty of the water system's capacity, even though the department has not approved the water system to serve the additional customers. If the existing system does not have capacity to add these connections, the developer will have to create multiple Group B water systems to supply water for the new homes.

Appendix D: Section 2009 of Engrossed Substitute House Bill 2765

NEW SECTION. **Sec. 2009.** A new section is added to 2007 c 520 (uncodified) to read as follows:

FOR THE DEPARTMENT OF HEALTH

Review of Drinking Water Systems (08-2-850)

The appropriation in this section is subject to the following conditions and limitations:

(1) The appropriation in this section is provided solely for the department of health to conduct a statewide review of small public drinking water systems that have or may in the future require significant state resources to resolve urgent threats to public health and safety. A small water system is less than one thousand connections (a group A or group B water system). The department shall evaluate case studies, the two regulatory frameworks in place for small systems, and provide a report to the appropriate legislative committees and the office of financial management with recommendations on early interventions or changes to the regulatory structure that could prevent such problems in the future.

(2) The department shall identify the communities that would benefit from consolidation, regionalization, or other measures that will lead to improved small system regulatory compliance, long-term public health protection, and sustained economic vitality in communities served by small systems. The department shall submit a progress report to the fiscal committees of the legislature and the office of financial management by December 1, 2008, and a final report by June 30, 2009.