



Report to the Legislature: Small Community Wastewater Case Studies and Recommendations



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Small Communities Wastewater Case Studies and Recommendations

by

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Concrete, Town of

- ❖ Judd Wilson, Mayor
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Klickitat, Community of

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- ❖ Patty Phillips, Clerk

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- ❖ Ken Jacobs, Mayor
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South Bend, City of

- ❖ Karl Heinicke, Mayor

Sultan, City of

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Executive Summary

In the 2008 Supplemental Capital Budget, the Washington Legislature directed the Department of Ecology (Ecology) and the Department of Community, Trade, and Economic Development (CTED) to develop a set of case studies of small community wastewater systems that require major state financial and technical resources to resolve substantial threats to environmental quality.

The Legislature asked Ecology to provide substantive recommendations for early interventions to prevent similar problems in the future.

The case studies presented describe the existing wastewater infrastructure needs, and identify other infrastructure needs of 15 “small” communities, (all with populations of fewer than 10,000 people). The communities selected all face (or have recently faced) the need for large scale wastewater infrastructure projects.

Each case study community requires significant financial and technical assistance during planning, design, and construction. The case study communities provide a representative cross-section of statewide small communities and their wastewater infrastructure needs.

The location of these communities is shown on the state map on the back cover of this report.

Case studies include, but are not limited to:

- Present status of existing wastewater treatment facilities.
- New or upgraded wastewater facilities needs and why they are required.
- Past and present community sewer user rates and connection fees and a discussion of how these communities have paid for past and present wastewater infrastructure needs.

- Costs of wastewater infrastructure and potential or secure funding sources.
- Other financial commitments (for example, large debts and other infrastructure projects needed).
- The community’s public involvement and acceptance of wastewater facilities and costs.
- Local official’s remarks – in their own words.

A table entitled “Just the Facts” is provided with a summary of particularly relevant information about each of the Case Study Communities. This table is presented inside the back cover of this report.

Research on community wastewater infrastructure needs, site visits, and interviews with local officials were the foundation of the case studies. Recommendations for early intervention were based on the information collected and professional experience gained by Ecology through the administration and management of water quality state and federal grants and loans.

The recommendations for early intervention, if implemented, could prevent similar challenges in other small communities as their wastewater infrastructure ages. These recommendations (including specific rationale), follow this Executive Summary and Introduction. The following is an outline of recommendations for Legislative action:

1. Capital Facilities/General Sewer Plan

Require Capital Facilities/General Sewer Plans to be reviewed and updated on a predictable six-year cycle and include asset management and financial planning elements into the requirements for General Sewer Planning.

2. Sewer User Charge System

Require small communities to establish and maintain a fair and equitable sewer user charge system for residential, commercial, and

industrial users that will cover all financial obligations of the community's sewer utility. The user charge system should be reevaluated at least every two years.

3. Connection Fees

Require small communities to establish connection fees for new residential, commercial and industrial connections to the sewer system. The connection fees charged should pay a fair share of the cost for the infrastructure from which new connections will benefit. The connection fee structure should be reevaluated at least every two years.

4. Reserve Fund

Require small communities to establish and adequately support a capital wastewater facilities "Reserve Fund" that is dedicated to paying for wastewater infrastructure and equipment replacement. The reserve fund should be reevaluated based on projected needs on needs outlined in the General Sewer Plan.

5. Sewer Use Ordinance

Require small communities to establish and enforce a sewer use ordinance that restricts certain connections and wastes to protect a local government's investment and enhance the wastewater treatment's process stability and treated effluent quality. The sewer use ordinance should be reviewed and evaluated as necessary but at least every two years and modified as needed to ensure the operational integrity of the utility.

6. State Financial Assistance/Local Commitment

The state should establish dedicated grant and loan resources for financially distressed small communities for planning, design, and construction of wastewater facilities. State agency grant and loan programs should focus on the financial capacity and project affordability for residential customers in small communities. Recommendations one through five above

should be among the eligibility requirements for participation in state agency financial assistance programs.

7. Commercial and Industrial Infrastructure Needs

Provide state community economic development grants and loans to small communities for infrastructure intended to attract and support industries and commercial enterprises. Targeting these sources of funds to commercial/industrial will help ensure that residential sewer users in small communities (less than 10,000 people) are not unfairly burdened.

8. Small Community Technical Assistance

Provide adequate staff and resources to make available effective early intervention technical assistance statewide.

9. Coordinated Infrastructure Assistance

Formalize interagency infrastructure assistance coordination to better assist small local governments by providing financial information, training, and best management practices.

10. Growth Management Act (GMA)

Resolve the statutory inconsistencies between state infrastructure financing agencies regarding when GMA compliance must be achieved for projects to be eligible for funding.

Introduction

In recognition of the ongoing technical and financial hurdles faced by Washington's small communities in meeting wastewater infrastructure needs, the state Legislature directed the Department of Ecology (Ecology) and the Department of Community, Trade, and Economic Development (CTED) to conduct a case study to assess the issue and provide recommendations on how to address the problems. The following language in the 2008 Supplemental Capital Budget, set this study in motion:

“Develop a set of case studies of wastewater systems, based on the small communities initiative's action list, that require significant state financial and technical resources to resolve urgent threats to public health, safety, and environmental quality. The department (of Ecology) shall also provide recommendations for early interventions to prevent similar problems with small communities in the future.”

Legislative staff asked Ecology to provide concrete recommendations that can be implemented by the Legislature, and to avoid generalizations on what communities should do.

Ecology worked with CTED's Small Communities Initiative staff to select 15 small communities with populations of fewer than 10,000 people¹ that provide a representative cross section of statewide small community wastewater infrastructure needs. The communities selected all required, or will soon require, considerable financial and technical assistance to plan, design, and construct wastewater system upgrades or new infrastructure where individual systems are inadequate and cannot be replaced.

¹ The 2008 Environmental Protection Agency (EPA) Clean Watershed Needs Survey considers a community with less than 10,000 people to be a “small community.”

There are several factors that cause communities to need infrastructure projects:

- Infrastructure built in the 1970s and early 1980s is reaching the end of their design lives and are now being replaced.
- Emerging needs, such as advanced treatment, or reclaimed water.
- The population growth generates ever increasing volumes of wastewater that requires treatment. Communities must create the infrastructure to serve both short and long-term needs.
- Individual septic tank systems throughout communities were often installed in areas where soils cannot provide prolonged adequate treatment, and systems pollute area waters.

The studies provide a reasonable picture of small community needs for addressing wastewater system upgrades to protect public health and the environment and how these needs are met. Case studies include:

- Communities where facilities have been or are being constructed with substantial state resources.
- Communities that are or will be requesting a major investment of time and money from the state and federal governments.

Ecology held interviews with community leaders of the 15 communities selected and CTED's Small Communities Initiative (SCI) Staff participated in the interviews for the communities with whom SCI is now working.

The information gathered through interviews with community leaders and staff provides a variety of different perspectives and insight into the infrastructure and financial challenges faced by small communities across our state.

A glossary of technical terms is available at the end of the report.

Recommendations for Early Intervention

Recommendations are based on interviews with elected and appointed officials of small communities throughout the state of Washington and decades of professional experience gained by Ecology through the administration and management of water quality state and federal grants and loans.

The recommendations provided will help put Washington's small communities on a path to sustainable infrastructure through a combination of proper financial and technical planning, state and federal financial assistance resources, and technical assistance.

1. Capital Facilities/General Sewer Plan

Recommendation

Require Capital Facilities/General Sewer Plans to be reviewed and updated on a predictable six-year cycle and include asset management and financial planning elements into the requirements for General Sewer Planning. These required planning elements can be used as a mechanism to track a communities progress on the other recommendations in this report.

Potential Implementation Actions

To implement this recommendation, the Legislature could amend Chapter 90.48 RCW: *Water pollution Control*, directing Ecology to develop regulations requiring regular sewer plan updates.

This requirement should allow for a reasonable phase in period.

Rationale

Current Ecology rules (WAC 173-240-5 *General Sewer Plan*) only require a General Sewer Plan to be updated in conjunction with an upgrade to the wastewater treatment plant. Because facilities may not be upgraded for 20 to 30 years in some cases, and because of the relatively fast pace of development decisions, the general sewer plan can become out of date very easily. The best practice for utility management suggests that the General Sewer Plan be updated every five years or so.

A required periodic planning update will allow communities to identify problems and correct them before they become serious. The benefits of periodic planning go beyond protecting the financial health of the utility. The planning process gives the community a chance to review engineering and operational practices and address these before serious problems or permit deficiencies arise.

The Department of Health (DOH) requires communities to prepare an approved *Water System Plan* every six years. DOH's requirements for Waster System Plans include financial planning elements. Consistent planning schedules between the water and sewer regulatory agencies would increase community understanding of their needs and improve compliance with their requirements.

2. Sewer User Charge System

Recommendation

Require small communities to establish and maintain a fair and equitable sewer user charge system for residential, commercial, and industrial users that will cover all financial obligations of the community's sewer utility. The user charge system should

be reviewed and evaluated as necessary but at least every two years and adjusted as needed to meet the financial requirements of the utility. The user charge system should be sufficient to:

- Pay for the operation and maintenance (for example, salaries, chemicals, utilities, insurance, training, supplies, etc.) of the wastewater system.
- Retire any outstanding debt of the wastewater utility.
- Save for replacement of mechanical equipment (e.g., pumps).
- Fund emergency repairs to the wastewater treatment plant and collection system.
- Support a reserve fund dedicated to capital improvements required for the community.

Potential Implementation Actions

To implement this recommendation via statute, the Legislature could amend the following statutes:

- Chapter 35.67 RCW: *Sewerage systems - refuse collection and disposal* (cities).
- Chapter 36.94 RCW: *Sewerage, water, and drainage systems* (counties).
- Title 57 RCW: *Water-sewer districts*.

To implement this recommendation via regulation, the Legislature could amend Chapter 90.48 RCW: *Water pollution Control*, directing Ecology to develop regulations.

This requirement should allow for a reasonable phase in period.

Rationale

Many small communities are reluctant to raise their sewer rates because raising rates is unpopular with local businesses and

residents. This can set in motion a reactive cycle, where rates are not increased for many years. In some cases a decade or more may pass before a dramatic rate increase is needed to compensate for lost time and to address what has become a critical and often expensive need. This cycle is often exacerbated by underfunding of basic operation and maintenance for the system and failing to account for inflation.

To avoid this cycle and develop sustainable utility management practices, communities should evaluate and increase sewer rates in appropriate, predictable, and acceptable increments. By periodically reviewing and adjusting sewer user rates communities will not only be able to keep up with the cost of inflation for routine operation and maintenance, but if done systematically, the community can also set realistic savings goals to accumulate the capital required to help replace infrastructure at the end of its useful life.

While communities could and should review their user rates on a routine basis, a legislative requirement will ensure that this review happens in all communities on a consistent and predictable basis regardless of the local conditions.

3. Connection Fees

Recommendation

Require small communities to establish connection fees for new connections to the sewer system. The connection fees charged should pay for the fair share of the cost of the infrastructure from which new connections will benefit. Connection fees are tools local governments can use to ensure that “Growth pays for growth.” The connection fee should be reviewed and evaluated as necessary but at least every two years and adjusted as needed to meet the

financial requirements of the community's sewer utility. Connection fees should not be used to fund routine operation and maintenance of a sewer system. The state should require that connection fees be:

- Used to retire debt that existing users took on to construct infrastructure to benefit new users
- Used to fund additional capital infrastructure required to serve growth.
- Structured to encourage residents to connect to sewers when they are available.

Potential Implementation Actions

To implement this recommendation via statute, the Legislature could amend the following statutes:

- Chapter 35.67 RCW: *Sewerage systems - refuse collection and disposal* (cities).
- Chapter 36.94 RCW: *Sewerage, water, and drainage systems* (counties).
- Title 57 RCW: *Water-sewer districts*.

To implement this recommendation via regulation, the Legislature could amend Chapter 90.48 RCW: *Water pollution Control*, directing Ecology to develop regulations.

This requirement should allow for a reasonable phase in period.

Rationale

Connection fees allow a community to recover the costs of building and maintaining infrastructure for future growth. By utilizing connection fees, a community can ensure that future growth is responsible for paying for its own needs.

As with user charges, connection fees should be established and reviewed at

specific intervals to ensure they are fair and reasonable. New users should pay for their fair share of the infrastructure at the time they connect. Connection fees should be set to ensure that existing customers don't carry an undue financial burden of paying debt service for future wastewater customers.

4. Reserve Fund

Recommendation

Require small communities to establish and adequately support a capital wastewater facilities "Reserve Fund" that is dedicated to paying for wastewater infrastructure and equipment replacement. The wastewater facilities reserve fund should be financially accounted for and managed separate from the utility's general fund. The reserve fund may be funded with sewer user charges and connection fees or other local government financial resources.

Small communities should re-evaluate the required balances and funding levels for the Reserve Fund based on the capital and equipment replacement needs outlined in the General Sewer Plan.

Potential Implementation Actions

To implement this recommendation via statute, the Legislature could amend the following statutes:

- Chapter 35.67 RCW: *Sewerage systems - refuse collection and disposal* (cities).
- Chapter 36.94 RCW: *Sewerage, water, and drainage systems* (counties).
- Title 57 RCW: *Water-sewer districts*.

To implement this recommendation via regulation, the Legislature could amend Chapter 90.48 RCW: *Water pollution Control*, directing Ecology to develop regulations.

This requirement should allow for a reasonable phase in period.

Rationale

Wastewater facilities should be considered assets that must be professionally managed like a business. Asset management is an accounting and public policy approach to infrastructure that considers depreciation and infrastructure net worth. By establishing and adequately funding a “Reserve Fund” for wastewater utilities, communities will be far better prepared to replace equipment and capital facilities at the end of their design lives.

While it is unreasonable to expect all communities to fully save for the entire cost of capital infrastructure projects, the reserve fund should be managed to provide a down payment on future infrastructure. Even a relatively modest reserve fund can be a significant help to an infrastructure project, either by expediting the planning phases, or leveraging additional state and federal grant and loan funding for planning, design, or construction.

5. Sewer Use Ordinance

Recommendation

Require small communities to establish and enforce a sewer use ordinance that restricts certain connections and wastes to protect a local government’s investment and enhance the wastewater treatment’s process stability and treated effluent quality. The sewer use ordinance should be reviewed and evaluated as necessary but at least every two years and modified as needed to ensure the operational integrity of the utility.

An example *Model Sewer Use Ordinance* is available from Ecology. The sewer use

ordinance should include, but not be limited to the following:

- Prohibit inflow sources, (for example, extraneous water generally associated with storm events such as downspouts, area drains, residential sump pumps, connections from storm sewers, etc.) into the sewer system.
- Require that new sewers and connections be properly designed and constructed.
- Prohibit introduction of toxic or hazardous wastes into the community’s sewer system in an amount or concentration that endangers the public’s safety or the physical integrity of the system which may cause violations of the community’s National Pollutant Discharge Elimination System (NPDES) permit or State Waste Discharge Permit.
- Provide assurances that all existing and future residences will connect to the sewer system within a reasonable time after project completion.

Potential Implementation Actions

To implement this recommendation via statute, the Legislature could amend the following statutes:

- Chapter 35.67 RCW: *Sewerage systems - refuse collection and disposal* (cities).
- Chapter 36.94 RCW: *Sewerage, water, and drainage systems* (counties).
- Title 57 RCW: *Water-sewer districts*.

To implement this recommendation via regulation, the Legislature could amend Chapter 90.48 RCW: *Water pollution Control*, directing Ecology to develop regulations.

This requirement should allow for a reasonable phase in period.

Rationale

Sewer use ordinances are developed and enforced to ensure that the integrity of the collection system and proper function of the treatment system is protected. Extraneous water from roof drains or basement sumps taxes the capacity of the wastewater system. Disposal of dangerous wastes (from homes or industries) can damage the physical integrity of the sewer system and interfere with the proper operation of the treatment plant. Universal connection requirements and properly installed connections work to prevent infiltration, and protect human health. Through the adoption and enforcement of such sewer use ordinances, communities also help ensure safety, system integrity, and consistent treatment.

6. State Financial Assistance/Local Commitment

Recommendation

The state should establish dedicated grant and loan resources for financially distressed small communities. State agency grant and loan programs should focus on the financial capacity and project affordability for residential customers in small communities.

The state should establish uniform requirements for eligibility to participate in state-funded infrastructure programs. Requirements would include:

- i. An up-to-date Capital Facilities/General Sewer Plan.
- ii. Adoption, routine review and use of a fair and equitable user charge system.
- iii. Adoption, routine review and use of an adequate connection fee system.
- iv. Establishment of a dedicated Reserve Fund for wastewater infrastructure.
- v. Adoption and enforcement of a sewer use ordinance.

Potential Implementation Actions

To implement this recommendation the Legislature could amend statutes and budgets for state agencies providing financial assistance for wastewater facilities to assist small communities, and direct infrastructure financing agencies to award priority consideration to small communities that adopt recommendations 1-5.

Rationale

The cost of wastewater infrastructure in small communities in Washington State has skyrocketed in recent years and in many cases has become unaffordable, even under good financial planning and sound operation and maintenance. Meeting new permit requirements, often with more stringent discharge limits, can require new and costly technology.

Small communities particularly rely on state and federal dollars in the form of state and federal low interest loans and grants for subsidies that would otherwise create a huge financial burden on local residents and businesses. These small communities are often in areas of our state that have the lowest median household income, and where residents and small businesses can least afford high utility costs.

Because of the intense competition for the limited state grant and loan funding available, small communities have felt compelled to seek funding directly from the Legislature for earmarked funds to help with infrastructure needs. The trend toward this approach may be reversed by the Legislature providing dedicated state financial assistance programs targeted at small communities.

A professionally managed utility that has maintained its wastewater infrastructure assets will be better prepared for any financial assistance available. To encourage a more businesslike approach, at least the five elements of proper wastewater asset management above are to be required for state financial assistance.

7. Commercial and Industrial Infrastructure Needs

Recommendation

Target state community economic development grants and loans for industrial and commercial infrastructure projects in small communities. Targeting these sources of funds to commercial and industrial infrastructure projects will help ensure that residential sewer users in small communities are not unfairly burdened.

Potential Implementation Actions

To implement this recommendation, the Legislature could amend statutes for state agencies providing financial assistance for community economic development.

Rationale

Most state financial assistance for infrastructure creation is targeted toward residential users. Typically, local communities provide the wastewater infrastructure necessary for industrial and commercial enterprises. Without state assistance, local residential ratepayers often pay for the additional infrastructure required. The state's role in nurturing local industrial and commercial enterprises can also protect the residential ratepayers in these communities.

Most communities work hard to develop fair and equitable user charges for all rate payer

classes. Some communities have attempted to attract and retain commercial and industrial entities with wastewater infrastructure that includes economically favorable sewer user charges that may unfairly burden residential rate payers.

8. Small Community Technical Assistance

Recommendation

Provide additional staff and resources to the Small Community Initiative (SCI) in order to make available effective early intervention technical assistance statewide. SCI assistance includes, but is not limited to, the following:

- Information and technical assistance regarding state and federal regulatory requirements.
- Information and guidance on state and federal funding options.
- Assistance to local governments with coordination and communication with state and federal agencies involved in the regulatory and funding requirements.

Initiate and develop a state "Self-Help" program that will provide small communities with technical assistance that will allow them to draw on their own resources – human, material and financial to solve local problems related to wastewater and other infrastructure challenges. This program could be modeled on historical efforts by Ecology to develop a Self-Help program in the 1990s.

Potential Implementation Actions

Small Communities Initiative. To implement this recommendation, the Legislature could provide additional budget and statutory directives to provide a

substantive ongoing statewide “Small Communities Initiative” program within the state’s existing agency structure.

Self -Help Program. To implement this recommendation, the Legislature could provide a statutory directive for a for a “self-help” program and provide funds to staff the self-help program within the state’s existing agency structure. The Legislature could authorize a study to determine staffing levels needed for an effective program with a statewide reach.

Rationale

With the increasing number of small communities simultaneously struggling to comply with health and environmental regulations and maintain economic viability, now is an optimal time to provide adequate resources to meet those needs through early intervention and technical assistance.

State agencies have already demonstrated successes with hands-on technical assistance provided to small communities, and an agency structure presently exists:

In 1999, CTED, Health, and Ecology began the Small Communities Initiative (SCI). Limited agency staff (presently two FTEs statewide) provide technical assistance to selected communities. Existing resources cannot possibly meet the ever increasing demand and complexity of issues.

With no direct resources targeting communities, Ecology in the mid 1990s, developed a “Self-Help Program,” which was patterned in many respects around the strategies outlined in *The Self Help Handbook for Small Town Water and Wastewater Projects* by Jane W. Schautz and Christopher M. Conway. Some of the strategies include:

- Choose the simplest solution.
- Involve local workers.
- Borrow or lease equipment.
- Cooperate with other governments.
- Use volunteers.

The program was successful in several communities and saved an average of approximately 20 percent of project costs compared to the original planning estimates. Ecology believes self-help programs can substantially help save state and local financial resources. However, they require on-going state investments, and a self-help program likely would require an appropriation for such projects, while the program is initiated.

9. Coordinated Infrastructure Assistance

Recommendation

Provide basic staffing and resource needs for the Infrastructure Assistance Coordinating Council (IACC). By formally recognizing their role, the Legislature will make the IACC more able to coordinate infrastructure assistance among state agencies to better assist small local governments. Such coordination will help the state better provide financial information, training, and best management practices to small local governments. Also, the coordination will build viable, sustainable infrastructure support for small local communities. The state should take a formal role in this coordination process and identify opportunities for small communities participate. Expertise and technical assistance that could be provided by IACC include, but are not limited to:

- State and federal infrastructure financing, assistance with an interactive website with tools for finding funding

assistance, program information and contacts, and technical resources.

- Capital facility planning, value engineering, public involvement and outreach, and land acquisition.
- Procurement, selection and management of professional engineering services, contracting and construction management.
- Development of sewer and stormwater utility rate systems and sewer and stormwater user ordinances.
- Asset management, accounting and financial responsibilities for managing a sewer and stormwater utility based on good business practices and meeting state audit requirements.
- Environmental and cultural resources review that are required to obtain state funding.

Potential Implementation Actions

To implement this recommendation the Legislature could provide recognition and budget for the Infrastructure Assistance Coordinating Council (IACC).

Rationale

In times such as these, when small communities often do not know how to balance their fragile economies with infrastructure needs nor where to turn first, the Legislature can facilitate early intervention by institutionalizing and adequately staffing interagency coordination. The assistance that would be provided with measureable outcomes is in the recommendation itself above. An unfunded framework for such coordination, which has yet to be formally recognized and staffed, has long existed.

The Infrastructure Assistance Coordinating Council (IACC) is a nonprofit organization made up of staff from state and federal

agencies, local government associations, nonprofit technical assistance firms, tribes and universities. It has been in existence for more than 16 years. The mission of IACC is stated as follows:

“The IACC is dedicated to helping Washington communities identify and obtain resources they need to develop, improve and maintain public works programs. Together with the IACC, communities are better able to provide the infrastructure necessary to enhance, preserve and protect Washington's environment and quality of life.”

This mission fits well with providing assistance to communities throughout the state and many of the resources are targeted at small communities that are in need of additional technical and financial resources. The current capacity for IACC to provide assistance and current information to Washington communities is severely limited because IACC has no permanent staff and the *only* financial support for IACC comes from proceeds from the annual conference. By formally supporting coordinated infrastructure assistance in conjunction with enhanced technical assistance resources (Recommendation 8), the Legislature would significantly help provide cost-effective assistance to infrastructure construction for small communities.

10. Growth Management Act (GMA)

Recommendation

Resolve the statutory inconsistencies between state infrastructure financing agencies regarding when GMA compliance must be achieved for projects to be eligible for funding.

Potential Implementation Actions

To implement this recommendation the Legislature could amend statutory provisions of:

- RCW 70.146.070 *Grants or loans for water pollution control facilities — Considerations* and
- RCW 43.155.070 *Eligibility, priority, limitations, and exceptions*.

Rationale

The statute that sets the criteria for CTED loans (RCW 43.155.070 *Eligibility, priority, limitations, and exceptions*) requires communities be in compliance with the Growth Management Act (GMA) in order **to apply** for financial assistance from CTED. Ecology's Water Quality Program financial assistance statute (RCW 70.146.070 *Grants or loans for water pollution control facilities — Considerations*) require local governments to be in compliance with GMA **in order to receive** funds.

These eligibility differences not only cause confusion among local governments, but also cause unnecessary delays of projects needed to improve and protect water quality. Unless there is a compelling reason why these two statutes are different, the Legislature should align these statutory requirements or otherwise clarify the apparent contradiction.

Overview of the Case Studies

Ecology prepared the following case studies for the Legislature, agency policy makers, and community leaders. The studies portray infrastructure challenges faced by small communities, the history behind these challenges, and the community’s approach to addressing them. The experiences of these communities played a vital role in the development of specific recommendations presented in this report. The early intervention recommendations, if implemented, could prevent similar impacts challenges in other small communities as their wastewater infrastructure ages and begins to fail.

Elected and appointed officials from across the state can appreciate the challenges that the case study communities face and learn from their experiences. Officials may also find the statewide inventory of small community user rates helpful. This inventory was compiled in mid 2008 and is presented in Appendix A.

Ecology (in coordination with CTED) chose the case study communities based on the need to present a diverse cross section of community types and challenges. The communities are not an exhaustive inventory of small communities facing infrastructure needs and individual communities or projects are not prioritized. Each represents a “blame free” learning opportunity. Each community also highlights one or more of the early intervention recommendations.

Each case study includes, but is not limited to:

- Location and historical perspective.
- Existing wastewater treatment facilities.
- Wastewater facilities need.
- Past and present user rates.

- Costs and potential or secure funding sources.
- Other commitments, large debts, or other infrastructure projects needed.
- Public involvement and acceptance.
- In their own words – local officials’ remarks.
- Local contacts.

Communities selected:

The complete list of communities interviewed for the Case Study report is shown below (sorted by Ecology Regional Office area)

Eastern Regional Office (Spokane)	Central Regional Office (Yakima)
Lind Rosalia Tekoa Wilbur	Cashmere Klickitat Mansfield Rock Island
Northwest Regional Office (Bellevue)	Southwest Regional Office (Lacey)
Concrete Skagit County - Big Lake Water and Sewer District Sultan	Cathlamet Hoodsport Raymond South Bend

Case studies are presented in the following general order: 1.) Completed projects and those where all funding sources are secured. 2.) Projects in design where funds for construction are proposed. 3.) Case studies of projects in preliminary planning, where final costs and funding sources are uncertain.

The following is a summary of unsolicited comments and recommendations from the “In their own words” sections of the case studies. The comments were repeated at least once and often more frequently, but were offered independently and separately.

- Utility rates must be raised on a regular basis to establish a reserve fund and not wait for infrastructure problems to occur.

- More funding is needed to support infrastructure/mandates. (For example: when water quality standards go up, many small communities will need help meeting these new standards.
- More oversight on administration of utilities (rate increases, having reserves, etc.).
- More funding to the Small Communities Initiative (SCI) to educate small communities.
- More collaboration between community, funding agencies, and elected officials.
- There should be training/education made available that is developed specifically for public officials and public works directors.

- Communities should be encouraged to look into the regional approaches to wastewater management.
- Communities need help with land acquisition; it is harder than it looks.
- The Legislature and funding agencies need to be more proactive.

A table entitled “Just the Facts” is provided with a summary of particularly relevant information about each of the Case Study Communities. This table is presented inside the back cover of this report.

The location of these communities is shown on the state map on the back cover of this report.

KLICKITAT, WASHINGTON

Klickitat County

Location and historical perspective

The unincorporated community of Klickitat is located in Klickitat County. It was originally settled in 1890 and developed as a mill town. Historically, the local mill was the largest employer, but when the mill closed in 1994 many well paying jobs were lost. Since the closure, there has been a slow decline in population and most jobs now require travel outside of the community. Klickitat has a population of about 417 people with a relatively low median home value in the community of \$69,000.

The community elects a community council, but does not have its own water and wastewater infrastructure. Instead, the community receives services from the Klickitat County Public Utility District (PUD). The PUD manages five community sewer systems: Klickitat, Lyle, Roosevelt, Glenwood, and Wishram. It also maintains nine water systems with a common set of operators, a common board, and a pool of experience from which to draw.

Existing wastewater facilities and needs

The first treatment plant was one large septic with a direct discharge to the Klickitat River. The discharge was about 12 miles upstream where that river joins the Columbia River. The oldest parts of the collection system date back to the 1940s. The system was upgraded in 1954 to include primary treatment, chlorination, and solids treatment. In 1972 the plant was upgraded again, this time to provide secondary treatment, but the design made the plant difficult to operate. The PUD took over the system in 1977 and built a dike to protect the facility from floods. Over the years it has made many small upgrades to keep the plant operational and has been replacing the worst sections of the collection system.

Facilities constructed and costs

The new treatment plant was constructed in 2006 and went online in 2007. The system is almost entirely new, and the design is specifically focused on an easy to operate, low maintenance, and low cost facility. The wastewater system features a Septic Tank Effluent Gravity (STEG) collection system. Individual homes are connected to interceptor tanks that function like septic tanks, providing primary treatment. The PUD inspects each tank every six months and pumps the tanks as needed. Because of this design and the careful management of the septic tanks, the collection system and treatment plant are much smaller than would otherwise be required, saving a considerable amount of money.



Klickitat community's new wastewater treatment plant up and running. *Ecology photo*

The wastewater treatment plant is a recirculating gravel filter (RGF), a simple, low maintenance system that can provide excellent effluent quality for small systems. The plant disinfects with ultraviolet (UV) radiation and discharges to the Klickitat River. This system is a significant improvement over the past facility and as a result, the PUD is: “Not constantly dealing with emergencies, but instead putting our time into operating the system.”

The project was funded with a combination of state and federal grants and one (1) Clean Water Revolving Fund Loan from the Department of Ecology. The loan was issued at zero percent interest for \$559,635 leaving over 90 percent of the \$7 million project cost to be funded with grants. The complete financial package offered to the community is shown in Table 1.

Table 1. Funding received for design and construction.

Funding Program	Amount
WA State Department of Ecology (Ecology) Centennial Clean Water Fund Grant	\$2,153,607
Ecology WA State Revolving Fund Loan	\$559,635
US EPA State and Tribal Assistance Grant	\$1,431,100
Community Development Block Grant	\$1,000,000
WA State Special Appropriations Grant	\$1,600,000
Klickitat County Debt Reduction Assistance	\$215,000
Loan Subtotal	\$559,635
Grant Subtotal	\$6,399,707
Total Project Cost	\$6,959,342

Agreements, legal issues, and timelines

In 1994, Ecology and the PUD entered into an agreement to fix all of the district’s treatment plants in the following order: Wishram, Lyle, Klickitat, Glenwood, and Roosevelt. A change in the order of construction left Klickitat with a lawsuit from Columbia River Keepers for noncompliance with its permit. The two arrived at a quick settlement that required the PUD to complete the upgrade by 2007, along with other arrangements.

Because of the settlement, the timelines for the Lyle and Klickitat projects overlapped, which made the communities have to compete for the same pool of grant and loan assistance. The Klickitat project was then delayed by one year because funding was unavailable. One positive side effect of the lawsuit was to raise the political importance of the project in Klickitat, which helped make state appropriations and federal grants possible.

Sewer user rates

Homeowners of each community sewer system managed by the PUD pay for all of the infrastructure and operations required to maintain their systems. In Klickitat, 184 sewer connections share the entire cost of operating and paying for the plant upgrade.

The current sewer rate in Klickitat is \$51.38 per month (the community also pays a water rate of \$45.91 per month). Prior to 1992, when rates jumped to \$24, sewer rates were only \$18 per

month. Rates have increased steadily from 1992 to today. During the planning stage of the project, estimates of sewer rates were in the \$90-\$120 range. Rates were held to their current levels due to a combination of state and federal grant and Ecology's low interest loan assistance.

Other infrastructure initiatives and commitments

The community has also recently gone through a significant and expensive upgrade to its drinking water system. In 1986 the water system was declared an imminent health threat. As a result, the PUD closed the surface water plant and replaced it with a deep well. This well required additional treatment to remove iron, which increases the required maintenance and cost to operate the system.

Community involvement and acceptance

The local community initially was very resistant to the project. The Department of Community, Trade and Economic Development (CTED), Small Communities Initiative (SCI) staff was instrumental in generating community acceptance. SCI staff worked diligently with the community to make the project more palatable. Over 80 community meetings were held between the time of the lawsuit and final construction of the project.

In their own words

- Success of this project was due to everyone participating, including: Community Council; PUD; Ecology, other funding agencies; local, state, and federal elected officials.
- To quote the now retired district staff member - Doug Miller: "You know what they say about too many cooks in the kitchen? Well this time it worked out just fine; you ended up with a pretty decent meal."
- Doug is a huge advocate for Septic Tank Effluent Gravity (STEG) sewers with Re-circulating Gravel Filter (RGF) treatment technology for small communities.
- Doug's advice to other communities is: If you are working through a sewer upgrade project, start from day one to get the community behind you and your project. The community needs to feel like part of the team, pushing for success. The value of having public utility systems is a huge boon to the state because of the ability to pool resources across many small jurisdictions (engineering, operations, accounting, and construction oversight) to meet infrastructure needs.

Local contact

Tim Furlong, Director, Klickitat Public Utility District
(509) 773-7639

CONCRETE, WASHINGTON

Skagit County

Location and historical perspective

Concrete, WA was founded around the logging industry and the local Portland Cement manufacturing plants. Logging and cement processing have declined in the area, so schools and small businesses are the largest employers in town. Most of the citizens commute out of town to work, traveling as far as Bellingham and Seattle (over an hour to each location). The town has a population of 845 and provides service to 386 sewer accounts.

Wastewater facilities needs

The town of Concrete's former wastewater treatment plant (in use until last month) discharged, and the new plant discharges into the Baker River, a pristine water body that is an important salmon core habitat area. The town's previous treatment plant was an old, overloaded aerated lagoon facility that did not meet wastewater treatment standards. In addition, the poor reliability of the overloaded lagoons endangered the Baker River's designated uses as an important fishery for sportsmen and tribes. The town's treatment plant operated at over 100 percent of its permitted capacity in 1996. This led Ecology to issue the town a Notice of Violation of its discharge permit, and eventually to issue a negotiated order requiring the town to upgrade its wastewater treatment plant. The town has been, and continues to work on, repairing its collection system to reduce infiltration and inflow leaking into the collection system.



The City's aging former facility was unable to meet treatment standards. *Ecology Photo*

Facilities constructed and costs

The town started the planning process for its new plant in 1999. A series of engineering consultants worked on the project, proposing solutions that ranged from sequencing batch reactors (SBR), to constructed wetlands, to membrane bio reactors (MBR). Because of the limited area available for construction, the final decision by the town was an MBR process.

By 2004, the town had completed design of the MBR treatment plant and submitted applications for funding. The town received partial funding that year. In 2005, the town received a \$24,000 grant from the Washington State Department of Community, Trade, and Economic Development (CTED) to perform a value engineering study of its design. The study team generated many ideas to reduce the cost of the treatment plant or to add value to the project. Unfortunately, many of the

suggestions were not able to be incorporated, but those that were resulted in a project cost savings of \$160,000.

In 2006, the successful low bid was \$6 million; however, since construction began, the project was plagued by cost overruns and delays. Construction change orders from the contractor increased the construction cost by over \$600,000. The construction management consultant's original contract was negotiated with the town for \$198,000, but the consultants price increased significantly over this negotiated amount. The town has refused to pay all the increased costs demanded by its consultant. At one point, the consultant left the job over the conflict. At another point, a sub consultant stopped work because it had not been paid by the construction management consultant. To resolve the situation, the town hired the subcontractor directly to ensure they were paid and the work was done.



Inside Concrete's new facility, up and running since September, 2008. Ecology Photo

The town feels that poor communication within the design team and between designers, the major equipment vendor, and contractor led to significant problems, inadequate work, and delays in construction. Project startup was delayed by ten months, from the original date of December 2007 to September 2008.

Part of the problem can be traced to the town's lack of internal ability to manage a complex project such as this. This lack of internal ability resulted in it relying heavily, possibly inappropriately, on its engineering consultant to direct project decisions. Unfortunately, the consultant did not adequately budget resources to maintain the level of oversight the town expected, which resulted in poor responsiveness and delays. Additionally, the quality of the design prepared by the consultant led to several changes due to errors and omissions. It also contributed to project delays.

Part of the Community Development Block Grant received (shown in Table 1) was specifically set aside for the town to hire a grant manager who was solely responsible to the town. The grant manager helped the town comply with the requirements of the various grant and loan agreements that funded the project. The town was very excited by how successful this aspect of the project was. It would have been preferable to have this consultant in place earlier in the planning process to ensure that its interests were protected. The town may have been better served if that consultant's scope of work was expanded to include overall project management responsibilities.

Table 1 shows the final funding package for the construction project.

Table 1. Funding received for design and construction.

Funding Program	Amount
Department of Ecology Centennial Clean Water Fund Grant	\$625,900
Department of Ecology Loan	\$625,900
Community Trade and Economic Development (Community Development Block Grant)	\$905,000
Skagit County Facility's Grant	\$100,000
USDA Rural Development Loans	\$3,037,200
USDA Rural Development Grant	\$2,000,000
Loan Subtotal	\$3,663,100
Grant Subtotal	\$3,630,900
Total	\$7,294,000

Note: The final cost includes \$675,000 in change orders for construction and cost overruns for construction management from the original contracts.

User rates

The community had no outstanding debt on its sewer system when the project began. Wastewater system debt is now \$3.7 million, and it represents a large portion of the cost to ratepayers. The town of Concrete pays one of the highest sewer rates in the state at \$79.87 per month. This rate covers operation and maintenance costs and debt service, but is not enough for the town to save for equipment replacement. The timeline for user rate adjustments follows:

1. Five years ago sewer rates were only \$23.05 per month.
2. In 2006 and 2007 residents saw \$10 per month rate increases each year.
3. In 2008, sewer rates jumped dramatically from \$45 per month to \$79.87 per month for each household in town.
4. The town may have to adjust rates in 2009 to account for the final construction costs.

The rates could have been much worse. Self-financing the proposed new facility (assuming a 20-year bond rate of five percent per year) would have resulted in a minimum sewer rate of \$110 per month.

Other infrastructure initiatives and commitments

The town has a spring-fed high quality water supply. The water system is simple and easy to maintain, which keeps system expenses low. The water system also has an excellent customer in the Advance H₂O water bottling plant. The plant typically buys one-third of the water the town produces. This revenue is one of the reasons that drinking water rates are so low in town (\$23.05 per month). The town is slowly replacing old water pipes throughout its distribution system, but has no major infrastructure projects on the radar.

In their own words

- The large increase in sewer user rates (\$40 in 3 years) seriously strained relationships between the elected officials, town employees, and local citizens. If each former council could have raised rates in its time, rather than putting it off onto future councils, this project would have caused fewer hard feelings for the citizens.
- Communities should carefully interview and check the references for their project manager and engineering firm. And after you hire them, do not blindly trust your contractors. Instead, stay involved in the communication chain and decision process.
- town officials believed they were let down by their engineering consultants. Their experience with a grant manager, who was solely responsible for the town's interests, showed them another approach. The town's advice to communities starting large projects is to hire an independent agent to represent community interests to the engineers, project managers, and construction contractors that are hired to implement the project.

Local contacts

Judd Wilson, Mayor

Andrea Fichter, Clerk-Treasurer

Alan Wilkin, Public Works Supervisor

(360) 853-8401

MANSFIELD, WASHINGTON

Douglas County

Location and historical perspective

Originally developed as a railroad town, Mansfield will celebrate its 100th anniversary in 2009. The town has an existing population of 330, and lies at the heart of a wheat growing area. It is largely a farming community, but some residents choose to commute to work to larger surrounding cities such as Chelan and even Wenatchee about 60 miles).

About 65 percent of the population is low to moderate income, and approximately 40 percent live in subsidized housing.

Existing wastewater facilities and needs

The following is a record of actions the town has undertaken to address its needs and the events that led up to the current project:

- The sewer collection system was constructed in 1952 with discharge to a community septic system drainfield.
- Present unlined wastewater treatment lagoons built in 1974 were originally designed and approved as non-discharging (gradual seepage and evaporation) lagoons.
- After an overflow event in 1977, a 3.7-acre spray field was acquired and irrigation equipment was installed adjacent to the lagoons. Irrigation of lagoon effluent was to avoid uncontrolled overflows of inadequately treated sewage.
- In 1996, the then aging collection sewer system was lined with plastic to limit infiltration of extraneous groundwater.
- Since 1999 there hasn't been an effluent and the town has not used the spray field. Unchecked leakage and evaporation have kept up with the influent flowing to the lagoon system.
- The town's State Waste Discharge Permit required the town to develop several reports to comprehensively assess the entire collection and treatment system and potential impacts to groundwater quality. Mansfield submitted a Groundwater Quality Evaluation Report in 2003.
- Comparisons between in all parameters measured (for example, nitrogen, phosphorus, total dissolved solids and chloride) as ground water was monitored below the lagoon site demonstrated clear increases between 1999 (when irrigation ceased) and 2003. Total dissolved solids and chloride have increased above Ground Water Quality Criteria.
- The 2003 report concluded that the wastewater treatment facility needed to be upgraded as a result of the wastewater treatment lagoons leaking to ground water.



Subsidized apartment housing in Mansfield provides some population stability in the community, but it also echoes the economic climate. *Ecology Photo*

- The engineering report for the wastewater facilities improvement project was approved by Ecology in December 2006.
- The total cost of the wastewater facilities is now estimated to be \$2.4 million.
- Including Legislature's proviso of \$960,000 (special capital budget appropriation) and other grants and loans, all funding was secured in 2007.
- In August 2008, design of the upgrade was approved by Ecology.



Current lagoons are leaking into ground water, causing need for an upgrade. Ecology photo

The town has not used the spray field since 1999. After that time, unchecked leakage and evaporation have kept up with the influent flowing to the lagoon system.

Facilities being constructed

Mansfield proposes to expand and line the existing wastewater treatment lagoons and install center pivot irrigation onto town owned property. Most importantly, the project will effectively stop nearly all leakage of inadequately treated wastewater into the ground water. This will allow for dedicated crop irrigation onto an alfalfa field for additional treatment and use of the treated wastewater.

The bottom line-costs

Officials estimated a \$121 per month user rate if all funds for the project were secured as loan money. town officials believed if they proposed any rates in excess of about \$55-\$60 per month, the project would be considered unaffordable and would not be completed. In the fall of 2006, Mansfield opted to initially pursue grant sources of funding. The town's officials directly approached their local state representatives for possible funding through the state Legislature.

All needed funding is presently secured. The project funding picture began to take shape in April of 2007 when Mansfield was identified in the State Capital Budget for a special proviso of \$960,000 town officials had requested. After they secured this proviso, the town officials applied for a Public Works Trust Fund Construction Loan, and the town received this loan from the Washington Public Works Board in May 2007. In November 2007, Mansfield successfully applied for a Community Development Block Grant. Table 1 shows the project funding package.

Table 1. Funding package for planning, design, and construction.

Funding Program	Facilities Plan	Design and Environmental Review	Construction	Total
Centennial Clean Water Fund Grant 2007 Legislative Proviso Appropriation			\$960,000	\$960,000
Public Works Trust Fund (PWTF) Planning Only Loan	\$42,700			\$42,700
PWTF Pre-Const. Loan		\$249,090		\$249,090
PWTF Const. Loan			\$235,600	\$235,600
Town of Mansfield		\$12,910	\$12,400	\$25,310
Community Development Block General Purpose Grant			\$960,000	\$960,000
Loan Subtotal				\$527,390
Grant Subtotal				\$1,920,000
Total Project Cost				\$2,472,700
Project Funding Status	ALL FUNDING SECURED			

Sewer user rates

In order to pay for anticipated new debt incurred as a result of the wastewater project, Mansfield has been raising monthly sewer rates every 6-12 months since 2005, when the monthly rate was only \$17.00. The town also recently raised the sewer hookup fee from only \$350 in 2006. Currently, the monthly sewer rate is \$49.50 and the connection fee is \$1,250. town officials believe these approximate levels will be adequate to complete and maintain the project, but they are considering one more increase of up to \$7.50 depending on the final loan amount needed. In the future, the town expects to have annual three percent increases to keep up with inflation for continued operation and maintenance.

Mansfield recently used loan funds to complete a major water line replacement project, with \$263,294 in debt remaining. Also on its plate is \$265,574 in debt from the 1996 sewer collection system rehabilitation work. The repayment period for most of this debt extends at least until 2030. Aside from these recent projects, simply maintaining town roads and infrastructure causes a large burden for such a small town and resident base.

In their own words

- We are frustrated by unfunded mandates. Small communities have to meet the same regulatory requirements as larger communities (without the economies of scale larger communities have).
- We had what was a comfortable relationship with an engineering firm, but that relationship ended when the town missed a key federal grant deadline.
- All communities need to keep a “hands-on approach” with engineering firms, as they need to work for the community, instead of being allowed to set the pace themselves.

- In 2007, we terminated design contract with one consultant and went through the procurement process and contract negotiations to retain another consultant. This delayed the project by at least six months.
- Property acquisition always takes longer than expected (for this sewer project it has taken almost four years).
- If communities opt to go to the Legislature, they need to be persistent so the community is on the Legislator's "radar screen."

Local contact

Tom Snell, Mayor
(509) 683-1112

RAYMOND AND SOUTH BEND, WASHINGTON

Pacific County

Raymond and South Bend, Washington are separate cities about four miles apart in northern Pacific County. Each city has its own unique character. Putting aside past rivalries and mistrust, the two cities have, in recent years, developed similar visions and specifically embraced the efficiencies of building a regional wastewater treatment plant to serve both cities and their respective urban growth areas. Therefore, for purposes of this report, they are treated as a single case study.

Location and historical perspective

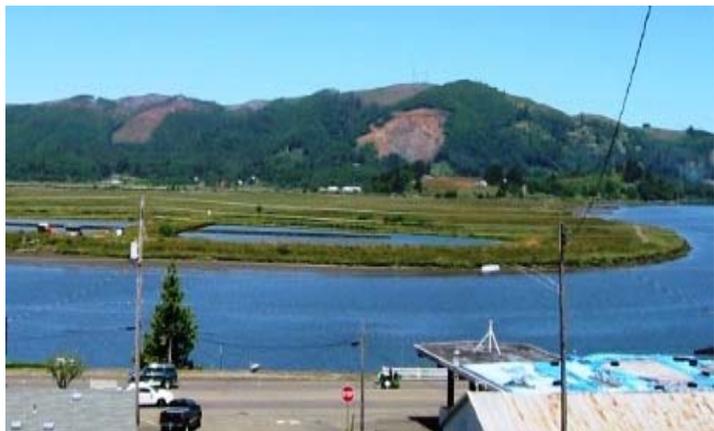
Raymond and South Bend lie near the mouth of the Willapa River on the Pacific Coast Highway (U.S.101). The Willapa Bay estuary is extremely productive and its water quality has allowed for largely unrestricted shellfish harvesting.

In the early 20th Century, Raymond had a population of 6,000 and had a reputation as a wild and woolly lumber mill town. Raymond's most active years were from 1912 to 1932, when 20 mills and factories lined the river bank. Raymond was largely supported by the logging industry, which has declined in recent years. Today, a single high-technology sawmill owned by Weyerhaeuser Inc. dominates the Raymond waterfront.

South Bend is the Pacific County Seat and is supported, to a large extent, by three seafood packing plants. Both cities have large numbers of county workers in their populations.

Existing wastewater facilities

In the 1960s and early 70s both cities constructed separate unlined stabilization ponds. In the 1980s, with the assistance of Ecology grants and Environmental Protection Agency (EPA) federal construction grant funds, the ponds were upgraded to be multi-celled sewage stabilization ponds, and Raymond's lagoons were aerated to increase their effectiveness. South Bend's lagoons have remained "facultative" (non-mechanically aerated). Small cities throughout Washington, and indeed most of the United States, use similar low-capital cost, low-maintenance technology to treat their wastewater.



South Bend's current treatment facility lies in an area that is inaccessible during high tide. It will be decommissioned when the regional facility is complete.
Ecology photo

Wastewater facilities needs

Both cities will soon be required to meet new water quality-based permit limits as a result of the recently-completed *Lower Willapa River Dissolved Oxygen Total Maximum Daily Load Study*. A settlement agreement was achieved to end a lawsuit brought by an organization, Water Action Project, against the city of South Bend for violations of its discharge permit. The *Willapa Estuary Resource Management Agreement* and subsequent National Pollutant Discharge Elimination Permit puts limits on discharges of ammonia, phosphorus, oxygen demanding components of the waste stream, and it also puts a stop to the use of chlorination as a disinfectant technique. Because of the limitations of the low-technology wastewater stabilization ponds, meeting these limits with their existing treatment means is not possible. Concerns over the continued shellfish harvesting areas prompted Ecology to issue a moratorium on hookups in South Bend in 1999. That moratorium is still in effect.

The Nisqually earthquake in 2001 (approximately 70 miles away) caused South Bend's river crossing pipe to break. This break resulted in the temporary closing of shellfish harvesting in the area until the sewer was repaired. Ecology considers the repair to be "temporary" because of continued concerns about the physical integrity of the piping installation. Major upgrades to the wastewater facilities were overdue and joint planning was initiated in the late 1990s. The preferred alternative in the 2007 Regional General Sewer Plan/Wastewater Facilities Plan was a new regional facility to replace the two cities' respective outdated lagoon systems. An independent "value analysis" study also endorsed the regional concept as the most cost-effective and reliable means of meeting current and future wastewater treatment effluent limits set by Ecology and EPA.

The "regional facility" proposed

The project underway now is a joint effort by the cities of South Bend and Raymond to design, acquire construction funding and construct a regional wastewater treatment facility (regional facility) to serve both cities and their sewer service areas. Leading the joint effort are Mayors Bob Jungar of Raymond and Karl Heinicke of South Bend, who both speak of times when there was uneasiness between the two cities. That uneasiness has largely evaporated over recent years. South Bend and Raymond have developed an intergovernmental contract which governs the design, construction, and operations and maintenance of the regional facility.



Current mayors Bob Jungar (left) and Karl Heinicke (right) do what past mayors could not: work together toward a common goal.
Small Communities Initiative photo

The proposed facilities will consist of a new mechanical activated sludge plant at the site of the existing Raymond lagoons. Other key elements of the project include:

- A new wastewater transmission pipeline from South Bend to convey wastewater to the new regional plant. The aging and temporarily fixed pressure main under the Willapa River that brings raw sewage from South Bend to its current lagoon system will be eliminated.
- Upgrades to both cities' pump stations.

- A new outfall in the Willapa River.
- South Bend’s lagoon facility will be decommissioned as a sewage treatment facility.

The new regional plant will provide far greater pollutant removal than either of the existing lagoon systems can, and it will eliminate chlorination by-products from the waste stream by replacing it with ultraviolet radiation disinfection in the new regional plant.

Facilities costs

The estimated total construction cost of the regional facility is \$30 million. The proposed funding strategy includes a significant amount of state and federal grants and loans (Table 1). However, even with the most optimistic funding scenario shown in Table 1, debt service on the portion of the project funded by low interest loans proposed, operation and maintenance of the plant, and an adequate reserve fund for repair and replacement of plant equipment will result in user charges of at least \$90 per month. Both mayors see this figure as the upper end of what can be reasonably expected of their citizens.

Table 1. Estimated proposed funding package for construction.

Funding Program	Submit application by/ <i>Notification of award</i> ²	Amount that will be requested by:	
		South Bend	Raymond
State and Tribal Assistance Grant or other Federal Appropriation	End of February 2008/ <i>Winter 2008-09</i>	\$5,000,000	\$5,000,000
Public Works Trust Fund Pre-Construction Loan for design (state funding)	February 5, 2008/ <i>March 2008</i> ³	\$1,000,000	\$1,000,000
Public Works Trust Fund Construction Loan (state funding)	May 2009/ <i>Spring 2010</i>	\$1,720,418	\$5,279,582
USDA Rural Development Rural Utilities Service Loan and	Summer 2009/ <i>Winter 2009-10</i>	Loan \$1,000,000 Grant \$500,000	Loan \$2,000,000 Grant \$1,000,000
Department of Ecology Loan and Centennial Clean Water Fund Grant (state funding)	October 2009/ <i>Spring 2010</i>	Loan \$1,000,000 Grant \$500,000	Loan \$2,000,000 Grant \$1,000,000
Community Development Block Grant (state)	November 2009/ <i>March 2010</i>	\$1,000,000	\$1,000,000
Loan Subtotal		\$4,720,418	\$10,279,582
Grant Subtotal		\$7,000,000	\$8,000,000
Total		\$11,720,418	\$18,279,582
Total Project Cost		\$30,000,000 (and only \$2 million is secured to date)	

² Application submittal date is in regular font; award timeframe in italics.

³ Each city was awarded a \$1,000,000 Public Works Trust Fund loan for design. Design is presently underway.

Sewer user rates

Until recently, Raymond's citizens paid about \$18 per month in sewer user charges. South Bend residents paid \$14 per month. In the past two years, both cities raised rates. South Bend charges \$39.45 per month and Raymond's monthly user charge is now \$37.50. These levels are sufficient to pay for operation and maintenance and provide a modest reserve for repair costs at the lagoons. Both cities charge a \$1,200 connection fee. Weyerhaeuser pays its fair share as an industrial discharger to the Raymond treatment facility.

Other infrastructure initiatives and commitments

Both cities must confront other infrastructure challenges. South Bend is now completing a \$2.5 million water system improvement project, and Raymond faces a similar multimillion dollar upgrade to its water system in the near future.

Public Involvement and Acceptance

Several well publicized joint city council meetings were held as the plan took shape, yet few people attended. Articles in the local newspapers have highlighted the project and likely costs, but public acceptance of the proposed user charges is yet to be gauged, largely because of the uncertainties of the final timeline and costs.

In their own words

- Earlier city administrations should have been more far sighted and raised rates earlier to help meet (the then) future needs.
- The provision of water and sewer service needs to be run as a business instead of a charity.
- We really could not be where we are today without the help of Cathi Read of the Small Communities Initiative.
- We need a major commitment of state and federal financial assistance to be able to complete the project.

Local contacts

Bob Jungar, Mayor of Raymond, (360) 942-4107

Karl Heinicke, Mayor of South Bend, (360) 875-5571

BIG LAKE, WASHINGTON

Skagit County

Location and historical perspective

The community of Big Lake consists of the homes in unincorporated Skagit County around the edge of Big Lake, located near the city of Mount Vernon. It was settled around the beginning of the 20th Century as a logging town, but over time the community character changed to become mostly weekend or vacation homes. The community maintains a relatively vibrant local economy from its recreational opportunities and its proximity to Mount Vernon. About two-thirds of the homes now belong to permanent residents, most of whom are retirees or commuters to one of the larger surrounding cities. It has a population of about 2,000 and approximately 800 sewer accounts.

Existing wastewater facilities

The community receives its sewer service from the Skagit County Sewer District No. 2. The district owns the treatment plant and collection system, which includes nine lift stations and approximately 60 grinder pumps. The district has an elected board of three commissioners, who make the major decisions. The district employs Water and Wastewater Services (W&WWS) as a utility manager. W&WWS is a private company that manages many water and sewer systems.



The current wastewater treatment facility needs an upgrade. With the county's proposal, Big Lake will undertake construction of a reclaimed water project.

Ecology photo

The existing wastewater treatment plant (constructed in 1980, using state and federal construction grant funds) uses rotating biological contactors (RBCs) to treat its wastewater. The plant is relatively simple to operate, but can use a lot of energy. Many plants of this type were built in the 1980s. The treatment plant discharges the treated effluent nearly six miles away from the treatment plant location, into the *Skagit River*. No significant modifications to the treatment plant have been made since 1980.

Wastewater facilities needs

The treatment plant routinely meets the requirements of its discharge permit. Growth in the community has increased the volume of sewage that requires treatment (currently operating at 85 percent capacity). The district's NPDES permit requirements and good planning practices dictate that this is the right time to start planning for an upgrade to provide additional capacity.

Facilities being considered and costs

Originally, the district planned for a modest facility upgrade, using only established technology to minimize expenses. The district was prepared to self finance the plant upgrade without the assistance of grants or subsidized loans.

Skagit County then approached the district with a proposal to reclaim its wastewater and use it to augment the stream flow of Nookachamps Creek. Under the Skagit River Instream Flow Rule (Chapter 173-503 WAC, *Instream resources protection program-lower and upper Skagit water resources inventory area*) there is a limited amount of groundwater that can be used to meet future growth needs. Initial calculations indicate that the amount of water available in the instream flow rule may not be enough to meet future growth needs.

The instream flow rule allows additional groundwater withdrawals beyond the limits established in the instream flow rule if compensating mitigation is provided. Reclaiming the wastewater from the district and keeping that flow in the Nookachamps basin rather than discharging this effluent into the Lower Skagit River, may provide a way to make up for future withdrawals.

The county secured a \$250,000 Reclaimed Water Program planning grant from Ecology to investigate the feasibility of this reclaimed water project. The Reclaimed Water Grants Program was authorized by the Legislature in 2007. The reclaimed water project effectively doubles the cost of the project needed, so the district is exploring state and federal financial assistance to subsidize the cost.

Due to attentively adjusting its sewer rates and development charge, the district has accumulated \$3 million in savings in its reserve account to try to avoid the need for grants and subsidized loans.

The district adopted a comprehensive sewer plan in February 2008, that established its future needs for wastewater infrastructure. It is developing a site-specific facilities plan along with a reclaimed water feasibility study describing the specific approaches and technologies that will be used to meet these needs.

Due to attentively adjusting its sewer rates and development charge, the district accumulated \$3 million in savings in its reserve account to apply to the project. Because the project is in the early planning stages, only rough cost estimates are available. The district is using a planning estimate of \$12 million to construct the reclaimed water alternative. This cost includes up to \$9 million for the facility upgrade and about \$3 million for the reclaimed water project. The district plans to cover the costs of the upgrade by using an up to \$10 million loan from the Public Works Trust Fund and district reserves. However, the shared cost for the water reuse portion between the participating agencies has not been worked out.

Sewer user rates

The district has done a good job of keeping its sewer rates and connection (development) fees current. There were never any dramatic increases in rates. Both sewer rates and connection fee charges have been increased slowly over the life of the sewer district. The sewer rates have

always reflected the costs for operation and maintenance, debt service, and establishing a reserve fund adequate to replace the facility when necessary.

Sewer district customers currently pay \$40 per month (homes with grinder pumps pay \$9 more for the higher maintenance costs). This is up from \$32 in 1998. All the increases were \$1 to \$3 and adopted without significant protest from residents.

In their own words

- Plenty of open communication about rate increases from the customers and officials can defuse a great deal of tension.
- Both planning ahead and adopting rate increases in small increments (in order to establish a reserve fund) can cushion the financial blow.
- It is very useful to approach rate setting in a calm, businesslike manner, with enough information (rate studies) about the actual costs of providing the service.
- Successful utilities have management involvement from the beginning, long before any specific project is envisioned.
- If a utility starts looking for solutions once a problem has become a crisis, it will cost more, take longer, and be more contentious.
- Mr. Wynn believed the financial operations of wastewater utilities are as important to their long term success as the operation and maintenance of the treatment plants.
- He suggested that Ecology should focus more attention on the administrative aspects of wastewater utilities. Instead of focusing on loaning money to finance wastewater infrastructure, Ecology should use its permitting authority to regulate the administrative end of wastewater utilities.
- This oversight would insure that utilities implement standard business practices and manage their finances in order to build needed upgrades without relying on state financing or grant funding.

Local contacts

Kelly Wynn, Operations Director, Water & Wastewater Services, LLC., (360) 466-4443
Gary Stoyka, Skagit County, (360) 419-3428

HOODSPORT, WASHINGTON

Mason County

Location and historical perspective

Hoodsport is an unincorporated community that is in a particularly picturesque location adjacent to Hood Canal in northwest Washington State. Full time residents number 1,200. However, because of the proximity to Hood Canal, Olympic National Park, and its location on the Pacific Coast Highway U.S. 101, there is an influx of many summertime residents and visitors.

Did you know? Hood “Canal” is a naturally glacier-formed hook-shaped fiord considered to be a part of Puget Sound. The Canal was misnamed because of a transcription error by an 18th Century British cartographer. The water body was correctly mapped by Captain Vancouver’s exploration party as Hood “Channel.”

Existing wastewater facilities

Hoodsport is an example of a community with an overdue need for wastewater infrastructure. The area is served entirely by individual wastewater disposal systems such as cesspools, on-site septic tanks and drain fields. Most of the residential and commercial development in Hoodsport is along Finch Creek and the U.S. Highway 101 corridor. These same areas have substandard lot sizes with highly permeable soils that are poorly suited for individual wastewater disposal systems.



Hood Canal has scenes like this, but look again! Drainfields in areas of Hoodsport in such close proximity to the water can’t possibly adequately treat wastewater. Minimally treated sewage is polluting the water. Mason County photo

Wastewater facilities needs

High nitrogen and fecal coliform concentrations in the creek and canal are tied to the inadequate systems. Shellfish beds at the mouth of the creek are closed to harvesting. Nutrients from the numerous septic systems in the community contribute to problems in Hood Canal, including low dissolved oxygen and fish kills. Effective centralized advanced treatment of sewage is critically needed throughout this seemingly pristine area. Water quality, at least in the immediate areas of sewer service, will improve after local agencies complete this and other wastewater treatment facilities.

A utility district will most likely be created to manage sewer and septic systems in the region. Septic systems would remain only on the plateau several hundred yards from the shorelines, because that area is away from the water and the soil is better suited for individual disposal systems.

Cooperating instead of competing

Three adjacent areas in the middle section of Hood Canal share similar problems. These areas are the Hoodspout community; the Potlatch area, which includes Potlatch State Park; and the core of Skokomish Native American Tribal Reservation. Mason County, the Skokomish Tribe, and the Mason County Public Utility District formed a “Three Party Consortium” to sewer each of the areas. The consortium will share the planning, design, and construction costs; operation and maintenance; and management responsibilities for all three treatment systems. The facilities plan now being reviewed by Ecology evaluates the cost of consolidating all sewage flows into one wastewater treatment plant, but the cost-effective solution apparently is three separate plants that produce Class A reclaimed water to be used for upland irrigation. The benefits of this approach are:

- By keeping the water from Hood Canal, costly nitrogen removal technology is unnecessary.
- The same technology for wastewater treatment (membrane filtration) can be used, so the same staff can operate each plant.
- Even in western Washington, where water is generally plentiful, Class A reclaimed water is a marketable commodity with a favorable return.

The bottom line-costs

Providing sewer service to the areas is a very expensive proposition.

- The total project cost of the three proposed plants is now estimated to be \$22.6 million-\$24 million.
- Approximately one-third of the funding has been already secured (Table 1).
- The Hoodspout portion of the project is estimated to be \$7.5 million.
- To cover the total shortfall of \$15-16 million, the Mason County staff and the Three Party Consortium will ask the state’s Congressional delegation for federal earmarked grant funds and the 2009 Legislature for a capital budget funds proviso.

Table 1. Funding secured and needed for design and construction.

Source of Funds	Amount
2006 Centennial Clean Water Fund (Special 05-07 budget appropriation) ⁴	\$1,000,000
2003 State and Tribal Assistance Grant (STAG) ⁵	\$ 667,800
2006 STAG	\$4,300,000
2008 STAG	\$ 500,000
Washington State Parks – Potlatch Funds	\$1,050,000
Total financial assistance secured to date	\$7,517,800
Current Shortfall	(-) \$15,051,109

⁴ Legislative proviso for design of the Hoodspout and Skokomish facilities.

⁵ State and Tribal Assistance Grant (STAG) are Congressionally secured federal budget earmarks.

Sewer user rates

Local ratepayers are being asked to shoulder a major part of the cost:

- Each homeowner will be charged \$86 to \$100 per month to pay for any loan debt incurred, operation and maintenance, and an adequate reserve fund for repair and replacement of plant equipment.
- Present homeowners will be required to disconnect their present on-site systems and connect to the sewer at a cost of about \$3,000-\$5,000.
- In addition, each homeowner will be assessed a connection fee of \$5,000-\$9,000.

The state's Growth Management Act (GMA) limits the Hoodspout "Rural Activity Area" to approximately 600 existing and platted connections for sewer service. Larger boundaries could spread the burden of the sewer project, but the GMA encourages infilling wherever possible.

Our Congressional delegation and 2009 Legislature will be asked for \$15-\$16 million to make the regional "middle" Hood Canal Sewer Project affordable. "If the cleanup of Hood Canal, with its existing and potential tourism draw, is to be a state and national priority, the state and federal governments must provide funding."- Emmett Dobey, Mason County.

Public involvement and acceptance

During the past two years, 75-100 people attended each of the quarterly public meetings and heard about the estimated user charges and assessments. Currently, area residents seem most concerned about the potential changes to the character of the rural community. Even though the sewer area is limited to presently platted locations, much larger size homes could be allowed in the sewer area.

In their own words

- If the present shortfall were to be funded with bonds alone, the monthly user charges would be about \$400. If user charges are in excess of \$100 per month, the project won't likely be affordable.
- If the cleanup of Hood Canal, with its existing and potential tourism draw, is to be a state of Washington priority, the state Legislature must provide funding.
- The regional approach:
 - Helps share the financial burden.
 - Brings more of the community together behind the project.
 - Allows neighboring communities to work together toward a common goal instead of competing individually for available funding.

Local contact

Emmett Dobey, Mason County, (360) 427-9670 Ext. 263

LIND, WASHINGTON

Adams County

Location and historical perspective

The town of Lind began as, and continues to be, primarily a farming community. Most of those who are not engaged in farming work for the school or the county, and a few commute to larger cities where there are more employment opportunities. The town is located in Adams County, about 75 miles southwest of Spokane. Lind has maintained a relatively steady population, currently at 565 people (about 265 sewer connections). The mayor expects the population to stay reasonably stable, but hopes for future growth.

Existing wastewater facilities



The 55 year old Lind wastewater treatment plant still in operation. *Ecology Photo*

The town built its current wastewater treatment plant in 1953, making it “ancient” today-by engineering technology standards. The plant uses a trickling filter system to treat wastewater, which was innovative 55 years ago, but it now needs an upgrade. The disinfection system at the treatment plant was upgraded in 2002 to eliminate chlorine gas. Chlorine tablets are now used, but the plant remains basically the original 55 year old model. In the early 1990s the town did major work on its collection system to reduce infiltration and inflow. In the early 2000s the town connected about 30 homes that had previously relied on on-site septic tanks that discharged above shallow bedrock.

Wastewater facilities needs

The town has had violations of its National Pollutant Discharge Elimination System (NPDES) discharge permit, including excess discharges of solids, organic matter, and fecal coliform bacteria. However, the underlying main reasons for requiring an upgrade are the extreme age of the facility, lack of parts, and better reliability. The current plant cannot meet the new water quality standards for temperature, nitrates for groundwater infiltration, or dissolved oxygen. The permit, written May 3, 2006, contains a compliance schedule that requires the new wastewater treatment plant to be completed by December 31, 2009. The community cannot possibly meet that timeline at this point. Those more involved realistically project construction to occur in 2010 or 2011, depending on the availability of financing.

Facilities being considered and costs

The town recognized the need for a new facility in about 1997 and has been working toward it ever since. Lind originally wanted a land treatment system, but lack of available land has made that impossible. People commonly believe that land is easy to acquire for wastewater treatment systems in rural areas. For Lind, and many other towns, this is not the case. The town is now working on the third addendum to a wastewater facilities plan that was originally approved in March 1999. This amendment recommends a mechanical package plant. The preliminary estimated cost for the project is \$3 million.

Town officials have some concerns about a mechanical facility because a state Certified Class II Operator will be needed to operate and maintain it. In the past, the town has had serious problems keeping its Class I Operator. The mayor has discussed the possibility of sharing an operator with its neighbor, the city of Ritzville (15 miles to the northeast). Currently both communities have their own Class I Operator.

Acquiring the land to construct the project has been an ongoing obstacle for the town. It recently borrowed \$75,000 from the Public Works Trust Fund to purchase 24 acres adjacent to 10 acres the town believed it owned. Due to problems with the records of the town's transactions with the Burlington, Northern, and Santa Fe Railroad (dating from 1905), it is unclear who owns what. The town is currently performing a survey of this property to determine ownership.

Other infrastructure initiatives and commitments

The town of Lind recently completed other infrastructure upgrades. It:

- Repaved streets and sidewalks with help from the Washington Department of Transportation.
- Made major improvements to the town's drinking water system in the last five years.
- Built a new reservoir and a new well with the help of grants and loans from the United States Department of Agriculture Rural Development Financial Assistance Program as well as a grant from the Community Development and Block Grant.

Lind also has outstanding debt of \$1,924,000 on its sewer system from 1999 when it expanded its service to 30 homes and began to correct infiltration and inflow problems.

Sewer user rates

Current residential users pay \$40 per month in Lind, while the few businesses in town pay \$47. Those rates are up \$2 from last year's rates, which had been at \$38 per month since 1999. Prior to 1998, sewer rates were \$18 per month. The town used some of the large rate increase in 1999 to pay off debt from sewer system improvements made that year.

Another rate increase of \$2 (to \$42 per month for homes) is already scheduled for 2009. town officials know that further rate increases will be necessary to pay for the sewer project. town officials estimate that final sewer rates will be between \$60 and \$70 a month per household. These estimates are based on significant grant participation local officials anticipate will be

needed to complete the project. Rate payers have already shown their unhappiness about the \$2 increases, and the mayor and clerk are concerned about what reactions will be to the much larger ones.

Public involvement and acceptance

The project is still in the early stages, so there have not yet been any formal public meetings about it. Even so, the Mayor believed most of the residents seem to know about the project, and they aren't happy about the user rate increases. The town provided announcements about the rate increases with the utility bills, and the July 31, 2008, edition of the local newspaper included an article about the planned wastewater treatment plant.

In their own words

- People outside the town probably think it would be easy to get land for a land treatment facility, because it is a rural community, but it isn't.
- The cheapest way to solve the town's wastewater problems is a mechanical plant, but it is still very expensive per user in such a small community. town officials believe significant grant participation from federal and state agencies is the only way to keep rates affordable.
- Smaller towns have a more difficult time keeping qualified operators to run and maintain their infrastructure.

Local contact

Mayor Larry Koch, (509) 677-3241

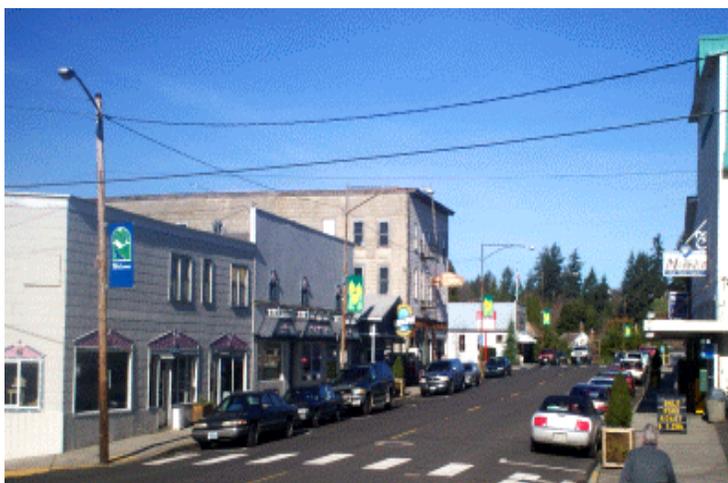
CATHLAMET, WASHINGTON

Wahkiakum County

Location and historical perspective

The town of Cathlamet is located on the waterfront of the Columbia River in southwest Washington, 20 miles west of Longview, Washington. Established as a trading post in 1846 (when the river was the main “road” in the area), it was incorporated in 1907. Cathlamet's docks once bustled with commercial fishing, canneries, and logging industry activities that were the backbone of the local economy. Today, after decades of decline in the fishing and logging industries, the docks are still used by small fishing companies, tugboat operations, and recreational boaters.

Many of the town’s 560 residents are seniors on fixed incomes. By 2012, the average age for residents in Cathlamet is projected to be 65. Another depressed economic indicator is that the current median household income is approximately 75 percent of the statewide average. Cathlamet is the seat for Wahkiakum County, a county that is considered to be economically distressed with an unemployment rate of 7.1 percent for 2007. This is nearly 130 percent of the statewide average. Even its status as county seat is a mixed blessing to city officials, as the majority of the property in town is exempted from tax roles.



Downtown Cathlamet today. *Photo from Town of Cathlamet's website*

City officials envision a future for the town much like the present. They see managed growth with substantial input from local residents. They believe many of the people who commute to the Longview area will rely on telecommuting technologies more often.

Existing wastewater facilities and water pollution control needs

The existing wastewater treatment plant consists of unlined earthen lagoons constructed in 1982 that leak into the ground water, the Columbia River, and an adjacent wetland. The lagoon dikes are fragile and have been damaged by burrowing beaver-sized animals (nutria). There is also evidence of other burrows of smaller rodents that have compromised the integrity of the lagoon dikes.

Loading to the lagoons often times exceeds their design capacity and the plant cannot be expected to reliably protect the water quality of that reach of the Columbia River. Adjacent to the

Cathlamet Lagoon System are natural wetlands at the mouth of Birnie Creek. This creek flows around the upstream side of the lagoons. As a result, the lagoons are known to leak inadequately treated sewage into this wetland.

Sewer user rates

Inside the Cathlamet town limits, residential users pay \$40 per month, whereas outside users paid \$53 in 2008. Town officials have raised rates by \$5 per year since about 2004. For many years before that, rates remained under \$20-barely enough for operation and maintenance of the system. This was mainly due to an accounting system that was not set up to save for the future. There is yet another \$5 increase in the works starting January of 2009, and the Town Council will reevaluate how much to raise rates in the future to prepare for the new wastewater treatment plant. Officials estimate that residents will be unable to afford rates in the \$60 to \$100 per month range.



Cathlamet's existing unlined sewage stabilization lagoons are sandwiched in between the wetland (foreground) and the Columbia River (background).

Cathlamet Staff Photo

Facilities being considered and costs

In order to meet treatment standards now and in the future, town officials believe a mechanical treatment facility is the most flexible alternative evaluated. The cost of the facility is now estimated to be \$12.5 million. The decommissioning of the lagoons will open the entire area to waterfront parkland and development that may defray some of the costs of the sewer project. However, the cost will likely represent a financial hardship when this amount of money is shared among such few residences—only 365 sewer connections. Therefore, town officials believe a substantial amount of grants and federal and state provided funds will be needed. A financial consultant estimated that sewer rates would need to be between \$100 and \$150 per month without any governmental financial assistance.

Funding Sources

The project is still in its early stages. Specific funding sources are not yet known, but they may include:

- State and Tribal Assistance Grant Program (The town's officials have already applied for \$1 million from this federal earmark program).
- Special Legislative proviso appropriations.
- Washington State Department of Community, Trade and Economic Development/Community Development Block Grant Program.
- Washington State Centennial Clean Water (Hardship Grants)
- Washington State Department of Community, Trade and Economic Development/Public Works Trust Fund (Loans only).

- Washington State Clean Water Revolving Fund (Loans only).
- USDA Rural Development, Rural Utilities Service, Water and Waste Disposal Direct Loans and Grants

In their own words

- Cathlamet’s user charges, connection fees, and taxes were kept unrealistically low, which barely paid for the operation of existing facilities with little or no regard to future needs. This has changed in recent years, but affordable increases will not pay for a new wastewater treatment plant.
- For many years, local officials were lulled into the belief that when wastewater treatment facilities were needed, grants would be there to pay for them. Now they realize this is no longer true.
- Sewer rates between \$100 and \$150 per month (which would result without any governmental financial assistance) are: “Seen to be an invitation to insurrection.”
- Among the challenges small towns and cities face is high turnover among elected officials. Citizens volunteer and become connected, but when they are elected to public offices, they don’t necessarily have the experience and training they need for the job. As a result, they often burn out and leave office, thus exacerbating the problems of policy and fiscal continuity.

Local contact

Richard Swart, Mayor, (360) 795-3203

CASHMERE, WASHINGTON

Chelan County

Location and historical perspective

The city of Cashmere, which was incorporated in 1904, is the acknowledged geographical center of Washington State. The city (population: 2,990) serves as a residential “bedroom” community for the greater Wenatchee area. The city is also a commercial and industrial center with many fruit related industries. Contributing heavily to the industry and sewer use are Tree Top Inc. and Crunch Pak fruit processing facilities; two fruit-packing facilities; and Liberty Orchards, a candy maker. Recently, Tree Top has temporarily closed, and its \$300,000 per year sewer use charge has ceased. Tree Top faces an uncertain future.

Existing wastewater facilities and needs

Cashmere's wastewater treatment facilities, which were constructed in the 1960s, are located on the southeast end of the city along the banks of the Wenatchee River. The city has an unlined aerated lagoon system. Effluent is disinfected by chlorination, and then this treated water is dechlorinated to meet water quality standards of the river.



Current unlined lagoons are not meeting TMDL limits for phosphorus, one of its many problems. *Ecology Photo*

Upgraded wastewater treatment facilities are needed to comply with new environmental regulations. Major concerns include:

- Total Daily Maximum Load (TMDL) wasteload allocations for the Wenatchee River-likely to require the city to meet strict limitations on phosphorous in its effluent.
- Capacity of the treatment lagoons to accommodate future organic and hydraulic loadings.
- Compliance with state groundwater quality regulations regarding leakage from the unlined lagoons.
- Limited hydraulic capacity of the River outfall and diffuser structures.
- Impacts of effluent organic and inorganic solids and temperature on the receiving water quality.

Facilities being considered and costs

All upgrades capable of meeting phosphorus removal involve some level of mechanical treatment. Facilities planning is only in the beginning stages; therefore, many unknowns remain. However, the cost-effective solution to a variable, but often high organic load and phosphorus removal now appears to be the abandonment of the lagoon in favor of mechanical treatment technology.

Possible regional approaches include providing treatment for the nearby towns of Peshastin and Dryden with the cost of such regional treatment ranging between \$25 million and \$30 million. The cost of providing treatment for Cashmere alone is estimated at \$22.5 million to \$25 million.

Many uncertainties remain for this project. The presence (or absence) of Tree Top Inc. as a sewer user, continues to be a factor in determining how big the facility will need to be, as well as how the cost will affect the residential user. Cashmere is also in the early stages of acquiring funding and is unsure of how exactly the city will proceed.

Sewer user rates

Residential users in Cashmere currently pay \$52 per month. Three years ago the monthly rate was \$40 and about 11 years ago it was only \$9 per month. In the last few years city officials have raised rates in 6 to 12 month intervals. Plans are in the works to continue raising rates, possibly up to \$100.

Monthly user fees for residents are estimated to range from \$57 per month, if 75 percent grant funding is secured up to \$112 per month, and the project receives low interest loans only. User costs for industries would be proportionately higher.

City officials are concerned that high user costs will cause some industries to move their operations out of Cashmere, causing an even bigger strain on residential rate payers.

Other infrastructure initiatives and commitments

The city has a considerable current debt, most of which is for the wastewater system. Of the \$11.6 million the city owes in long-term debt, approximately \$10 million is for the wastewater system improvements previously made to accommodate fruit processing industries. The fear is that these same industries will be leaving the city if commercial user rates become too high.

In their own words

- We need a new wastewater treatment plant to provide the loading capacity to keep jobs in Cashmere.
- Unless we receive grants for much of the cost, industries already here will move away, and new industries will bypass us.
- Simply put, without state funding, the city will lose money, businesses, and jobs.

Local contact

Mark Botello, Director of Planning and Building, (509) 782-3513

WILBUR, WASHINGTON

Lincoln County

Location and historical perspective

The town of Wilbur was originally little more than a stop-over for trappers and traders moving through the northwest. Later, settlers came to the area and it developed into a farming community. Today, while farming remains an important part of the economy, Wilbur (population 895) is now becoming a recreational center, providing services to the visitors of the Lake Roosevelt area (several miles north of Wilbur). Although retirees are attracted to the area due to a relatively low cost of living, and many residents work for the county government, most of the residents work in farming or the businesses supporting farming.



Much of the town's economy is supported by farming or farming related industries.
Ecology photo

Existing wastewater facilities

Wilbur uses a simple, easy to operate lagoon storage and treatment system. The existing lagoon cells are unlined, and Ecology is concerned that partially treated sewage is leaking into the



Wilbur's current stabilization pond for its land treatment system. *Ecology photo*

groundwater table. During the winter months, when influent flows and wet weather exceed leakage and evaporation, operators add chlorine gas and disinfected effluent discharges to Goose Creek.

The town of Wilbur maintains 8.1 miles of sewer collection pipes, many of which are 50 years old. The town has been addressing groundwater infiltration into its collection system over the past decade. In 1998 it put in 16,000 feet of new sewer pipe and added 1,500 feet of storm drain structure to help keep sump pump and surface water from entering the sewage collection system. Since then, it has been using a sewer camera to pinpoint leaks in the laterals. The town has identified and corrected several major leaks in the past eight years.

Wastewater facilities needs

The existing facility has had trouble meeting its permitted discharge limits, particularly for ammonia and fecal coliform bacteria. In 2004, an organization, Waste Action Project, sued the town for violating its National Pollutant Discharge Elimination System (NPDES) permit issued by the Department of Ecology. The town's NPDES permit regulates wastewater discharges to Goose Creek. The town settled with the Waste Action Project within about eight months. The

settlement resulted in a consent decree and an agreement to upgrade the wastewater treatment plant by December 31, 2009. The town estimated the settlement has cost \$60,000 in legal fees, expert review fees, and a required stormwater project. The town will likely incur even more costs related to the lawsuit until the wastewater plant upgrades are complete.

Facilities being considered and costs

Wilbur already submitted a draft of its planning document to Ecology for review and is completing the National Environmental Policy Act (NEPA) review on the project. The town has already secured \$475,000 in low-interest loan money to pay for the design phase of the project. Design has not yet started, so it seems unlikely that construction will be completed by the 2009 due date.

The project, described in the draft wastewater facilities plan, is an extended aeration-activated sludge plant, with a constructed wetland / infiltration discharge during the summer and creek discharge during the winter. The estimated total project cost is \$4.5-\$5 million. The town completed a value engineering study in an attempt to control the costs of the project. Wilbur has also accumulated approximately \$100,000 in the town’s sewer capital improvement account toward funding the upgrade. Table 1 lists the total project funding-to-date, secured either from outside sources or from the town’s reserves.

Table 1. Total project funding received and secured thus far and amount needed.

Funding Program	Purpose	Amount
Town of Wilbur (Capital improvement fund savings)	Project costs and matching funds for state and federal grants and loans	\$100,000
Community Development Block Grant (CDBG)	Value Engineering Study (with \$8,000 match from town)	\$35,000
Public Works Trust Fund (PWTF) Loan	Wastewater Facilities Plan, Ground Water Study, Environmental Review	\$100,000
PWTF Loan	Design of new wastewater facilities	\$475,000
	Total secured	\$710,000
	Estimated total amount needed	\$4,775,000
	Estimated amount yet to be secured	\$4,065,000

Sewer user rates and funding plan

The town is exploring all its options, but as yet has not secured construction funding. Sewer rates in Wilbur are currently \$49 per month. This rate represents a large jump in the monthly bill for residents. From the period of 1997 to 2006, sewer rates were \$27.90. In 2007, rates went to \$39 per month, and 2008 saw another increase to today’s \$49 per month rate. The town estimates that \$6 of the monthly bill is paying for past debt while \$23 is funding operations and maintenance. A total of \$20 of the monthly bill is deposited into a capital improvement account to be used to fund the project presently being planned.

Officials know that it will be necessary to increase the monthly sewer bill even more in order to pay for the planned upgrades. The town estimates that monthly sewer rates will be \$110 if the town has to pay the entire project cost in loans. If the town is able to receive 50 percent grant funding for the project (the current planning assumption), sewer rates will have to increase to

\$75 per month. The town has not yet adopted a plan to increase rates for 2009, nor to continuously increase monthly rates by small increments to cover inflation and other future costs. Wilbur is temporarily waiting to see what construction funding will be available before raising rates again.

Wilbur's residents (all now pay \$49) will pay \$110 per month if the project is financed with loans. If the town is able to receive 50 percent grants (the current assumption), sewer rates will have to increase to \$75 per month.

Other infrastructure initiatives and commitments

The town's domestic water system is not new and is getting more expensive to maintain. The town has a new water tank and is replacing sections of the distribution system as money allows. Compliance with the new water efficiency rule will be costly. Of the \$33 per month water bill, \$11 is paying debt service on loans to build a new water tank and replace some of the oldest water lines.

Public involvement and acceptance

The citizens of Wilbur are concerned about the potential for dramatic sewer rate increases. The town has tried to keep the public involved in the project as it progresses, holding several well-attended public meetings. Local newspapers covered the lawsuit and the impact it might have on local residents and their sewer rates. Recently, the mayor sent an open letter to the residents with their latest sewer bill, which discussed the entire project development process and estimated project costs.

In their own words

- In a community as small as Wilbur, with fewer than 900 people and only 420 sewer accounts, capital projects can have very large impacts on the sewer rates in the community.
- The mayor and council believe very strongly that Wilbur needs to adopt a policy or ordinance to continue rate increases in small steps. Without this it is too easy to for future councils to "let sewer rates go one more year." Future councils must be diligent to frequently review rates and increase them when needed.
- Finishing the treatment plant construction does not mean the end of the project. The town will still have to operate the new plant and continue to work on the collection system. It must continually plan for the future because as this infrastructure ages, the town needs a plan to pay for a replacement, or upgrade to allow for growth.
- A continuous effort is needed to update ordinances necessary to support the new systems.

Local contacts

Robert Wyborney, Mayor
Lynn McWhorter, Town Council
Jim Pope, Public Works Director
Stefani Bowden, Town Clerk
(509) 647-5821

ROSALIA, WASHINGTON

Whitman County

Location and historical perspective

The town of Rosalia originally developed as a hub for the local farming community and remains a good stopping point for trade and travel. Farming and support industries are still the biggest local employers. However, about half of the local workers commute to Spokane (about 40 miles to the north). The town's population is 650, and this has not changed significantly over the past decade. Although Rosalia has the potential for economic development, only four new homes have connected to the sewer system in the last eight years. There are about 25 homes in the town limits that are not on the sewer system, and potentially hundreds of platted lots that could be developed.

Existing wastewater facilities and wastewater facilities needs

The existing wastewater treatment plant is very old and cannot consistently meet National Pollutant Discharge Elimination System (NPDES) permit limits for fecal coliform or temperature. The plant is under administrative order from Ecology to upgrade its treatment plant.



The 45-year old system is showing significant deterioration, as can be seen in the crack in the contact tank used for disinfection. Ecology photo

The existing plant consists of unlined facultative (non-mechanically aerated) lagoons, gaseous chlorine disinfection and dechlorination prior to discharge to Pine Creek.

The major portion of the town's sewer system was constructed 65-70 years ago. Some substantial additions were made in 1949 and occasional minor extensions of the sewage collection system was made from time to time. In 2005, 5,500 feet of pipe was replaced using Community Development Block Grant (CDBG) funds, correcting some of the worst leaks into the sewage collection system. Until 1962, the collection system discharged to a large septic tank, located at the current wastewater treatment plant site, before discharging into Pine Creek. Later, a lift station and the two-celled facultative lagoon system were constructed. The treatment plant has not changed significantly since 1962.

The sewage collection system is old and still has a considerable amount of infiltration and inflow. The town's main lift station is very old, and the pumps had been failing on a frequent basis. The town was able to use some of the CDBG funds that remained from the sewage collection system repair project to buy new pumps that will be reused in a new lift station when the plant is upgraded. This purchase helped the town to avoid the real possibility of a calamitous event from complete failure of the lift station. The town was also allowed to use some of the

same funds to purchase and install a flow meter to accurately measure flow entering the wastewater treatment plant.

Facilities being considered and costs

The town signed an order from Ecology requiring construction of the new wastewater treatment plant by December 31, 2011. The order is currently being amended to allow a completion date of February 28, 2014. This is so the temperature study can be completed and the facilities plan finalized. The town has hired an engineering consultant and completed a draft of a site specific wastewater facilities plan. The plan proposes a series of lined lagoons with aeration and disinfection with discharge to an infiltrating wetland. The town awaits the results of a temperature study to verify that this proposal will meet the water quality standards for Pine Creek. The projected cost for this upgrade is \$4.4 million.

The other major obstacle to construction is obtaining land for the plant. Rosalia is located in wheat farming country. Since the price of wheat has reached historical highs, the town found acquiring land to be very difficult. There are also large legal hurdles for a small community to successfully negotiate a land purchase.

Sewer user rates

The town currently charges each of its 250 residential sewer accounts \$19.25 per month. This rate is up from \$13 in 2003. Town officials estimate that the final sewer rate needed to pay for and maintain the treatment system will be \$58 - \$68 assuming a 100 percent loan. There is a potential for final rate costs to be much higher because these estimates are based on a per household cost and do not take into consideration the various businesses, a school, and the dramatic construction cost increases.

The community has historically raised rates on an as-needed basis, and has established a Wastewater Facility Fund dedicated to capital projects. The Wastewater Facility Fund balance is currently \$30,000.

Other infrastructure initiatives and commitments

The water system recently went through a series of upgrades including acquiring additional water rights, rehabilitating a well, and building another drinking water reservoir. The distribution system is as old as the sewers and has significant leaks. The town estimates that there is still \$1.5 million in work to do in the water system.

Public involvement and acceptance

The town officials have made some efforts to explain the needs and costs with local citizens, including a public meeting and the newsletter included in each home's sewer bill. But implementing the rate increases will be difficult due to the major concerns of the ratepayers.

In their own words

- Small communities are on the short end of the infrastructure stick. The additional work required by funding agencies (cultural resources, Endangered Species Act review, income surveys) adds costs to projects. Small communities can be severely affected by these incremental costs.
- The town sees an unfair distribution of funds between the east side and west side of the state. town leaders believe that small east side communities see proportionally less funding than the communities on the west. A dedicated funding source for east side communities could address this.
- Requirements for municipalities to acquire land are onerous. Land acquisition is especially difficult for small towns without full-time legal staff. The time and money invested in a land deal can be lost if the purchase falls through. Infrastructure projects can be held up until a community can secure land.

Local contacts

Ken Jacobs, Mayor
Nan Konishi, Council Member
(509) 523-5991

SULTAN, WASHINGTON

Snohomish County

Location and historical perspective

The city of Sultan was founded as a logging community in the 1880s, and it was incorporated in 1905. As of 1979, logging was still a vibrant industry in the community. By 1992, logging was effectively finished as a major employer in Sultan, although there is still some logging in the area. Sultan is now largely a bedroom community for metropolitan areas of King and Snohomish Counties. Housing in the community is affordable, and the city is located close to recreational activities such as fly-fishing and white water rafting. The city is currently experiencing high residential development demand due to its close proximity to Everett and Bellevue.

Sultan has a current population of 4,550. The city's comprehensive plan encourages small businesses to start in the community. Sultan has established an 'incubator' program for small business startups.

Existing wastewater facilities and needs

The city of Sultan has a properly functioning ten-year old wastewater treatment plant. The city is attempting to build wastewater treatment capacity for anticipated future demands. The community has doubled in size over the last ten years and was faced with increased housing demand a year ago. At this time, 600 lots have preliminary plat approval and the community has capacity in its existing sewer plant to provide service to these lots. An additional 1,245 lots are in the preliminary plat approval stage, but there are no collection sewers to service them. In response to this demand, the city began planning for additional sewer infrastructure.

Because of the recent housing slump, developers have all but stopped building. This has dried up the stream of money the community intended to use to pay for the new treatment plant. The city needs additional money to complete design. City officials believe they are trapped in a "Catch 22" situation. The city doesn't have the connections (sewer accounts) to pay for a new sewer system, but without the larger sewer system it cannot attract additional sewer connections.



Sultan's treatment plant is ten years old, but the city wants to upgrade it for growth that it believes will occur soon. Ecology photo

Facilities being considered and costs

The existing wastewater treatment plant is an oxidation ditch with ultraviolet disinfection, constructed in 1998. The upgraded sewage treatment plant will add a membrane treatment unit to the existing treatment plant, creating a membrane-hybrid plant that has capacity to treat the high flows associated with storm events. The upgrade is expected to cost between \$15 and \$18 million. This is only one part of the \$46 million in planned wastewater projects over the next 20 years.

Sultan used this sewer reserve that had accumulated to pay for planning and obtained a \$1 million loan from the Public Works Trust Fund (PWTF) to design the facility. City officials had applied for a second \$1 million PWTF loan to complete design when the housing boom ended in Sultan. The city also received a 2008 Capital Budget Proviso for \$500,000 from the state Legislature to help pay for the upgraded wastewater treatment plant. The city didn't complete a National Environmental Policy Act environmental review of its project during the planning stage. This review is required for all federal funding (including Ecology's State Revolving Fund [SRF] loans); but city officials had assumed that developer fees and PWTF loans would be sufficient to finance the construction of the facility.

For now the city is holding off on completing the design work (city officials have not accepted the second \$1 million PWTF loan). City officials intend to use the \$500,000 budget proviso to replace an existing solids screw press with a centrifuge at the wastewater treatment facility. This equipment replacement represents a small, high priority project at the treatment plant that will reduce operational costs, but not increase the plant's capacity.

Other infrastructure initiatives and commitments

The city also has significant obligations for other infrastructure.

- Its 20-year capital improvement plan for transportation includes \$155 million in construction.
- Plans are in the works to spend \$24 million on the drinking water system over the next 20 years.
- A stormwater utility has just been created to meet stormwater permit requirements.

The city is at its borrowing capacity for general obligation debt.

Sewer user rates

Prior to 2004, sewer rates in the community had been \$24 per month per household. In 2004 the city increased rates to \$41 per month and has had annual increases since then. In 2008, monthly sewer rates were \$61.74 per household; the city offers reduced rates for low income households and seniors.

The city has historically raised substantial revenue through development impact fees on new lots. The system development fee for the sewer utility is currently \$11,282 per lot for new sewer service. City officials believe a fair share of the costs for wastewater infrastructure would actually be more, but believe state law may limit its ability to recoup the true cost of serving new development.

In their own words

- Planning for the future appears to be penalized within the funding arena. Funding seems to flow to communities with critical failures, not communities that are planning ahead. The Legislature should set aside money to assist communities that are planning ahead and stop focusing state money on solving crises.

- The community is also concerned about the “end run” being performed by some communities approaching the Legislature directly for funding. The projects that take this approach are not prioritized. Ecology should be involved in prioritizing these requests.
- For the community leaders, the cost to prepare environmental review documents, in order to make federal funding available, doesn’t seem worth the cost of preparing the documents.
- The Public Works Trust Fund’s practice of awarding all the money in one round, then skipping a year of awards has delayed Sultan’s project.

Local contacts

Carolyn Eslick, Mayor
Deborah Knight, City Administrator
Connie Dunn, Public Works Director
(360) 793-2231

TEKOA, WASHINGTON

Whitman County

Location and historical perspective

The town of Tekoa is historically a railroad town, once having a peak population of 3,600. When the railroad left, so did the people, leaving the current population of 840. Today the biggest employers are the local school district, a farm implement dealership, and a grass seed plant. Many residents commute to work in Spokane (about 40 miles north) or to the casino in Worley, Idaho.

The economic prospects in Tekoa are limited by the infrastructure it can provide. Natural gas isn't available locally. Both the water and sewer systems are stretched to their limits and are not in compliance with state regulations. Much of the community is low income. To illustrate, last year in the Tekoa School District, 65 to 80 percent of the students qualified to receive free and reduced-cost lunches.

Existing wastewater facilities and wastewater facilities needed

The sewage collection system for the town of Tekoa has significant infiltration and inflow, which has an impact on the capacity and efficiency of the operation at the wastewater treatment plant. The collection system was built in the early 1900s with few upgrades since the 1970s. The town completed some rehabilitation and repair work in the early 1990s, but significant infiltration and inflow still exists. The treatment plant routinely exceeds the National Pollutant Discharge Elimination System (NPDES) discharge limits allowed for fecal coliform, organic materials, and ammonia.



Part of the aging Tekoa wastewater treatment plant. Flaking concrete and exposed rebar are seen in the center of the photo. Ecology Photo

The original treatment plant was constructed in the 1950s to provide gravity settling of sewage before discharge into Hangman Creek. Since that time, the treatment plant has been modified to provide better treatment, but much of the original treatment infrastructure remains well over 50 years old. The concrete on many of the structures is fragmenting and has exposed rebar in places. This deterioration of structures and similar deterioration in equipment has created a high level of concern about the treatment plant's ability to function over the next ten years (present schedule for replacement).

Facilities being considered and costs

In 2004, the town completed a large scale sewer inspection to identify leaks and set up priorities for future work. In 2005, it replaced a section of pipe crossing under a creek. This autumn (2008) the town will replace a similar underwater creek crossing. Both pipe sections were identified as major sources of leaks into the sewage collection system. The final phase of the collection system work is scheduled for completion in 2011. This project is estimated to cost \$3.8 million.

The town completed a comprehensive sewer plan in 2007. This plan laid out the strategy for upgrading the treatment system. After reducing the leaks in the collection system, the final size for the treatment plant can be determined for the final design. The final plan for treatment infrastructure is scheduled for 2014, with construction of the treatment plant scheduled for 2017. This extended planning schedule will also give the community time to raise the sewer rates and accumulate a capital reserve to pay for the work.

The 2017 project for the treatment system is expected to cost \$3.5 million, but by 2017 the town estimates that the cost will escalate to \$4.3 million. Tekoa representatives met with funding agencies in “Tech Team” meetings organized by the Infrastructure Assistance Coordinating Council (IACC) in August 2005 and March 2006. Tekoa is actively seeking state and federal budget provisos for the large construction projects scheduled for 2011 and 2017. The town has received both Community Development Block Grants and Public Works Trust Fund loans to pay for past wastewater projects.

Other infrastructure initiatives and commitments

The community’s water system has similar needs and will undergo significant upgrades over the next ten years. The upgrades include new reservoirs and repairs to leaking water lines. The town’s well production is declining, and the town will need to either a new well or to redevelop its old one. Water rates are currently \$31.50 but may increase to \$71.50 by 2016.

The town is also facing needs for upgrades in the street system. The community partly funds its streets through a yearly levy.

Sewer user rates

The timing of the sewer upgrades is tied to the community’s ability to pay for them. Even with an assumed 50 percent grant, 50 percent loan for financing the projects, there will still be out of pocket expenses and loans to repay. There will also be increased operating costs for the more advanced treatment system. Tekoa’s plan for paying for the sewer infrastructure involves a series of \$5 rate increases over the next ten years. Starting with 2008’s rates of \$37 per month, sewer rates for the residents of Tekoa will steadily increase to \$82 per month by 2017.

The town only recently started the program of incremental rate increases in order to pay for the required infrastructure. The first scheduled increase of this type went into effect January 1, 2007. Sewer rates in 1998 were \$22 per month. The rates in 2003 were \$25 per month. If more continuous rate increases had been adopted earlier, the sewer projects could have been completed earlier, and the overall cost to the community’s rate payers would have been less.

In their own words

- Everyone needs infrastructure; Olympia, Seattle, and Tekoa. Big communities, and Legislators from these communities, seem to have blinders on and don't see the problems in little towns. It's not malicious, they have their own problems, but little towns have to pull a bigger load. Small towns have to meet the same requirements as larger communities, but have fewer people to pay for them.
- The planning process and incremental rate increases should have been implemented 20 years ago. Construction just gets more expensive ever year, and this makes our projects much more expensive than they would have been if the improvement programs had been implemented a decade ago.

Local contacts

John Jaeger, Mayor
Duane Groom, Wastewater Superintendent
(509) 284-3861



Wastewater Superintendent Duane Groom (left), and Mayor John Jaeger (right), at Ecology's interview. Ecology photo

ROCK ISLAND, WASHINGTON

Douglas County

Location and historical perspective

Rock Island, Washington, incorporated in 1931, serves largely as a bedroom community for the greater Wenatchee area. Its population of 886 people uses only on-site septic tanks and drain fields for wastewater disposal. Unfortunately, nearly the entire city lies over very porous gravelly and cobbly fine sandy loam soil with no confining layer, such as heavy clay, that could prevent potential contamination of the city's 100 private water supply wells and three public wells.

One of these three public wells has had concentrations of nitrate ranging from 5-7 mg/l (parts per million) for at least the last seven years. Water supplies with nitrate concentrations of 10 mg/l (or greater) are considered unfit for human consumption. Private wells are not generally tested for contamination, so the full extent of nitrate contamination is unknown.

Wastewater facilities needs

According to Mayor Russell Clark, the city needs a sewer system to eliminate failing on-site septic systems and protect water supplies while providing for commercial development. He noted that at least two motel developers have investigated locating in Rock Island but are unable to do so because of the cost of the relatively large engineered drain field areas now required. New residences are required to have at least one-half acre lot sizes for their drain fields. Growth is at a virtual standstill. The mayor would like to see the community grow, possibly even to double its current size, and continue to be a relatively inexpensive place to live.

Facilities being considered, costs and regionalization alternative

Rock Island's cost to provide sewer service, a mechanical extended aeration treatment plant with discharge to the Columbia River, was estimated to be \$10.65 million. This was projected early in 2008. Construction costs continue to escalate.

One of the wastewater treatment alternatives evaluated was for Rock Island to connect to the Douglas County Sewer District (DCSD). Although estimated dollar for dollar costs were comparable to the proposed treatment plant, the city was reluctant to pursue connecting to DCSD due to concerns over future costs (monthly rates) and control of future costs, expansion, and capacity.

During the 2007 Legislative session the city's staff asked the Legislature for \$8.7 million for the project, but instead received a Capital Budget Proviso of \$870,000 for planning and design.

The city leases one of the lakes in the area to a company that mines gravel from the lake. Through the lease, the city has accumulated about \$250,000 for the sewer project from the ongoing mining operation. Revenue from gravel extraction is expected to continue for six to eight more years.



In February 2008, the city applied for State and Tribal Assistance Grant (STAG)⁶ funding in the amount of \$5.65 million.

A total of about \$100,000 is generated for the sewer system improvement project on a yearly basis from gravel mining in this lake. Ecology photo

City officials hope a Community Development Block Grant can help the 57 percent of the residents in the service area with low to moderate income. Residents will have to incur the cost of sewer connection and retiring on-site septic systems. The community's median household income is only about 80 percent of the statewide average.

Regardless of whether or not STAG funding is approved by Congress, the city will likely ask the state Legislature for much of the unfunded balance in an appropriation from the 2009-11 Capital Budget during the 2009 Legislative Session.

Sewer user rates

Monthly rates from current funding scenarios range from \$45 if 90 percent of the project were to be funded with grants, to \$205 if none of the project is funded with grants. Mayor Clark believes the citizens will not be able to afford much more than a \$50 per month sewer user charge. If a \$60 per month user fee is proposed, the City Council will not likely vote in favor of the project. This means the city needs at least 80 percent of the funding for the project in the form of grants.

Rock Island's cost to provide sewer service and a mechanical extended aeration treatment plant with discharge to the Columbia River is estimated to be \$10.65 million for its 885 residents.

Other infrastructure initiatives and commitments

The only outstanding infrastructure debt the city presently faces is a Public Works Trust Fund Loan for the water system storage tank. The debt will be retired by 2018 and has a current balance of \$280,000. At this time, bringing sewer to the city is the highest priority. Water bills are about \$30 per month with 300 total users connected to the city water. About the same number of residents will be required to hook up to a new sewer system.

⁶ State and Tribal Assistance Grant (STAG) are Congressionally secured federal budget earmarks.

Public involvement and acceptance

Even though the project is a continuous topic of City Council meetings, no public meetings on the project have been held since 2005. Public officials believe they need to be better prepared with information on how much the project will cost before talking with concerned citizens.

In their own words

- We are frustrated by the lack of grant funding offered by the Legislature; they need to give more money to infrastructure.
- The Legislature needs to be more proactive. We could get 100 percent funding if the water was already bad, why can't the Legislature provide funding *before* the water gets bad?
- Land acquisition was more difficult than expected.
- Advice to other small communities: Be persistent with politicians; make sewer service and other infrastructure needs in your city important to legislators.

Local contact

Russell Clark, Mayor, (509) 884-1261

Appendix A

Residential sewer rates for small communities in Washington

This chart shows monthly sewer user rates for small communities (population less than 10,000) across the state of Washington. Very few communities were omitted, and only because of lack of available information. Data was acquired by the community's website, municipal code, or contacting community officials directly.

Community	Monthly Rate	Community	Monthly Rate	Community	Monthly Rate
Airway Heights, City of	\$60.00	Goldendale, City of	\$31.50	Raymond, City of	\$37.50
Albion, Town of	\$25.50	Grand Coulee, City of	\$26.45	Reardan, Town of	\$41.54
Algona, City of	\$37.07	Grandview, City of	\$20.64	Republic, City of	\$25.00
Almira, Town of	\$23.54	Granger, Town of*	\$22.42	Ridgefield, City of	\$43.11
Asotin, City of	\$35.00	Granite Falls, City of	\$50.00	Ritzville, City of	\$42.00
Benton, City of	\$35.71	Harrington, City of	\$50.00	Rockford, Town of	\$26.00
Big Lake	\$40.00	Hartstene Pointe	\$34.50	Rosalia, Town of	\$19.25
Bingen, City of	\$38.00	Hoquiam, City of	\$23.97	Roslyn, City of	\$41.88
Blaine, City of	\$65.19	Ilwaco, City of	\$51.76	Royal, City of	\$39.25
Brewster, City of	\$27.00	Ione, Town of	\$28.10	Rustlewood	\$70.00
Brier, City of	\$37.16	Kalama, City of*	\$61.75	Selah, City of	\$33.85
Bridgeport, City of	\$21.33	Kettle Falls, City of	\$37.00	Sequim, City of	\$39.18
Buckley, City of	\$58.93	Kittitas, City of	\$41.20	Shelton, City of	\$49.92
Burlington, City of	\$37.03	Klickitat (STP)	\$51.38	Snohomish, City of	\$62.37
Carbonado, Town of	\$42.50	Klickitat Co. PUD #1 (Lyle STP)	\$50.00	Snoqualmie, City of	\$34.00
Carnation, City of	\$72.00	La Center, City of	\$41.00	Soap Lake, City of	\$25.18
Cashmere, City of	\$52.14	La Conner, Town of*	\$36.17	South Bend, City of	\$38.30
Castle Rock, City of*	\$68.05	La Crosse, Town of	\$30.00	South Prairie, Town of	\$39.82
Cathlamet, Town of	\$40.00	Langley, City of*	\$48.33	Spangle, Town of	\$50.00
Chehalis, City of	\$73.02	Leavenworth, City of	\$43.00	Sprague, City of	\$34.25
Chelan, City of	\$22.58	Lind, Town of	\$40.00	Springdale, Town of	\$30.51
Chewelah, City of	\$41.00	Long Beach, City of	\$35.91	St. John, Town of	\$15.00
Clarkston, City of	\$17.53	Mabton, City of	\$31.06	Stanwood, City of	\$55.05
Cle Elum, City of	\$38.85	Mansfield, Town of	\$49.50	Steilacoom, Town of	\$37.21
College Place, City of	\$47.15	Mattawa, Town of	\$27.60	Stevenson, City of	\$24.50
Colfax, City of*	\$34.57	McCleary, City of	\$63.50	Sultan, City of	\$61.74
Colton, Town of	\$35.00	Medical Lake, City of	\$30.00	Sumas, City of*	\$34.11
Colville, City of	\$50.00	Mesa, City of	\$27.00	Sumner, City of	\$42.36
Conconully, Town of	\$29.00	Metaline Falls, Town of	\$22.00	Tekoa, City of	\$36.50
Concrete, Town of	\$79.87	Metaline, Town of	\$40.00	Toledo, City of	\$31.80
Connell, City of	\$24.90	Milton, City of	\$24.55	Tonasket, City of	\$30.16
Cosmopolis, City of	\$30.78	Montesano, City of*	\$21.96	Toppenish, City of	\$40.53
Coulee City, Town of	\$16.50	Morton, City of	\$30.44	Twisp, Town of	\$31.80
Coupeville, Town of*	\$40.36	Mossyrock, City of	\$42.20	Union Gap, City of	\$35.99
Creston, Town of	\$28.70	Moxee, City of	\$27.00	Uniontown, Town of	\$34.53
Cusick, Town of	\$17.50	Naches, Town of	\$39.75	Vader, City of	\$30.60
Davenport, City of	\$27.50	Newcastle, City of	\$40.86	Waitsburg, City of	\$39.80
Dayton, City of	\$38.65	Newport, City of	\$31.50	Wapato, City of	\$25.54
Deer Park, City of	\$38.97	Normandy Park, City of	\$21.50	Warden, City of	\$34.47
DuPont, City of	\$48.55	North Bend, City of*	\$57.91	Washtucna, Town of	\$35.00
Duvall, City of	\$62.35	North Bonneville, City of	\$30.00	Waterville, Town of	\$27.00
Eatonville, Town of	\$36.00	Oakesdale, Town of	\$25.00	Westport, City of	\$46.80
Edgewood, City of	\$22.91	Ocean Shores, City of	\$24.33	White Salmon, City of	\$43.20
Elma, City of	\$36.24	Odessa, Town of	\$43.60	Wilbur, Town of	\$49.00
Endicott, Town of	\$30.00	Okanogan, City of	\$40.56	Wilkeson, Town of	\$73.00
Entiat, City of	\$43.64	Omak, City of	\$28.40	Winlock, City of	\$31.50
Ephrata, City of	\$29.00	Oroville, City of	\$22.00	Winthrop, Town of	\$20.66
Everson, City of	\$39.00	Orting, City of	\$35.00	Wishram, Town of (STP)	\$44.06
Fairfield, Town of	\$40.75	Othello, City of	\$17.68	Woodland, City of	\$34.00
Farmington, Town of	\$32.00	Palouse, City of	\$26.00	Yelm, City of	\$42.50
Fife, City of	\$40.08	Pateros, City of	\$31.25	Zillah, City of	\$28.55
Fircrest, City of	\$41.00	Pe Ell, Town of	\$52.00		
Forks, City of	\$23.77	Pomeroy, City of	\$25.67		
Friday Harbor, Town of	\$79.04	Port Orchard, City of	\$36.00		
Garfield, Town of	\$32.00	Port Townsend, City of	\$42.70		
George, City of	\$30.35	Poulsbo, City of	\$42.41		
Gig Harbor, City of	\$38.19	Prosser, City of	\$34.73		
		Quincy, City of	\$34.80		

Some statistics:
Mean: \$37.52
Median: \$36.00
Highest: \$79.87
Lowest: \$15.00
Mean for communities of all sizes:
\$38.23

Appendix B

Outline of resources used to develop case studies report

- Budget language (Appendix C)
- Small Communities Initiative (SCI) reviews.
- Regional Ecology and CTED project managers.
- Regional permit managers and engineers (Appendix D).
- Municipal Research and Service Centers of Washington [<http://www.mrsc.org/cityprofiles/citylist.aspx>] and other related resources for Appendix E.
- Ecology's permitting and enforcement files available at http://www.ecy.wa.gov/programs/wq/permits/index.html#wastewater_individual_permits.
- Engineering documents (facilities plan and design documents).
- Site visits and interviews (Appendix F) with community officials. Local contact(s) reviewed each case study as a draft, and staff incorporated recommendations into the final case study.
- Legislative staff reviews and recommendations.
- Office of Financial Management staff reviews and recommendations.

Appendix C
**2008 Supplemental Capital Budget Language Relating to Small
Community Case Study Project**

Budget language:

6 NEW SECTION. Sec. 3005. A new section is added to 2007 c 520

7 (uncodified) to read as follows:

8 FOR THE DEPARTMENT OF ECOLOGY

9 Wastewater Systems Case Studies (08-2-852)

10 The appropriation in this section is subject to the following

11 conditions and limitations: The appropriation in this section is

12 provided solely for the department and department of community, trade,

13 and economic development to develop a set of case studies of wastewater

14 systems, based on the small communities initiative's action list, that

15 require significant state financial and technical resources to resolve

16 urgent threats to public health, safety, and environmental quality.

17 The department shall provide recommendations for early interventions to

18 prevent similar problems with small communities in the future. The

19 recommendations must be provided to the appropriate legislative

20 committees and the office of financial management by November 30, 2008.

21 Appropriation:

22 State Building Construction Account--State \$75,000

23 Prior Biennia (Expenditures) \$0

24 Future Biennia (Projected Costs) \$0

25 TOTAL \$75,000

Appendix D
Questionnaire Distributed to Ecology Regional Staff

Ecology Regional Contact?

Community of?

Whom to contact at community? Phone? ()

What are the ecological and human health problems?

Describe the community's fiscal situation.

Brief community history and time line for the progression of the wastewater problem and the communities efforts toward a solution?

What are the infrastructure needs to solve the problems?

What will the infrastructure solution cost, and how will it be paid for?

What financial assistance has the community received?

What factors contributed to the fiscal crisis and the need for state assistance in the project?

How could the problem (or similar problems) be avoided in the future?

What are (would be) the impacts on local rate payers with (and without) state assistance?

- **One time assessments and fees**
- **Monthly rates and special provisions**
- **Other**

What are the technical assistance needs?

What other communities are facing similar financial challenges?

What were the outcomes of the project(s)?

Were there any unforeseen outcomes from the project or financial assistance? (positive or negative)

What draft or approved engineering exist?

Is there any other pertinent information you can provide?

Appendix E Overview of Case Information

(Community Synopsis – Completed at Ecology headquarters)

Community and Address: **Population:** (2008 Est.)

County:

Mayor:

Director of Public Works:

Local Contact Person and Title:

Phone: () **Email:**

Community profile:

- Location (for mapping purposes):
- Type of local government:
- Median household income (MHI – 2008 Est.): statewide mean: \$54,106
- Unemployment – 2007 County Level: percent; 120 percent of state average is 6.7 percent.
- Other

Appendix F
Specific Small Community Case Information - Completed during
community interview with Ecology and CTED regional and
headquarters staff

Small Community Wastewater Case Studies

Community: _____

1. Background Information

- Briefly describe the community's history.
- What is the present population and economic base?
- What is your overall vision for the community?
- What are the short- and long-term plans to achieve that vision?

2. Infrastructure Needs and Financial Ability to Meet these Needs

- What infrastructure needs does your community face in the next 6 years?
- What are the overall cost estimates and how were they documented?
- What are your priorities in addressing these needs?
- Describe the community's fiscal situation and financial capacity. For example, outstanding debt.

3. Wastewater Infrastructure Need

- Is there a comprehensive sewer plan and facilities plan, and when were they last updated?

Describe the following:

- Wastewater management problem.
- Time line for the problem as it developed.
- Potential solutions for the problem and how they were identified.
- Estimated cost of the wastewater infrastructure needed.

- Community’s overall efforts, to date, toward this solution.
- Community’s public outreach and education about the problem and solution.

4. How You Have Addressed the Problem – Technical and Financial Assistance Experience

- How will you address the need for technical and financial expertise in the community to ensure a successful solution? For example, consultants, staff, community volunteers.
- What kind (if any) technical assistance can the state provide?

5. Sewer Rates

- What are the community’s current sewer user rates? What is this based on?
- What were they...10 years ago? 5 years ago?
- What is the process used to increase user rates to account for inflation, operation, maintenance, replacement, and debt?
- Is there a sewer use ordinance and when was it updated?
- How is it effectively enforced?
- What is the community’s current development (hook up) fee?
- What was it...10 years ago? 5 years ago?

6. State and Federal Financial Assistance Received and Needed

- What state and federal loans and grants have the community applied for and received, including wastewater treatment in the past 10 years?
- What financial factors contributed to the need for state assistance for the wastewater treatment project?
- How does the community plan to pay for the local portion of the project, including capital costs (planning, design, and construction); operation, maintenance, repair, and replacement?
 - ✓ One time assessments?
 - ✓ Development fees?
 - ✓ Monthly user rates?
 - ✓ Other?

- What would be (have been) the impacts on local rate payers without state assistance?

7. For Communities with Completed Projects

- What were the outcomes of the project(s), both positive and negative?
- What were the unforeseen outcomes, both positive and negative?

8. For All Communities

- What “lessons learned” would you share with other leaders of small communities statewide; what would you do differently if you had to do it all over again?
- Other pertinent information you can provide.

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Appendix G

Matrix of Financial Assistance Programs for Wastewater and Water Supply Infrastructure in the State of Washington

PLANNING

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
CDBG-POG Community Development Block Grant – Planning-Only Grant Program	<ul style="list-style-type: none"> Comprehensive plans Infrastructure plans Feasibility studies Community action plans Low-income housing assessments 	Projects must principally benefit low- to moderate-income people in non-entitlement cities and counties. <ul style="list-style-type: none"> Cities or towns with fewer than 50,000 people Counties with fewer than 200,000 people 	Grant <ul style="list-style-type: none"> Up to \$24,000 for a single jurisdiction and \$40,000 for multiple jurisdictions Upper limits of \$35,000 for a single jurisdiction and \$50,000 for multiple jurisdictions for priority public health planning 	Applications accepted beginning November 1, 2008 on a fund-available basis Contact: Julie Baker 360-725-3010 julieb@cted.wa.gov
PWTF PLANNING Public Works Trust Fund – Planning Program	<ul style="list-style-type: none"> Single or multiple system plans covering eligible systems Updates to existing capital facilities plans Environmental studies Cultural/historical project reviews 	<ul style="list-style-type: none"> Counties, cities, and special-purpose districts that meet certain requirements (contact the client service representative) No school or port districts 	Loan <ul style="list-style-type: none"> Up to \$100,000 per jurisdiction each biennium 0 percent interest, 6-year term No match required Must complete plan in 18 months 	Applications accepted year-round, on a fund-available basis Contact: Client Service Representative at 360-586-4122 or http://www.pwb.wa.gov
CERB PLANNING Community Economic Revitalization Board – Rural Project-Specific Planning Program	Project-specific feasibility and pre-development studies that advance community economic development goals for industrial sector business development.	Eligible in designated rural counties or rural natural resource areas: <ul style="list-style-type: none"> Counties, cities, towns, port districts, special districts Federally recognized tribes Municipal corporations, quasi-municipal corporations with economic development purposes 	Matching Grant <ul style="list-style-type: none"> Up to \$50,000 per application Requires 50 percent matching funds 	Applications accepted year-round. The Board meets six times a year. Contact: Matt Ojennus 360-725-4047 matthewo@cted.wa.gov

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
RD PRE-DEVELOPMENT U.S. Dept. of Agriculture Rural Development – Rural Utilities Service – Water and Waste Disposal Direct Loans and Grants	Water and/or sewer planning; environmental work; and other work to assist in developing an application for infrastructure improvements	Low-income, small communities and systems serving areas under 10,000 population.	Loans; Grants in some cases, depending on funding availability Maximum \$15,000 grant Requires minimum 25% match	Applications accepted year-round, on a fund-available basis Contact: Gene Dobry 360-704-7733 Eugene.dobry@wa.usda.gov http://www.rurdev.usda.gov/wa
ECOLOGY REVOLVING FUND Ecology, Washington State Water Pollution Control Revolving Loan Fund	Planning , design, and construction projects associated with publicly-owned wastewater treatment facilities, planning and implementation of nonpoint activities	Counties, cities, towns, conservation districts, or other political subdivision, municipal or quasi-municipal corporations, and tribes	Loan, either: <ul style="list-style-type: none"> • 2.9% interest for 6-20 year term, or • 1.5% interest for 5 year term • Hardship assistance for water pollution control facilities (existing residential need only) may be available in the form of a reduced interest rate or extended term 	Applications accepted ~September 1 through ~October 31 for next fiscal year funding (check with staff for exact dates) Contact: Brian Howard 360-407-6510 brho461@ecy.wa.gov http://www.ecy.wa.gov/programs/wq/funding/funding.html

PRE-CONSTRUCTION ONLY

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
PWTF PRE-CON Public Works Trust Fund – Pre-Construction Program	Pre-construction activities such as preliminary engineering, design, bid-document preparation, right-of-way acquisition, environmental studies, and cultural/historic project review	<ul style="list-style-type: none"> • Counties, cities, and special purpose districts that meet certain requirements (contact the client service representative) • No school or port districts 	Loan <ul style="list-style-type: none"> • \$1 million per jurisdiction each biennium • 0.5 to 2 percent interest, depending on local match • 5 to 15 percent local match • 5-year term, or 20-years if construction funds are acquired before first loan principle payment 	Applications accepted year-round, on a fund-available basis Contact: Client Service Representative at 360-586-4122 or http://www.pwb.wa.gov
ECOLOGY REVOLVING FUND Ecology, Washington State Water Pollution Control Revolving Loan	Planning, design , and construction projects associated with publicly-owned wastewater treatment facilities,	Counties, cities, towns, conservation districts, or other political subdivision, municipal or quasi-municipal corporations, and tribes	Loan, either: <ul style="list-style-type: none"> • 2.9% interest for 6-20 year term, or • 1.5% interest for 5 year term 	Applications accepted ~September 1 through ~October 31 for next fiscal year funding (check with staff for exact dates)

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
Fund	planning and implementation of nonpoint activities		<ul style="list-style-type: none"> Hardship assistance for water pollution control facilities (existing residential need only) may be available in the form of a reduced interest rate or extended term 	Contact: Brian Howard 360-407-6510 brho461@ecy.wa.gov http://www.ecy.wa.gov/programs/wq/funding/funding.html

CONSTRUCTION and DESIGN AND CONSTRUCTION

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
CDBG-GP Community Development Block Grant – General Purpose Grant Program	Final design and construction of domestic wastewater, side sewer connections, drinking water, stormwater, roads, streets, bridge, and housing rehabilitation projects.	Projects must principally benefit low- to moderate-income people in non-entitlement cities and counties. <ul style="list-style-type: none"> Cities or towns with fewer than 50,000 people Counties with fewer than 200,000 people 	Grant <ul style="list-style-type: none"> Up to \$1 million for projects under \$10 million Up to \$1.5 million for projects over \$10 million No match required, but local contribution and gap financing preferred 	Applications due in November Notification in March Contact: Kaaren Roe 360-725-3018 kaarenr@cted.wa.gov
PWTF Public Works Trust Fund – Construction Program	New construction, replacement, and repair of existing infrastructure for domestic water, sanitary sewer, storm sewer, solid waste, road or bridge projects, and reasonable growth	<ul style="list-style-type: none"> Counties, cities and special purpose districts that meet certain requirements (contact the client service representative) No school or port districts 	Loan <ul style="list-style-type: none"> \$10 million per jurisdiction each biennium 0.5 to 2 percent interest, depends on local match 5 to 15 percent local match 20-year term maximum 	Applications due in May Funds available the next spring Contact: Client Service Representative at 360-586-4122 or http://www.pwb.wa.gov
DWSRF Drinking Water State Revolving Fund	Drinking water system infrastructure projects aimed at increasing public health protection	Community and non-community water systems (includes for-profit and non-profit systems, but not federal or state-owned systems); both privately- and publicly-owned systems are eligible	Loan <ul style="list-style-type: none"> 1 percent loan fee \$3 million per jurisdiction a year \$6 million for jointly-owned projects 0 to 1.5 percent interest rate 20-year term; 30 for extremely disadvantaged 	Applications due in May Funds available the next spring Contact: Kitty Weisman 360-236-3116 kitty.weisman@doh.wa.gov www.doh.wa.gov/ehp/dw/our_main_pages/dwsrf.htm

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
			communities <ul style="list-style-type: none"> No local match required 	
RD U.S. Dept. of Agriculture Rural Development - Rural Utilities Service - Water and Waste Disposal Direct Loans and Grants	Pre-construction and construction associated with building, repairing, or improving drinking water, solid waste facilities and wastewater facilities	<ul style="list-style-type: none"> Cities or towns with fewer than 10,000 population Counties, special purpose districts, non-profit corporations or tribes unable to get funds from other sources at reasonable rates and terms 	Loans; Grants in some cases <ul style="list-style-type: none"> Interest rates vary (currently 2.75 - 4.5%) Up to 40-year loan term No pre-payment penalty 	Applications accepted year-round on a fund-available basis Contact: Gene Dobry 360-704-7733 Eugene.dobry@wa.usda.gov http://www.rurdev.usda.gov/wa

CONSTRUCTION and DESIGN AND CONSTRUCTION

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
ECOLOGY REVOLVING FUND Ecology, Washington State Water Pollution Control Revolving Loan Fund	Planning, design, and construction projects associated with publicly- owned wastewater treatment facilities, planning and implementation of nonpoint activities	Counties, cities, towns, conservation districts, or other political subdivision, municipal or quasi-municipal corporations, and tribes	Loan, either: <ul style="list-style-type: none"> 2.9% interest for 6-20 year term, or 1.5% interest for 5 year term Hardship assistance for water pollution control facilities (existing residential need only) may be available in the form of a reduced interest rate or extended term 	Applications accepted ~September 1 through ~October 31 for next fiscal year funding (check with staff for exact dates) Contact: Brian Howard 360-407-6510 brho461@ecy.wa.gov http://www.ecy.wa.gov/programs/wq/funding/funding.html
ECOLOGY CENTENNIAL Ecology, Centennial Clean Water Fund	Planning, design, and construction projects associated with publicly- owned wastewater treatment facilities and implementation of non- point activities	Counties, cities, towns, conservation districts, or other political subdivision, municipal or quasi-municipal corporations, and tribes	Grants; loans in some cases Hardship grant assistance for water pollution control facilities (existing residential need only) may be available if sewer user fees are in excess of 2% of the median household income. Grant and Revolving Fund loan may be used in combination to	Applications accepted ~September 1 through ~October 31 for next fiscal year funding (check with staff for exact dates) Contact: Jeff Nejedly 360-407-6566 jnej461@ecy.wa.gov http://www.ecy.wa.gov/progra

Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
			fund project cost with reduced loan interest rate based on a sliding scale.	ms/wq/funding/funding.html
CERB Community Economic Revitalization Board - Construction Program	Projects must support industrial sector business growth and job creation or retention in the state. <ul style="list-style-type: none"> Bridges, roads and railroad spurs, domestic and industrial water, sanitary and storm sewers Electricity, natural gas and telecommunications General purpose industrial buildings, port facilities 	<ul style="list-style-type: none"> Counties, cities, towns, port districts, special districts Federally-recognized tribes Municipal and quasi-municipal corporations with economic development purposes. 	Loans; grants in unique cases <ul style="list-style-type: none"> Public facility projects required by private sector expansion and job creation \$2 million maximum per project, per policy Interest rates vary 20-year term maximum Requires 25% minimum match Applicants must demonstrate gap in public project funding and need for CERB assistance CERB is authority for funding approvals 	Applications accepted year-round. The Board meets six times a year. Contact: Matt Ojennus 360-725-4047 matthewo@cted.wa.gov

EMERGENCY

Project Phase/Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
PWTF Public Works Trust Fund – Emergency Program	Projects necessary due to natural disaster, or immediate/emergent threat to public health and safety For domestic water systems, sanitary and storm sewers, solid waste, roads and bridges	<ul style="list-style-type: none"> Counties, cities, and special purpose districts that meet certain requirements (contact the client service representative) No school or port districts 	Loan; pending availability of funds <ul style="list-style-type: none"> 3 percent interest rate No local match required 20-year maximum term \$500,000 limit 	Applications accepted year-round. Contact: Client Service Representative at 360-586-4122 or http://www.pwb.wa.gov
CDBG - IT Community Development Block	Repair water, sewer and drainage facility damages that pose an	<ul style="list-style-type: none"> Non-entitlement cities or towns with fewer than 	Grant; pending availability of funds	Applications accepted year-round.

Project Phase/Program	Eligible Projects	Eligible Applicants	Funding Available	How To Apply
Grant – Imminent Threat Grant Program	<p>immediate, urgent threat to public health and safety</p> <p>A formal disaster must be declared</p> <p>Project must be ineligible for emergency funds from the Public Works Trust Fund</p>	<p>50,000 people</p> <ul style="list-style-type: none"> • Non-entitlement counties with fewer than 200,000 people 	<ul style="list-style-type: none"> • Only eligible costs incurred after an emergency is formally declared can be reimbursed 	<p>Contact: Kaaren Roe 360-725-3018 kaarenr@cted.wa.gov</p>
RD – ECWAG Emergency Community Water Assistance Grants	<p>Domestic water projects:</p> <p>Needing emergency repairs due to an incident such as: a drought; earthquake; flood; chemical spill; fire; etc.</p> <p>A significant decline in quantity or quality of potable water supply that was caused by an emergency</p>	<p>Public bodies, tribes and private non-profit corporations serving rural areas with populations under 10,000</p>	<p>Grant; pending availability of funds</p> <ul style="list-style-type: none"> • \$150,000 limit for incident related emergency repairs to an existing water system • \$500,000 limit to alleviate a significant decline in potable water supply caused by an emergency 	<p>Applications accepted year-round on a fund-available basis</p> <p>Contact: Gene Dobry 360-704-7733 Eugene.dobry@wa.usda.gov</p> <p>http://www.rurdev.usda.gov/wa</p>
Washington Military Department – Emergency Management Division				<p>Several programs are available, see website http://emd.wa.gov/grants/grants_index.shtml</p>
Remedial Action Grants and Loans Department of Ecology Solid Waste and Financial Assistance Program				<p>Several programs are available, see website www.ecy.wa.gov/programs/swa/grants/</p>

Glossary

Activated Sludge – A type of mechanical treatment system. Activated sludge refers to the “active” biology that is cultured to remove pollutants. Activated sludge processes can be designed to provide advanced treatment, but are typically designed to meet secondary treatment standards.

Advanced Treatment – A treatment system designed to provide more thorough treatment than required by secondary treatment standards. Advanced treatment could include nutrient removal, very high disinfection standards, or metal removal.

Chlorination – A process used to disinfect wastewater. Chlorine gas or liquid chlorine (bleach) is used to kill pathogens prior to discharge to the environment.

Infiltration and Inflow (I&I) – Either ground water (Infiltration) or stormwater (Inflow) that leaks into a sewage collection system. In either case, essentially clean water is treated in the wastewater treatment plant increasing costs. Reducing I&I is a common strategy for freeing treatment capacity at an overloaded treatment plant.

Lagoon – A large lined pond that contains the wastewater while natural processes destroy pollutants. Lagoon systems require much more land than mechanical treatment systems. Lagoon systems can meet secondary treatment standards, but cannot achieve advanced treatment.

Mechanical Treatment – Any treatment system that manages wastewater using pumps and pipes in concrete basins. Mechanical treatment is designed to manage an active culture of bacteria that remove pollutants. The biological culture is then separated from the treated wastewater (typically using gravity settling).

Membrane Bio Reactor (MBR) – A type of mechanical treatment system capable of providing advanced treatment. The ‘membrane’ physically strains the active biology from the treated wastewater allowing almost complete removal of solids.

Nitrogen Removal – An advanced treatment process to remove nitrogen from the wastewater. Nitrogen removal is typically required for marine discharges.

Nutrient Removal - An advanced treatment process to remove nutrients from the wastewater. Nutrient removal can refer to nitrogen, phosphorus, or both.

Phosphorus Removal - An advanced treatment process to remove Phosphorus from the wastewater. Phosphorus removal is typically required for fresh water discharges.

Primary Treatment – A mechanical treatment process relying entirely on gravity settling to remove contaminants. No biological treatment is performed. Primary treatment is no longer allowed in Washington, although it may be used as part of another mechanical treatment process.

Recalculating Gravel Filter (RGF) – A simple mechanical treatment system where the active biology is attached to gravel in a 2-3 foot bed. The wastewater is reticulated over the gravel again and again, achieving very high rates of removal for conventional pollutants. RGF cannot provide advanced treatment.

Reclaimed Water – A type of advanced treatment that provides almost complete pathogen kill. The water produced is not potable and cannot be drunk, but can be used for almost any other purpose.

Rotating Biological Contactor (RBC) – A type of mechanical treatment process that cultures the active biology attached to large rotating ‘contact disks’. RBC cannot provide advanced treatment

Secondary Treatment – The minimum treatment standards that apply to all wastewater treatment plants in Washington. Secondary treatment can be provided by lagoon or mechanical treatment systems. Secondary treatment always involves some form of biological treatment to remove pollutants.

Septic Tank Effluent Gravity (STEG) system – A type of hybrid collection system that utilized septic tanks at individual homes with a smaller collection system to reduce costs.

Sequencing Batch Reactor (SBR) – A type of mechanical treatment plant using activated sludge. SBR use the same tank to provide biological treatment and settling in ‘sequence’. SBR can be used to provide advanced treatment.

Spray Field – A land discharge point for wastewater onto agricultural crops, typically alfalfa. The wastewater must be applied at rates that plants can use the water, and the crop must be managed to remove nitrogen to protect groundwater.

Trickling Filter - A type of mechanical treatment process where the active biology is grown attached to plastic media in 3-6 foot deep filter beds. Trickling filters cannot provide advanced treatment.

Ultraviolet (UV) Disinfection - A process used to disinfect wastewater. Ultraviolet radiation is used to kill pathogens prior to discharge to the environment.

“JUST THE FACTS” – Overviews of Basic Data from Case Study Communities

Community	County	Population ⁷	Number of Connects	MHI ⁸	Monthly Sewer User Rate	Project cost	Status	Project/Necessary Technology
Big Lake	Skagit	2,000	800	\$74,396	\$40.00	\$12,000,000	Planning	Reclaimed Water
Cashmere	Chelan	2,990	1,200	\$45,095	\$52.14	\$25,000,000	Planning	Advanced Treatment, Phosphorus Removal
Cathlamet	Wahkiakum	570	365	\$43,226	\$40.00	\$12,000,000	Planning Complete	Secondary Treatment; Replace lagoon with Mechanical Treatment
Concrete	Skagit	845	386	\$38,007	\$79.87	\$7,000,000	Project Complete	Membrane Bio Reactor
Hoodspport	Mason	1,200	600	\$49,293 ⁹	No sewer	\$23,000,000	Planning Complete	Eliminate Septic Tanks, Membrane-Bioreactor, Reclaimed Water
Klickitat	Klickitat	417	184	\$37,198	\$51.38	\$7,000,000	Project Complete	Septic Tank Effluent Gravity collection, Recirculation Gravel Filter plant
Lind	Adams	560	265	\$51,944	\$40.00	\$3,000,000	Planning Complete	Reliability Improvement, Mechanical Treatment
Mansfield	Douglas	330	150	\$37,198	\$49.50	\$2,430,000	Under Construction	Reliability, Replacement, Lagoon – Sprayfield Treatment.
Raymond	Pacific	3005	1,000	\$33,328	\$37.50	\$30,000,000	Design	Mechanical Treatment, Treats wastewater from South Bend
Rock Island	Douglas	865	300	\$43,496	No sewer	\$10,650,000	Design	Unsewered Community, Mechanical Treatment
Rosalia	Whitman	650	250	\$42,974	\$19.25	\$4,400,000	Design	Mechanical Treatment, Discharge to infiltrating wetlands
South Bend	Pacific	1770	850	\$37,794	\$39.00 ¹⁰		Design	Mechanical Treatment located in Raymond
Sultan	Snohomish	4,550	1,300	\$60,317	\$61.74	\$15,000,000	Planning	Membrane Bio Reactor
Tekoa	Whitman	840	365	\$39,893	\$37.00	\$7,300,000	Planning	Reliability, Replacement , Mechanical Treatment
Wilbur	Lincoln	895	420	\$42,131	\$49.00	\$5,000,000	Planning Complete	Mechanical Treatment

⁷ From 2008 projections at the Washington Governor’s Office of Financial Management (OFM) website: <http://www.ofm.wa.gov/pop/april1/rank2008.pdf>

⁸ MHI: The measure of median household income is first based on the 2000 census, adjusted each year for inflation based on the consumer price index. These data are merely for baseline determination for “hardship” grants for Ecology’s Water Quality Program as described in the Program Guidelines at: <http://www.ecy.wa.gov/programs/wq/funding/2010/index.html>.

⁹ As Hoodspport is unincorporated, and the MHI data was otherwise unavailable, OFM data for Mason County was used from: <http://www.ofm.wa.gov/economy/hhinc/medinc.pdf>

¹⁰ \$30 million is the estimated cost of the entire regional wastewater treatment facilities. Costs will be shared by the cities of Raymond and South Bend.

