



Long-term Planning for Sustainable Water and Wastewater Infrastructure in Wellpinit, Washington, for the Spokane Tribe of Indians

Office of Sustainable Communities
Smart Growth Program



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All photos courtesy of the Horsley Witten Group unless otherwise noted.



Executive Summary

The Spokane Tribe of Indians has found that the condition of its water and wastewater infrastructure is a primary obstacle to economic development in its central community of Wellpinit, Washington. The tribe requested assistance from EPA’s Smart Growth Implementation Assistance Program to further evaluate the tribe’s water and wastewater needs, identify actions to improve the systems’ capacity for new development, and ensure successful long-term operation of the infrastructure.

The project team included tribal government staff and federal agency staff from the U.S. Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and Indian Health Services (IHS). The project team worked with stakeholders that included tribal members and elected officials. The resources provided in this report will be useful to the tribe and IHS as they plan and design the wastewater treatment plant expansion and improvements to the larger water utility system.

The Spokane Tribe, like many tribes and rural communities across the country, faces several challenges related to providing clean and safe drinking water and wastewater services. Recognizing these challenges, the tribe initiated a long-term planning process for a water and wastewater infrastructure system that can meet future demand and support the tribe’s goals to add compact, mixed-use development in the town of Wellpinit. By adding new housing and businesses to an area of the reservation with existing infrastructure, the tribe will be able to preserve open space to protect natural resources and habitats, create a walkable community with access to more transportation options, and encourage new economic development. The Spokane Tribe and EPA hope that other communities can learn from this process.





1. Introduction

A. Background

The Spokane Tribe of Indians has lived in the Pacific Northwest for many centuries, including in parts of Idaho, Montana, and Washington. The Spokane Tribe now lives on the 245-square-mile Spokane Indian Reservation, located about 40 miles west of the city of Spokane and bordered by the Spokane River to the south and the Columbia River to the west. The community of Wellpinit is the center of activity on the reservation and is home to the Tribal Administration building, the Indian Health Clinic, Tribal Court, Wellpinit High School, a daycare facility, Tribal Health and Human Services, a grocery store, churches, a gas station, pow wow grounds, and many homes. According to 2010 U.S Census data, Wellpinit has just over 700 residents. The total population on the Spokane Indian Reservation is 2,096 people; 79 percent of those identified themselves as American Indian or Alaska Native.¹

The Spokane Tribe of Indians is a sovereign government body led by the Spokane Tribal Business Council. The Council consists of the Tribal Chairman, Vice Chairman, Tribal Secretary, and two Council members. The Spokane Tribal Business Council reports to the general membership, meaning all enrolled Spokane Tribal members. General Council meetings are held in the spring and fall each year so the Tribal Business Council can update the general membership on important tribal issues.²



Figure 1. Spokane Tribe Reservation

- 1 U.S. Census Bureau. General Population and Housing Characteristics. <http://factfinder2.census.gov>. Accessed July 25, 2013.
- 2 Spokane Tribe of Indians. 2012a. www.spokanetribe.com/government.



Situated about 3 miles north of the Spokane River and in the heart of the Spokane Indian Reservation, the community of Wellpinit is the Spokane Tribe of Indians' civic center and one of the areas that the tribe has targeted for future growth (Figures 1 and 2). In fact, the tribe's most recent land use plan, the 2013 Sustainable Community Master Plan³ (SCMP), identifies Wellpinit as the only location on the reservation where major economic development activities should be directed. Although economic development is important to the Spokane Tribe, the tribal community is also dedicated to preserving its environmental and cultural resources and has protected most of the tribe's reservation lands from development. The tribe adopted an Integrated Resource Management Plan (IRMP) in 2004 and updated it in 2008. In the IRMP and subsequent SCMP, the tribe designated three areas of the reservation as "developed areas" or "centers," the largest of which is Wellpinit (about 2 square miles). These designated developed areas are the only areas identified for any development activities.

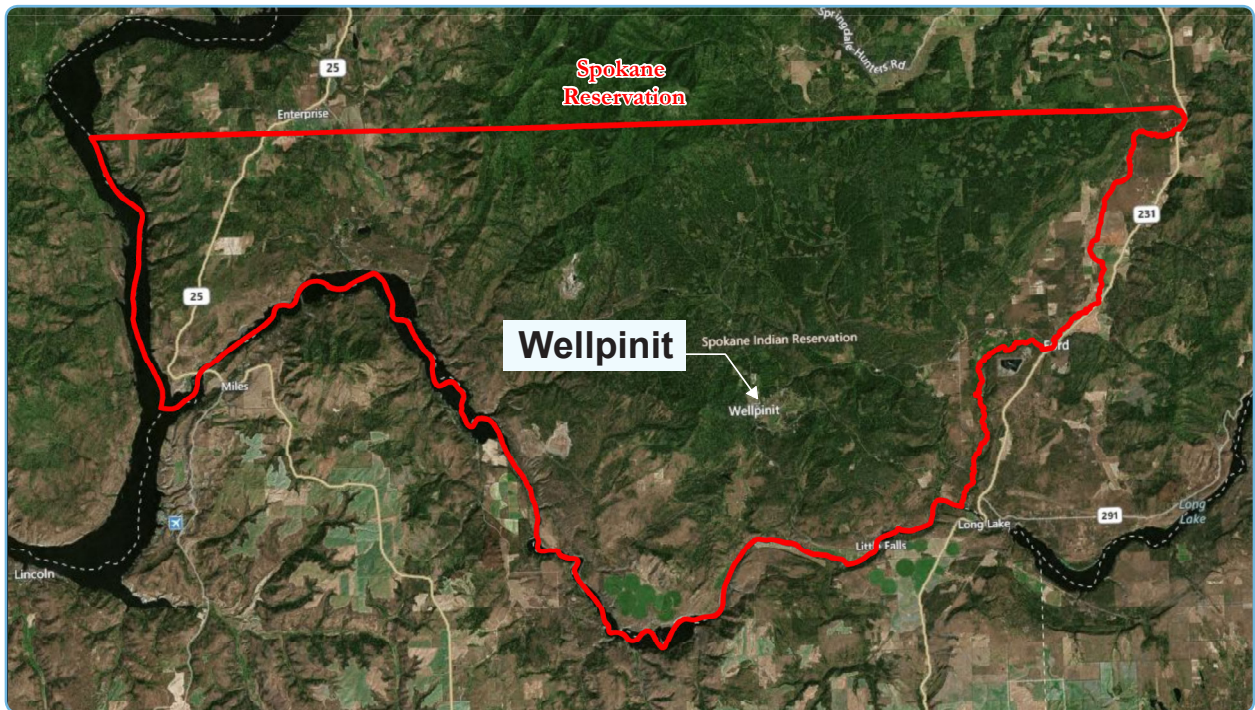


Figure 2. Wellpinit

In Wellpinit, buildings are generally one to two stories in most areas, and roads are designed mostly for cars with few sidewalks, making walking a difficult way to get around town. However, focusing economic development in Wellpinit is more efficient and makes the development easier for people to reach. The tribe's community center, schools, and trading post are in Wellpinit, along with other civic buildings and institutions. Encouraging development in previously developed areas in Wellpinit makes it easier for people to access these services and institutions. Adding pedestrian improvements such as sidewalks and crosswalks would allow people to walk more safely in and around Wellpinit. In addition, infrastructure, such as roads, water, sewer, and electricity, are already available in this area, as opposed to areas outside of Wellpinit where roads and utilities would need to be extended, adding to development costs.

3 SCMP was adopted May 10, 2013, by the Tribe.



Economic development is important to the tribe and critical to improving the community's economic well-being and quality of life. Although it has improved since the 1990s, the reservation's unemployment and poverty rates are much worse than those in nearby areas. In 2011, the U.S. Census Bureau reported an unemployment rate on the Spokane Indian Reservation of 26 percent, meaning at least one in every four people in the labor force on the reservation was unemployed. According to the 2012 Bureau of Indian Affairs Labor Market Report,⁴ the unemployment rate in the reservation's enrolled membership is 52 percent. Those that were employed were making less than those living in other local areas—the median household income in 2011 on the reservation was \$31,750, compared to \$44,354 for Stevens County and \$49,257 for Spokane County. The poverty rate on the reservation in 2011 was almost 33 percent, equating to about one in every three people living below the poverty line. This poverty rate is more than double the rate in Stevens and Spokane counties, which both have a poverty rate of 9 percent.⁵ As the tribe recognized in its master plan, to improve local economic conditions and become economically self-sufficient, the tribe needs local jobs with livable wages.



Figure 3. Wellpinit Downtown Trading Post - Photo - EPA

B. Sustainable Water and Wastewater Infrastructure Planning



Figure 4. Infrastructure Field Inspection

The primary obstacle to increased development in Wellpinit is the existing water and wastewater system run by the Tribal Utilities Service. It's supported by the Indian Health Service that helped design and construct many of the water and wastewater system components. Although both the 2008 IRMP and 2013 SCMP target Wellpinit for local economic development, they both recommend steering economic development activities off-reservation, on tribally owned property near the city of Spokane, until Wellpinit's water and sewerage capabilities can be improved. In short, for the tribe to support local economic development in Wellpinit, it needs to create a long-term, sustainable plan for its water and wastewater utility. For the utility, sustainability means having appropriate water and wastewater facilities that meet the current and future demands of the system; having a management structure to operate, maintain, and replace equipment as necessary; and enacting an enforceable water service fee to pay staff salaries and operational costs.

4 Spokane Tribe of Indians. Sustainable Community Master Plan (SCMP). May 2013. Page 31.

5 U.S. Census Bureau. 2007-2011 American Community Survey 5-Year Estimates, Table DP-03: Selected Economic Characteristics. 2011.



The tribe requested assistance from EPA’s Smart Growth Implementation Assistance Program to further evaluate the tribe’s water and wastewater needs. (See Appendix A for more information about the program.) The tribe also hoped to identify actions that it could take both to improve the capacity of the systems to accommodate new development and to operate the infrastructure successfully over the long term. The tribe identified additional steps it could take, including:

- Understanding operational issues with the water system to maintain adequate water pressure and ensure enough water is stored to fight fires. This might include improvements to the control systems that operate the well and pump station serving the community.
- Increasing the capacity of the current wastewater treatment system so it can accept effluent from new development.
- Updating maps of the existing water and wastewater infrastructure, including as-built plans showing detailed locations of hydrants, control valves, and manholes that operators often need to find quickly in an emergency.
- Improving staff training and expertise to operate existing and future facilities.
- Improving financial management of the utilities, including potential rate increases and outreach to the tribal community regarding the need to pay for adequate water and wastewater services.
- Improving the development review process to ensure that any new buildings are sited and designed with consideration of water infrastructure capacity and costs.

The challenges of managing a sustainable utility for a small, rural community are not unique to the Spokane Tribe. Many rural communities across the country do not have the critical mass or adequate service rates to support necessary investment in water and wastewater services. More than 1 million rural Americans live without adequate service (RCAP, 2006). Rural Indian reservations are often disproportionately affected, as they tend to have higher poverty rates and ratepayers have a harder time paying for water service. They also tend to pay less for water or wastewater services, if they pay at all.



Figure 5. Water Supply Pumphouse - Team Site Inspection

Investments in existing water and wastewater infrastructure pay substantial dividends to a community’s public health, environment, and economy. Wastewater treatment plants prevent billions of tons of pollutants each year from reaching our rivers, lakes, and coastlines (WIN, 2002). In the process, they help to prevent water-borne diseases, make our waters safe for fishing and swimming, and preserve our cherished natural resources. In addition, coordinated investments in housing, transportation, and water infrastructure can support the tribe’s goal for Wellpinit to be a more walkable community where residents have more transportation choices and easy access to services, schools, and recreation. This infill development strategy will help the tribe preserve open space, farmland, and natural resources, including rivers and drinking water sources, on other parts of the reservation. Finally the tribe’s goal of concentrating future



development in its central community saves the utility department money by limiting the expansion of water and sewer lines and associated pump or lift stations, allowing the tribe to use these resources for other initiatives.

C. Building on Past Planning Efforts

Since 2010, the tribe has been planning for the future—not just the future of its water and wastewater infrastructure, but its land, local economy, housing, transportation, and other aspects of community life. The SCMP was adopted in May 2013 by the Spokane Tribal Business Council and is a community-based plan that the tribe developed over several years. Many of the plan’s goals and objectives relate to the need for long-term planning for sustainable water and wastewater infrastructure. Examples of goals and objectives include:

- SCMP Land Use Goal 1: Determine the adequacy of current water and wastewater infrastructure and individual wells, and bring up to standards prior to pursuing new development.
- SCMP Housing Objective 3.1: Utilities will be in place before housing gets developed.⁶

The SCMP was developed through a Community Challenge Grant from the U.S. Department of Housing and Urban Development.

Other plans that the tribe has developed to guide land use and management decisions include the draft 2004 Comprehensive Plan and the 2008 update to the IRMP.

2. Workshop Process and Outcomes

The Spokane Tribe of Indians requested assistance with water infrastructure planning in the community of Wellpinit that would link to a HUD Community Challenge Planning Grant the tribe received in 2010 and ultimately form the foundation for future housing, transportation, and economic development planning. Staff from the Spokane Tribe, EPA, HUD, and IHS, along with the EPA contractor Horsley Witten Group, Inc., made up the project team that met over the course of a year and visited Wellpinit in October 2012. During this site visit, the Spokane Tribe hosted a three-day planning workshop that was well attended by a wide variety of stakeholders, including tribal government staff from several departments, Tribal Business Council members, and members of the public.

The workshop included stakeholder and public meetings, stakeholder interviews, and visits to relevant sites in the water and wastewater system. During the workshop, the project team learned about a number of the tribe’s challenges and opportunities, including:

⁶ Spokane Tribe of Indians. Sustainable Community Master Plan (SCMP). May 2013. Page 59.

1. Existing water infrastructure.
2. Existing wastewater infrastructure.
3. Land use planning and regulatory framework.



A. Existing Water Infrastructure

The tribe’s drinking water comes from ground water. Most of the residential, commercial, and governmental properties in Wellpinit are served by the tribe’s public water system, which provides approximately 60,000 gallons per day of water. The tribe has one drinking water well and four water storage tanks, along with one booster pump and tank, to serve Wellpinit (Figures 6, 7, 8). Although the drinking water well is currently meeting peak demand, a second well has been funded, and construction is expected to begin in 2013. This second well will ensure that the tribe has adequate drinking water for future growth and will provide a backup source if the existing well must be shut down for repairs. According to the Roads and Utilities Department and IHS, the four storage tanks provide adequate water storage for Wellpinit.

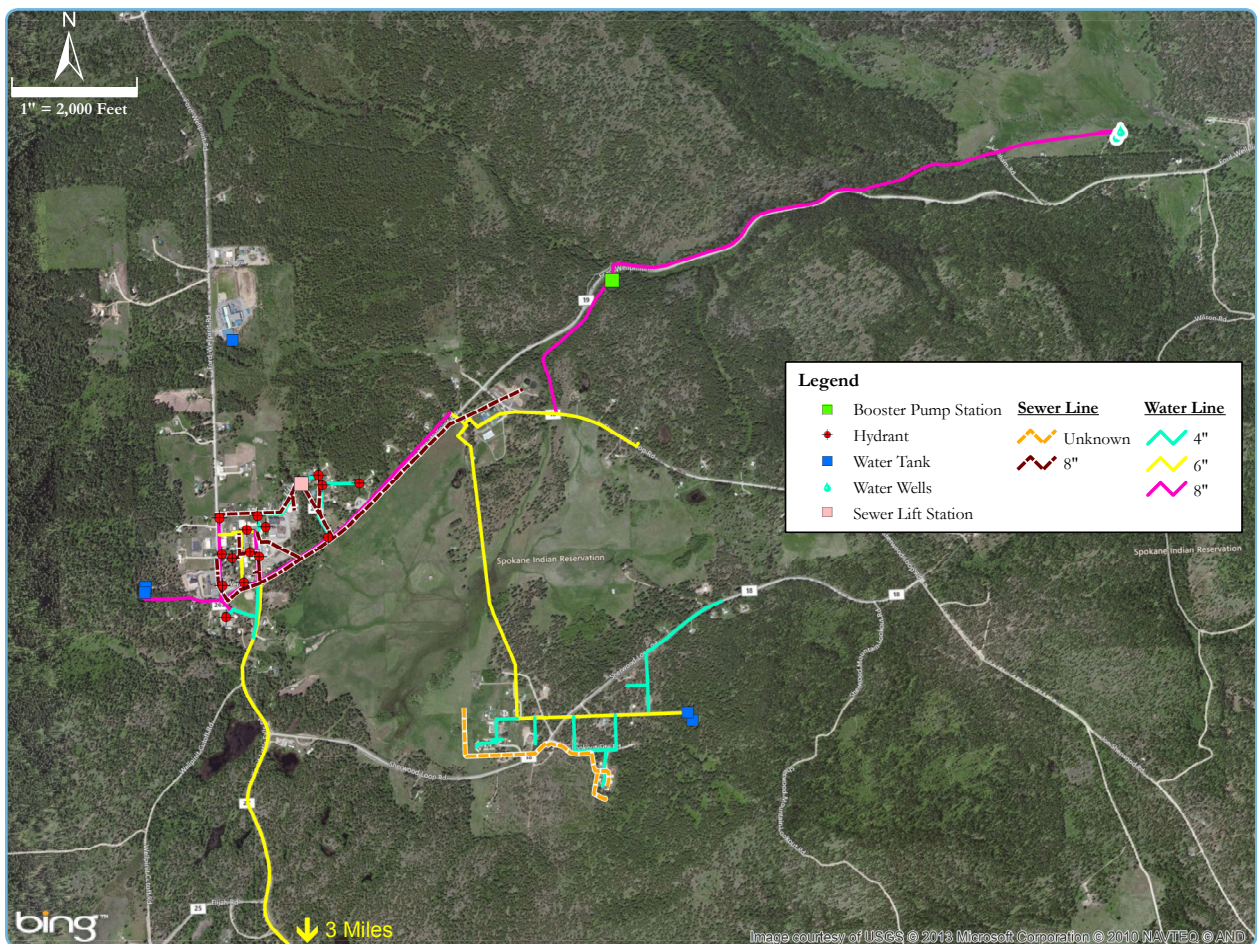


Figure 6. Wellpinit Water and Wastewater System

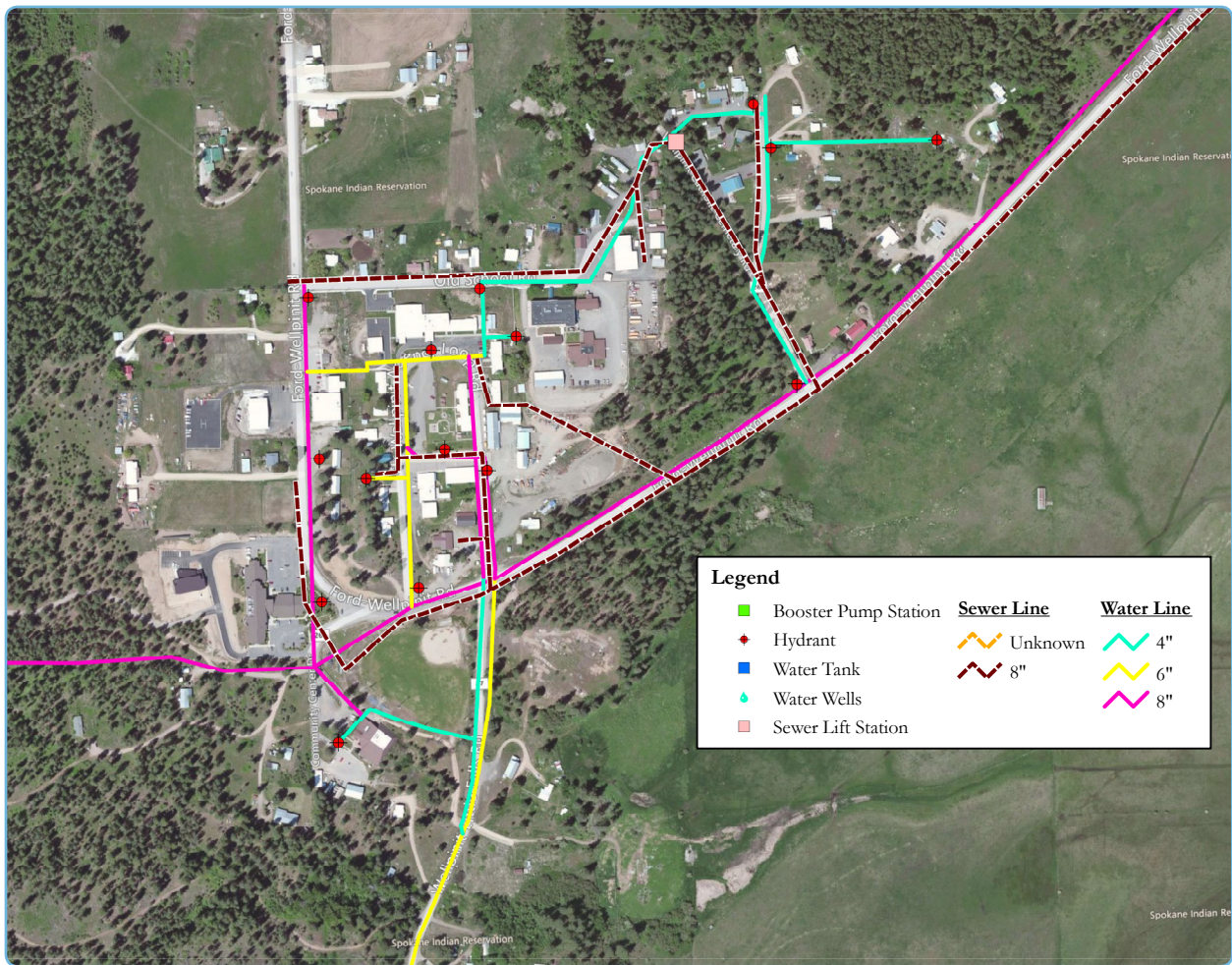


Figure 7. Wellpinit Water and Wastewater System

The Roads and Utilities Department and IHS explained that it would be helpful to update the control system for the water utility to better control the operation of the well and the main pump station. IHS is working to design and fund improvements to these controls, known as a supervisory control and data acquisition (SCADA) system. An improved control system would allow utility staff to control all water system operations from one central point.



Figure 8. Wellpinit Storage Tanks



The Roads and Utilities Department and IHS agreed that, in general, the drinking water system is in good condition and is meeting the demands of the current population. They also suggested that the plans for the second well would accommodate future growth projections and provide redundancy if the existing well had a problem.

B. Existing Wastewater Infrastructure

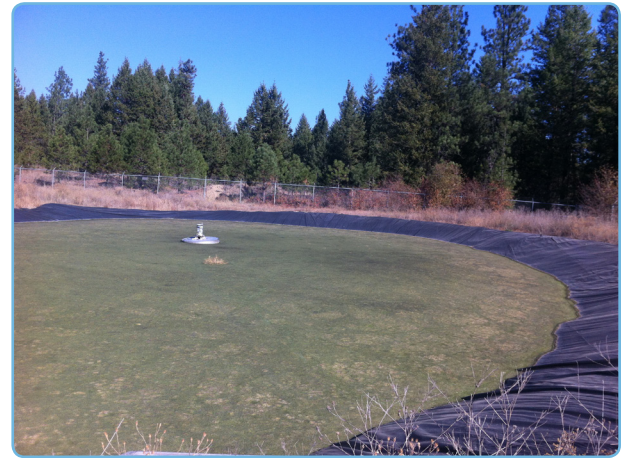



Figure 9. Existing Wastewater Lagoon System

Although some residents have private, on-site septic systems, most buildings in Wellpinit are served by the tribe's public wastewater system. The wastewater system is comprised of a collection system and a two-cell lagoon or pond treatment system (Figure 9). Wastewater is collected, mostly via gravity, and delivered to two aeration ponds with rubber liners to prevent wastewater infiltration.

IHS has been working with the tribe to evaluate potential expansion or replacement of the system to accommodate future growth. For future disposal, the tribe and IHS are considering either continued discharge to Wellpinit Creek or land disposal, which involves spreading treated effluent onto fields as fertilizer. Two of the largest challenges for both of these options are land availability and the cost and complexity of operations and maintenance.

A relatively large parcel of cleared land would be needed to accommodate the land application alternative. Ideally, the land would be close to the treatment facility to minimize the cost of transporting the treated effluent. The tribe does not own such a parcel, and while a private party might be interested in accepting the effluent as fertilizer, the tribe would need a clear agreement allowing the land application for the 20-year life span of the facility, if not longer, to make this option viable.

In addition, utility staff are familiar with the operation of the surface water discharge system, and changing to a land application process would create the need for new staff training. Therefore, the consensus at the workshop was that an updated plant with continued surface

 discharge might make the most sense. The project team incorporated this alternative into a set of next steps following the workshop.

C. Land Use Planning and Regulatory Framework

The center of Wellpinit includes a mix of commercial and residential development (Figure 10). Immediately surrounding the center are public and recreational uses, including a high school, ball fields, and tribal gathering areas. Most of the land use in the areas surrounding Wellpinit is rural residential and open space.

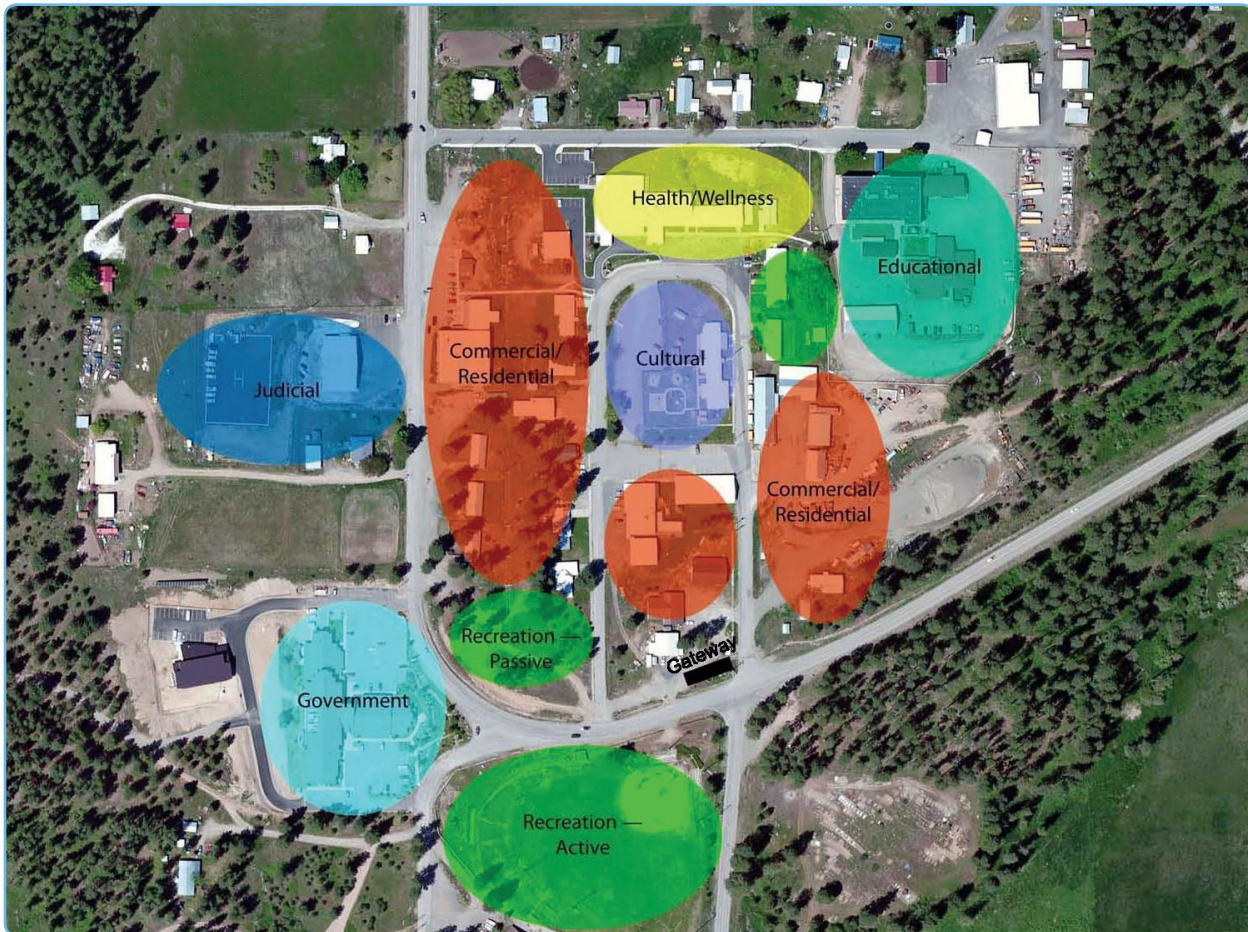


Figure 10. Existing Land Uses in Wellpinit (adapted from the Local Government Commission and Walkable and Livable Communities Institute Wellpinit Design Workshop)

The tribe's Integrated Resource Management Plan identifies goals, policies, and objectives that establish how the tribe intends to grow and develop its lands. One challenge to implementing the IRMP is that the tribe does not have land use regulations, such as a zoning code or subdivision rules. Without this regulatory authority, the tribe lacks enforcement mechanisms to ensure that the goals, policies, and objectives of the IRMP are met. However, as will be discussed later in this report, the tribe is drafting land use regulations to help meet this need.

The tribe also lacks an enforceable building code and rules and regulations for connecting to the public water or sewer system. Without a formal development review process, developers can connect to the water or sewer system without requesting permission from the Roads and Utilities Department. This not only allows new development to connect to an at-capacity wastewater treatment system, it also is a missed opportunity for the Roads and Utilities Department to collect fees to support the additional burden associated with each new connection.



The tribe does not have a capital improvement program or asset management process to plan new public facilities. An asset management plan is a valuable project and budget planning tool that can be either short or long range (e.g., one- to two-year plans or five- to 10-year plans). The plan would identify capital projects (e.g., water tank replacement or lagoon expansion), general or specific equipment repair or replacement, staffing needs, and/or purchases. An asset management plan provides a planning schedule and budget by identifying options for financing future upgrades and/or purchases. Typically, water and wastewater utility infrastructure, staffing, sampling, and other daily operational needs would be included in the plan. The plan can also help determine if the utility is charging its users enough to cover operation and maintenance costs or upgrades. A capital improvement program could go a long way to give the tribe a formal mechanism to plan for and finance these needs. Since IHS plays a large role in the replacement and upgrade of water and wastewater infrastructure, it would probably need to be heavily involved in the tribe's capital improvement planning. Further discussion about asset management is in Section 4.

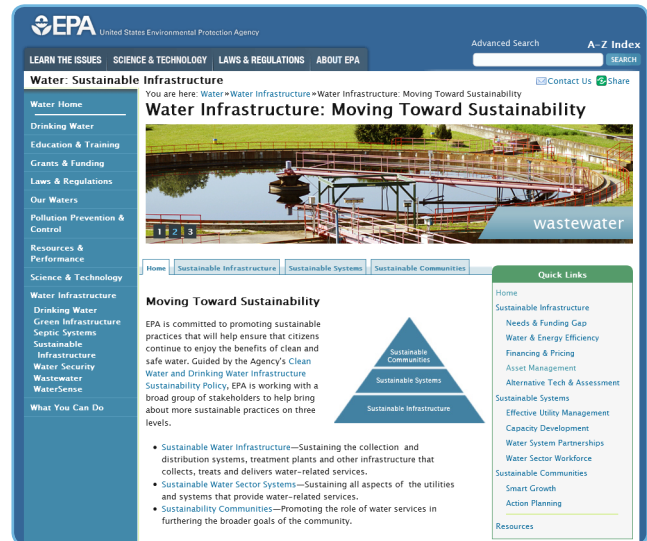


Figure 11. <http://water.epa.gov/infrastructure/sustain/index.cfm>

3. Next Steps

The final meeting of the three-day workshop included a discussion of the findings and potential next steps. The stakeholders that attended the final meeting agreed on a list of next steps that tribal staff and IHS would pursue for further action by the Tribal Business Council. These next steps include:

1. Developing a plan and conceptual design for a wastewater treatment plant upgrade.
2. Mapping the water system based on data collected during the workshop.
3. Preparing a sample regulatory approval process for water and sewer connections.
4. Developing a model coordinated development review process.
5. Educating the public about the cost of providing drinking water.



Tribal government staff have been working together to implement some of these actions and continue to develop next steps for the future.

A. Developing a Plan and Conceptual Design for a Wastewater Treatment Plant Upgrade

During the workshop, tribal staff and IHS agreed that the wastewater treatment system is at capacity and needs an upgrade to handle current peak flows and increased flows from future development. The project team worked with the tribe to develop concept designs. (See Appendix B for the conceptual design plans.) The concept design includes the following components:

- Install two new 30,000-gallon precast concrete settling tanks, a new aerated wastewater treatment lagoon, and a chlorine disinfection system or optional ultraviolet disinfection system. The upgraded system would function much the same as the current system.
- Chlorine is currently provided manually by putting chlorine tabs into a concrete vault downstream from the lagoons. An upgrade option could be an automated tablet chlorinator or the ultraviolet disinfection system.
- Opportunities to use solar power to service the wastewater treatment facility were discussed during the workshop. There might be sufficient land to construct a photovoltaic array near the plant, either on the property used for the plant or on a portion of the adjacent Pow Wow Grounds. The tribe could consider this option to develop an environmentally sustainable source of energy to power the plant.

IHS has been working to allocate funds for the final design and construction of these potential wastewater system improvements. The next steps are for the tribe to work with IHS staff to complete the design and ensure that the tribe is comfortable operating the new equipment. The construction process can begin when funds are available. This upgrade will provide the treatment and capacity to allow the type of growth the tribe has considered appropriate in its planning studies and documents.

B. Mapping the Water System Based on Data Collected During the Workshop

Before the workshop, the tribe and IHS provided the project team with GIS mapping data for the water and wastewater system. The team used these data to prepare maps of each system for use during the workshop. (See Appendix C for the updated water and wastewater system map and mapping protocol and checklist.) During the workshop, the project team along with IHS, representatives from the Roads and Utilities Department, the tribe's GIS manager, and other stakeholders visited the system to verify the mapping data and identify missing or inaccurate components. After the workshop, the project team updated the mapping data to include the systems and features that were located during the site visit.

These maps provide a good overview of the utility's existing infrastructure but do not provide specific locations of critical equipment used to operate both the water and wastewater systems. This issue was discussed during the workshop, and the Roads and Utilities Department Director stated that it would be critical to have all of its facilities, primarily those needed during emergency situations (e.g., fire hydrants and shut-off valves), mapped to sub-meter accuracy. To support the field-locating task, the project team prepared a water system mapping protocol and checklist that field staff could use. The checklist is intended to capture the fundamental features of the water system components. The updated water and wastewater system map, the water system mapping protocol, and the checklist are in Appendix C.



Figure 12. System Inspection for Mapping

The project team discussed the next steps related to this task during and after the workshop. The EPA project coordinator suggested that training could be provided through EPA's agreements with the Region 10 Environmental Finance Center or one of the affiliated centers across the country that support follow-up activities for recipients of Partnership for Sustainable Communities grants and assistance programs. (The Partnership is discussed in more detail on pages 17 and 18).

C. Preparing a Sample Regulatory Approval Process for Water and Sewer Connections

During the workshop, it became apparent that one reason the wastewater system is at capacity is that development projects are not required to get permission to connect to the water or wastewater system. The project team learned that there is no approval process for water and sewer connections. The Roads and Utilities Department explained that this is a significant issue, particularly for some of the larger projects that were recently constructed and connected to the wastewater system. The lack of an approval process also is a missed opportunity for obtaining fees to cover the cost of providing the service for the new connections. To overcome this, the project team developed a model Water and Wastewater Utility Connection Ordinance and Model Application Form based on the tribe's needs and best practices used by other U.S. tribes. Both the Model Ordinance and Model Application Form may be found in Appendix D.

Tribal staff would need to review and amend the sample ordinance to ensure that it reflects the tribe's goals for managing new connections. The tribe could also conduct a review and public discussion about the appropriateness of the proposed fee for a new connection. While a fee helps the utility recover the cost of adding a new connection, is it something the tribe wants to implement? Or is the primary purpose of the ordinance to initiate a review process for new connections to ensure that the system can accept the new effluent? The tribe could also consider using the connection fee to encourage development in designated areas by waiving the fee for new development in these areas. Once the tribe has finalized the ordinance language, the tribal department stakeholders could present it to the Tribal Business Council for adoption.



It is also important to note that the tribe does not have a building code. A building code could allow the tribe to prescribe provisions for water conservation measures and water reuse during new construction and major renovations. For example, new development could be required or encouraged to use water-efficient fixtures, such as faucets, showerheads, and toilets. To qualify, fixtures could be required to carry the EPA WaterSense® label. WaterSense® is a well recognized EPA partnership program that seeks to protect the future of our nation’s water supply by offering people a simple way to use less water with water-efficient products, new homes, and services.⁷

One way to encourage the inclusion of water-efficient fixtures in new development and major renovation projects would be to reduce or waive building permit and/or connection fees. If the tribe decides to adopt an enforceable building code, it might want to incorporate provisions for water conservation and reuse at that time.

D. Developing a Model Coordinated Development Review Process

The workshop discussions revealed that the tribe has no coordinated process for the Planning Department, the Roads and Utilities Department, or other departments to comment on development projects. In talking with other stakeholders, the project team realized that the lack of a formal development review process allows new projects in locations that are not consistent with the tribe’s master plan, as well as projects that the water and wastewater facilities cannot support. A formal coordinated development review process could incorporate standards that developers must meet, such as siting development in specified locations. It could also involve key reviewers, such as the Roads and Utilities Department, which can determine whether the new development will have impacts on existing infrastructure and how those impacts can be mitigated.

To address this issue, the project team developed a model Site Plan Review Ordinance for the tribe based on best practices from other tribes. The model ordinance includes sample development thresholds, key definitions, administration and enforcement mechanisms, application and review requirements and procedures, and approval standards. By adopting a formalized site plan review process, a community can have more control over the way development occurs. This model ordinance is in Appendix E.

Following the workshop, the tribe began working to develop a land use, zoning, and development code and a building code. Both codes were still in draft form as of the date of this report. The land use, zoning, and development code institutes duties and functions of the tribe’s Planning and Economic Development Department and Planning Commission. It also establishes a zoning code, which delineates zoning districts throughout the reservation and identifies allowed and prohibited uses in each district. The land use, zoning, and development code also puts forth a process for permitting development. This process normally requires permit applicants to complete an environmental and cultural checklist as part of their application. A technical

⁷ EPA. WaterSense®. www.epa.gov/watersense.

review committee, comprised of representatives from many of the tribal departments, has been established to review development applications. This process allows the tribal departments to comment on development projects that fall under the purview of the land use, zoning, and development code.



The next step for this action item is to evaluate the development review process and to integrate some of the provisions and standards from the site plan review ordinance with the more comprehensive land use, zoning, and development code. Once the various departments are satisfied with the ordinances, a group of tribal departmental stakeholders could present them to the Tribal Business Council for adoption.

E. Educating the Public about the Cost of Providing Drinking Water

A common theme expressed throughout the workshop was that the tribal water system customers do not appreciate or understand the monetary value associated with providing safe and clean drinking water. The tribe suggested that it needed public education about the true cost of public drinking water. To meet this need, the project team developed a one-page water system poster that the tribe can use to advertise the true cost of providing drinking water. (See Appendix F.) The poster demonstrates how inexpensive it is to receive water from the public supply in comparison to building a private well or buying bottled water. It also discusses the value of the regular water quality testing of the potable supply, which is not regularly done with other water systems.

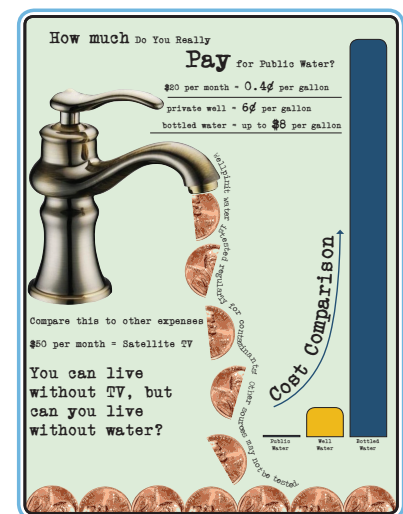


Figure 13. Public Outreach Poster

The Roads and Utilities Department can use this poster to educate water system users about the true costs associated with Wellpinit’s public water system. As residents understand the costs involved, raising rates to a financially sustainable level will hopefully be easier. A better understanding of how the utility works, how it is maintained, and the true cost of providing safe, clean water may help the tribe overcome the idea that water should be free. As with many aspects of change, education and outreach are keys to success.

4. Lessons for Other Tribes and Communities

Three of the major lessons from this project, applicable to tribes and communities across the country, are:

1. Sustainable water and wastewater infrastructure can support the tribe’s goals for smart growth development.
2. A sustainable water and wastewater utility requires appropriate pricing and system mapping.



3. A sustainable water and wastewater utility requires leadership, staff capacity building, and public education.

A. Sustainable Water and Wastewater Infrastructure Can Support Smart Growth Goals

The Spokane Tribe, like many other tribes and local communities across the country, wishes to improve its economy. It wants to direct local economic growth and development to its existing village center of Wellpinit, as noted in its land use plans, including the most recently updated SCMP (STOI, 2013). Economic growth and development inevitably increase the demand on public water supply and need for wastewater treatment. How and where that development and growth take place affects the amount of additional demand and infrastructure cost. Conventional growth, marked by large lots and dispersed development, increases the cost of delivering water and managing wastewater. Residences and businesses on larger lots often consume more water for lawns and landscaping. Dispersed development requires longer pipes, which lose more water through leakage and raise transmission costs. In addition, infrastructure investments that support water system expansion instead of upgrading and maintaining existing networks can lead to increasingly inefficient systems, greater waste, and higher capital and operating costs (EPA, 2006).

The Spokane Tribe has adopted three sets of guiding sustainability principles that work together to achieve the goals of the SCMP:

1. Seven Generations Planning Sustainability Model.
2. Smart Growth Principles (STOI, 2013).
3. The HUD-DOT-EPA Partnership for Sustainable Communities' Six Livability Principles.

These sustainability principles can help guide an alternative approach to conventional development patterns. This alternative approach is more environmentally and fiscally sustainable and can minimize development-related demand for public water and wastewater infrastructure and the associated costs.

The common theme among these three sets of sustainability principles is that development should be well planned and coordinated while protecting the environment and natural areas. These principles also encourage any new growth to be directed to previously developed areas that already have infrastructure systems in place. By adopting these principles as its overarching approach to development in the SCMP, the tribe has taken a clear stance on where and how it would like to see development occur in the future. However, the SCMP also identifies several challenges and opportunities, as well as goals and objectives, to following these guiding principles.



I. Applying the Seven Generations Planning Sustainability Model

The concept of Seven Generations Planning is common to many American Indian nations, but it is thought to have come from the Haudenosaunee (Iroquois Confederacy or Six Nations), in particular from their Great Law of Peace. According to the Seven Generations philosophy in the Great Law of Peace, chiefs must consider the effect their decisions have on descendants seven generations into the future (PBS, 2013). The goal of the Seven Generations Sustainability Model as described in the tribe's SCMP is to seek balance among culture, economy, and environment. This model can be applied to sustainable water and wastewater infrastructure planning by approaching development decisions in a way that balances all three components. For example, by directing development and redevelopment to previously developed areas, such as Wellpinit, that already have water and wastewater infrastructure in place, the tribe can increase economic development while protecting natural resources and reducing costs associated with providing clean public drinking water, a public health and cultural asset.

II. Applying Smart Growth Principles

Smart growth strategies can enhance the Seven Generations Sustainability Model by applying a range of development and conservation strategies that help protect the natural environment and make tribal communities more attractive, economically stronger, and culturally rich. Smart growth approaches promote infill development in areas with existing infrastructure, which helps protect and preserve land for agriculture, open space, natural systems, and rural lifestyles (APA, 2012).

Development that follows smart growth principles can help reduce the demand and costs associated with providing public water and wastewater service. For example, compact development can save money on new infrastructure, since commercial and residential users are closer together, requiring less piping than users that are more dispersed. When this development takes place in areas already served by water and wastewater infrastructure, the cost is further reduced. A 2002 Rutgers University study comparing the infrastructure costs associated with conventional development and compact development estimated that more compact growth nationwide could save \$4.77 billion, or 6.5 percent of total infrastructure costs, on water service alone from 2000 to 2025 (Burchell, 2002). The Greater Wasatch area of Utah determined that per capita water demand decreases dramatically as development becomes more compact, from approximately 210 gallons per day at a density of two dwelling units per acre to roughly 110 gallons per day at five dwelling units per acre (EPA, 2006). Therefore, compact development can help reduce overall water use and system management costs, which will result in reduced costs to utility customers.

III. Applying the HUD-DOT-EPA Partnership for Sustainable Communities' Six Livability Principles

In 2009, HUD, the U.S. Department of Transportation (DOT), and EPA formed the Partnership for Sustainable Communities to coordinate federal housing, transportation, water, and other infrastructure investments to help communities create more housing and transportation options, reduce transportation costs, protect the environment, and promote equitable development.



The Partnership agencies incorporate six livability principles into their funding programs and policies. These principles have been adopted as guiding sustainability principles in the SCMP.

One of the six principles is to “target federal funding toward existing communities—through such strategies as transit-oriented, mixed-use development and land recycling—to increase community revitalization, improve the efficiency of public works investments, and safeguard rural landscapes (US HUD, DOT, EPA, 2009).” Targeting funding in this way can help moderate impacts on public water and wastewater infrastructure by directing development toward developed areas that already have water and wastewater infrastructure.

B. A Sustainable Water and Wastewater Utility Requires Appropriate Pricing and System Mapping

A utility must set adequate rates to produce the revenue needed for management and maintenance. In addition, a sustainable utility can function better when staff have complete maps with physical locations of all water and wastewater infrastructure components. Pricing for service and basic maps help utility managers and staff undertake preventive maintenance and longer-term utility improvement projects.

I. Understanding the True Cost of Running the Utility

Before a utility can educate its tribal council and the public about the true costs of operation and maintenance, it first needs to educate itself. The true costs of utility service include everyday operations and maintenance activities as well as the costs of providing, renewing, and replacing capital equipment. All utilities incur these costs, but some of the costs might not appear on the utility’s books. For the Spokane Tribe, for example, true costs exceed book costs when the utility uses capital funded by grants or subsidized loans and when it defers or neglects maintenance. In addition, some of the true costs to run the utility (e.g., utility staff salaries, sampling requirements, training, licensure) have been absorbed by other departmental budgets (e.g., Department of Natural Resources), which makes it difficult to ascertain the utility’s true costs as a whole.

Utility staff identified the need to understand the true costs of running the utility so that it could relay those costs to others. These costs include the capital investment of a wastewater treatment system expansion, day-to-day operations and maintenance, water quality sampling, and capital upgrades. During the project, the project team calculated an operations and maintenance budget for the wastewater treatment plant expansion conceptual design. (See Appendix



Figure 14. Sampling at a Wastewater Treatment Plant

B.) Should the tribe decide to implement this expansion, this estimated, hypothetical budget calculation could help explain the anticipated costs and aid in planning for funding and managing the expansion.



In 2011, EPA’s Infrastructure Task Force conducted interviews with tribes on issues that could help improve sustainability of tribal water and wastewater infrastructure. Chief among the common needs that tribes identified were topics related to understanding the true costs, such as “managing utility funds independently from the general budget” and “running the utility as a business” (EPA ITF, 2011). Understanding and planning for true costs are essential to implementing and successfully running a public utility.

II. Appropriate Rate Structure

To be sustainable, rates need to be established at a level that will cover the utility’s operations and maintenance and management. One of the chief concerns expressed by the STOI’s Roads and Utilities Director and by many staff from other tribes was that the utility user rates are far too low. Revenue generated by ratepayers feeds into the budget for utility operation, maintenance, water quality testing, and capital upgrades. The tribe’s Roads and Utilities Director noted that the revenue does not meet budgetary needs. In addition, the fee collection rate (meaning how much money is actually collected versus what is billed) is also low, which exacerbates these budgetary issues.

The project team developed a model ordinance for a connection permit approval process. (See Appendix D.) The regulatory language would require all new connections to the utility system to obtain a connection permit as well as pay a connection fee to cover the cost of servicing the new connection. Other tribes that face similar budgetary shortfalls and do not have a utility connection approval process could adapt this model ordinance to meet their own needs.

III. Accurate Infrastructure Maps

Utility staff should have a strong understanding of the local infrastructure system. The Spokane Tribe knew that it needed to know the locations of the water and wastewater system components. A significant short-term need is knowing where emergency water system components, such as hydrants and shut-off valves, are located so that they could be readily accessed during an emergency, especially in winter conditions.



Figure 15. Mapping the Water System

The tribe also needs a more comprehensive locational database of water and wastewater system



components, which could also be used for asset management. In water and wastewater systems, an “asset” is a component of a facility with an independent physical and functional identity and age (e.g., pump, motor, sedimentation tank, or water main). Asset management is the ongoing and efficient maintenance of the system components at a desired level of service at the lowest life-cycle cost, which can help tribes minimize future operations and maintenance costs.

It is critical for tribal utilities to have a working knowledge of their systems so that they can access key components in an emergency. Other tribes might find the water system mapping protocol and checklist useful in mapping their own system components. (See Appendix E.) Tribes may also consider developing a comprehensive database for asset management to effectively and efficiently manage their system components. Several asset management resources are available for utilities. EPA’s website can be a good place to start.⁸ Environmental Finance Center staff may also be able to help tribes develop asset management programs.⁹

C. A Sustainable Water and Wastewater Utility Requires Staff Capacity Building, Leadership, and Public Education

During the workshop, tribal staff and stakeholders identified management and programmatic changes that can make the tribe's water and wastewater utility more sustainable.

I. Committed Utility Management and Certified Operators

The Roads and Utilities Director has been working to improve the utility’s rate schedule so that revenue can support day-to-day operations as well as long-term management of the utility. He has also been developing local regulations to help enforce utility rates. The technical qualifications of utility staff are important, but staff who manage a tribal water utility must also have strong communications skills to interact with a range of stakeholders, from IHS staff to the tribal council and public customers. Utility management staff can play an important role in providing public education and outreach about sustainability issues as well as advocating to political leaders and other partners for appropriate budget, programming, and staff to properly manage the utility.

EPA requires a tribe to retain a certified drinking water operator in order to receive funding through EPA’s Drinking Water Infrastructure–Tribal Set-Aside grant program to improve its water facilities. EPA strongly recommends that tribes retain a certified operator to run their wastewater facilities. Tribal representatives have suggested that tribal members who are trained as operators might have more incentive to work for the tribal utility as opposed to moving off the reservation to work for facilities where licensed operators are required (US EPA ITF, 2011).

⁸ U.S. EPA. Asset Management. http://water.epa.gov/infrastructure/sustain/asset_management.cfm.

⁹ Find information on the Environmental Finance Center at <http://efcnetwork.org>.

Tribes have many ways to certify their staff. The Native American Water Association, in partnership with the Association of Boards of Certification, offers a Tribal Operator Certification program for tribal members nationwide.¹⁰ Tribes can also look to EPA, the Rural Community Assistance Partnership, and other water and wastewater non-governmental organizations for support with operator training.¹¹



II. Committed Tribal Council

A tribal council that understands the need to upgrade existing infrastructure and plan for system improvements will support long-term planning through budget and policy decisions. Tribal councils and other elected officials must understand the basic operating needs and annual budget requirements to manage and maintain a water utility that meets both current and future needs of residents and businesses. This understanding will help when utility staff need approvals for funding and new regulations. Tribal councils can also play an important role in conducting public outreach and education for tribal members, ratepayers, and the business and development community.

III. Strong Communications and Relationships Among Key Stakeholders

To maintain a truly sustainable utility, staff members often depend on key stakeholders. For example, Planning and Economic Development staff develops long-term guidance documents for the community's development. This guidance can either encourage or discourage development patterns that support a sustainable infrastructure system. Tribal council members can advocate for practices and policies, such as utility connection permits, that build a sustainable utility. Local community leaders can help public education efforts and strengthen public trust in the utility. In addition, regional and federal partners, such as IHS and EPA, can provide programmatic and funding support.

The tribe felt that it was important to maintain these relationships and communications moving forward. Many government staff members suggested that it would be valuable to include staff from the different departments in a formal development review process for development proposals. As a result, the project team prepared a model site plan review ordinance that would allow key staff to serve on a site plan review committee to assess certain proposed developments. This model could be helpful to other tribal governments that would like to implement a formal, coordinated development review process.

IV. An Educated Public

Over the course of the workshop, tribal members frequently noted that the public does not want to pay for public water service because “water should be free,” and some felt that many people do not understand the costs of providing clean drinking water. Without this understanding,

¹⁰ Native American Water Association. Technical Assistance and Training Programs, Tribal Operator Certification Program. www.nawainc.org/programs.htm.

¹¹ www.epa.gov; www.rcap.org.



many people are unwilling to pay for water, and those who do pay might be upset about a rate increase. Educating the public about providing clean, safe water is key to transforming public perception of the true cost, which includes the salaries of the staff that operate and maintain the infrastructure, the testing and sampling required to ensure that the water is safe to drink, and management and upgrades to the water infrastructure.



Figure 16. Public Workshop

The project team developed an educational poster to display in public areas that describes the true cost to provide public drinking water. (See Appendix F.) Other mechanisms that tribes, including the Spokane Tribe, can use to educate the public include:

- Including flyers with water bills when they are sent to customers.
- Holding educational meetings and events.
- Educating children about what is involved in providing public drinking water in schools and providing information that children can pass on to their parents.

5. Conclusion

The Spokane Tribe of Indians, like many tribes and rural communities across the country, faces several challenges in providing clean and safe drinking water and wastewater services. The tribe lacks the economies of scale that benefit many larger utilities. Utilities are underfunded, leaving staff undertrained and systems improperly managed and maintained. These issues are exacerbated when a tribe plans for future housing and economic development in areas with an already overburdened water and wastewater system. To realize the multiple benefits of compact, infill development, the Spokane Tribe is taking steps to upgrade and expand its water infrastructure in order to meet today's needs and support future development in the town of Wellpinit.

A long-term plan for water infrastructure can form the foundation for future housing, transportation, and economic development. This plan must be supported with accurate mapping and tracking of existing infrastructure, adequate water utility rates to support basic operations and maintenance, a coordinated development review process that involves staff from the utility, siting and design standards for new developments being added to the water system, and public education and outreach. The Spokane Tribe is working to maintain and improve its water infrastructure so that it can fully implement the Sustainable Community Master Plan.

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Appendix A

Appendix A. EPA's Smart Growth Implementation Assistance (SGIA) Program

Communities around the country want to foster economic growth, protect environmental resources, and plan for development. In many cases they need additional tools, resources or information to achieve these goals. In response to this need the Environmental Protection Agency's Office of Sustainable Communities launched the Smart Growth Implementation Assistance Program in 2005 to provide technical assistance through contractor services to selected communities. EPA assembles teams of specialized consultants, bringing together expertise that meets a particular community's needs. While working with community participants to understand their aspiration for development, the teams bring experience from working in other parts of the country to provide best practices for consideration by the assisted community. The goal of the program is to help participating communities attain their goals, while also producing a resource (such as a report or set of guidelines) that can be useful to a broad range of communities facing similar challenges.

The Smart Growth Implementation Assistance Program is designed to help communities achieve growth that supports economic, community and environmental goals. People in communities around the country are frustrated by development that gives them no choice about driving long distances between where they live, work and shop; that require costly expenditures to extend sewers, roads and public services to support new development; that uses up natural areas and farmland for development while land and buildings lie empty in already developed areas; and that makes it difficult for working people to rent or buy a home because of development that focuses only on one or two costly housing types. Smart growth strategies create new neighborhoods and maintain existing ones that are attractive, convenient, safe and healthy. They foster design that encourages social, civic and physical activity. They protect the environment while stimulating economic growth. Most of all, they create more choices for residents, workers, visitors, children, families, single people, and older adults—choices in where to live, how to get around, and how to interact with the people around them. When communities undertake this kind of planning, they preserve the best of the past while creating a bright future for generations to come.

More information about the program, including information on how to apply and links to reports from past recipients can be found at www.epa.gov/smartgrowth/sgia.htm.

Appendix B

Appendix B - Wastewater Treatment Plant Expansion Design; Existing and Future Wastewater Flow Calculations; Updated Operations and Maintenance Costs for Expanded Wastewater Facilities; and Wastewater Treatment Lagoon Inspection Summary (This appendix provides an estimated, hypothetical budget calculation that could help the tribe in planning for funding and managing the expansion of the wastewater treatment plant.)

Wastewater Treatment Lagoon Inspection Summary

The publication *Small Wastewater System Operation and Maintenance, Volume 2, A Field Study Training Program*, prepared by the Office of Water Programs¹ offers best management practices intended to keep a lagoon similar to the tribe's in good working order. These tasks are typical and will allow proper treatment of the wastewater and extend the life of the lagoon cells and its component parts. Some of these items can be done as simple, daily, visual inspections. Others require more involved cleaning and maintenance monthly, quarterly, and/or annually. Horsley Witten Group, Inc. produced a hypothetical budget under contract to EPA for the Smart Growth Implementation Assistance Program project with the Spokane Tribe of Indians (see attached table). The hypothetical budget for these tasks was created using assumptions about hours needed and staff and management hourly rates, and should be used as an example only.

Scum and Odor Control

Each lagoon cell surface should be inspected for scum; a buildup of scum can cause odor problems. Scum can be broken up by agitation from the shore using garden rakes or jets of water from a pump or tank trucks. It can also be electively managed using aerators, similar to what the tribe has installed currently. These aerators will need cleaning, inspection, and maintenance as needed for proper operation.

Weed and Insect Control

Weeds around the edge of ponds can provide a sheltered area for mosquito breeding and scum accumulation. Weeds also can hinder pond circulation and reduce the effective breakdown of the solids, as well as provide areas for insects to multiply. Close inspection of the pond's edge and immediate removal of any plants, including the roots, should be performed as needed.

Dike and Levee Maintenance

Pond dikes should be stabilized with grass, stone, and/or recycled concrete block. Most lagoon dikes are grass covered. In this case, they should be mowed regularly during the growing season. Side slopes can be cut using sickle bars or weed-eater equipment. Seeding the dike side slopes with a slow-growth cover grass can crowd out undesirable weed growth. Sheep or other grazing animals have been found effective by tribes in lieu of mowing. Herbicides should be used as a last resort for vegetation control. Levee slopes should be inspected for erosion from wave action in the pond or surface runoff.

¹ California State University, Sacramento Foundation, 2002. Can be purchased for viewing here: www.pollardwater.com/pages_product/R0006SWSOM2book.asp

Headworks and Screening

Bar screens should be inspected and cleaned of debris as needed. The amount of cleaning will vary with each system based on its user community. Debris should be disposed of in a sanitary manner to avoid odors and fly breeding. Any settling tanks should be inspected and sediment removed as needed to eliminate “pass-through” of solids to the lagoon cells. Removal can be completed with a septic “pumper-truck.”

Chlorine System Inspection

Chlorine tablets should be inserted into the system to avoid bacterial discharge to the environment. A chlorine feeder system could be installed as future upgrade. The proposed tablet feeder allows for less frequent manual tablet insertion as the tablets build up in the feeder and are released based on the system flow. The feed tubes of the tablet feeder should be inspected and refilled with tablets as needed, and the inlet and outlet pipes should be inspected for flow obstructions. Occasional cleaning of the feeder is required to remove built-up residue.

Ultraviolet Disinfection (UV) System Inspection (Optional)

If a UV system were installed, the following tasks would be required. The quartz or Teflon surfaces of the UV system and the UV bulbs must be kept clean. UV bulbs should be removed when fouling is observed and cleaned as necessary. UV bulb cleaning and replacement will be based on the amount of flow and suspended solids in the effluent.

Water Quality Sampling

Influent and effluent samples should be collected on at least a monthly basis. Samples shall be analyzed by a certified laboratory for the following analytes; biological oxygen demand (influent and effluent), total chlorine, fecal coliform, total suspended solids, and pH. Total flow should also be tracked on a regular basis, preferably weekly. Additional samples may be required if high concentrations of these analytes are discovered in the effluent until a remedial action is completed and concentrations return to below allowable discharge limits.

Reporting

The tribe should complete monthly updates to its water quality summary data worksheet. Notes from each inspection should be recorded in a bound notebook and kept on site. A short summary description of tasks completed should be completed each month; a more comprehensive report should be completed annually. This report should summarize water quality data including any unusual results; descriptions of equipment, maintenance activities, and needs for repair or replacement; total flow; visual observations of the lagoon surface; dike and grass condition; and any needed upgrades.

Appendix B
Estimated Operation and Maintenance Costs
Spokane Tribe Wastewater Treatment Lagoon
Prepared by: Horsley Witten Group
February 2013

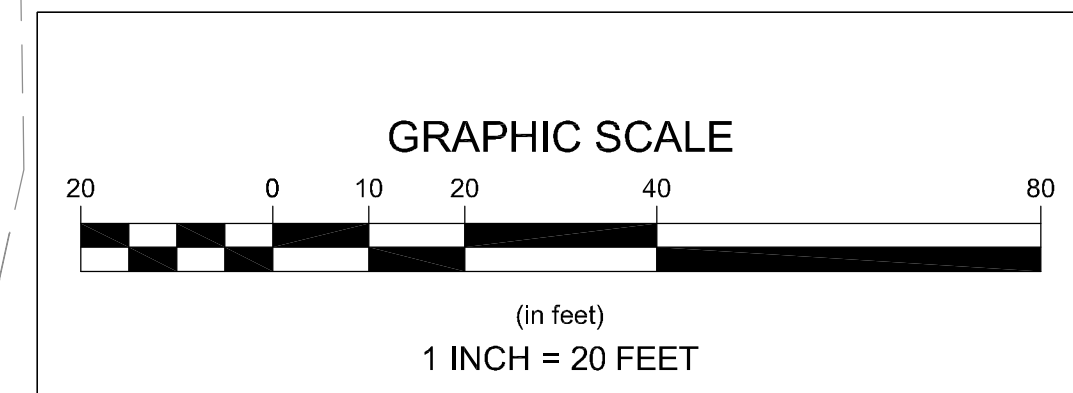
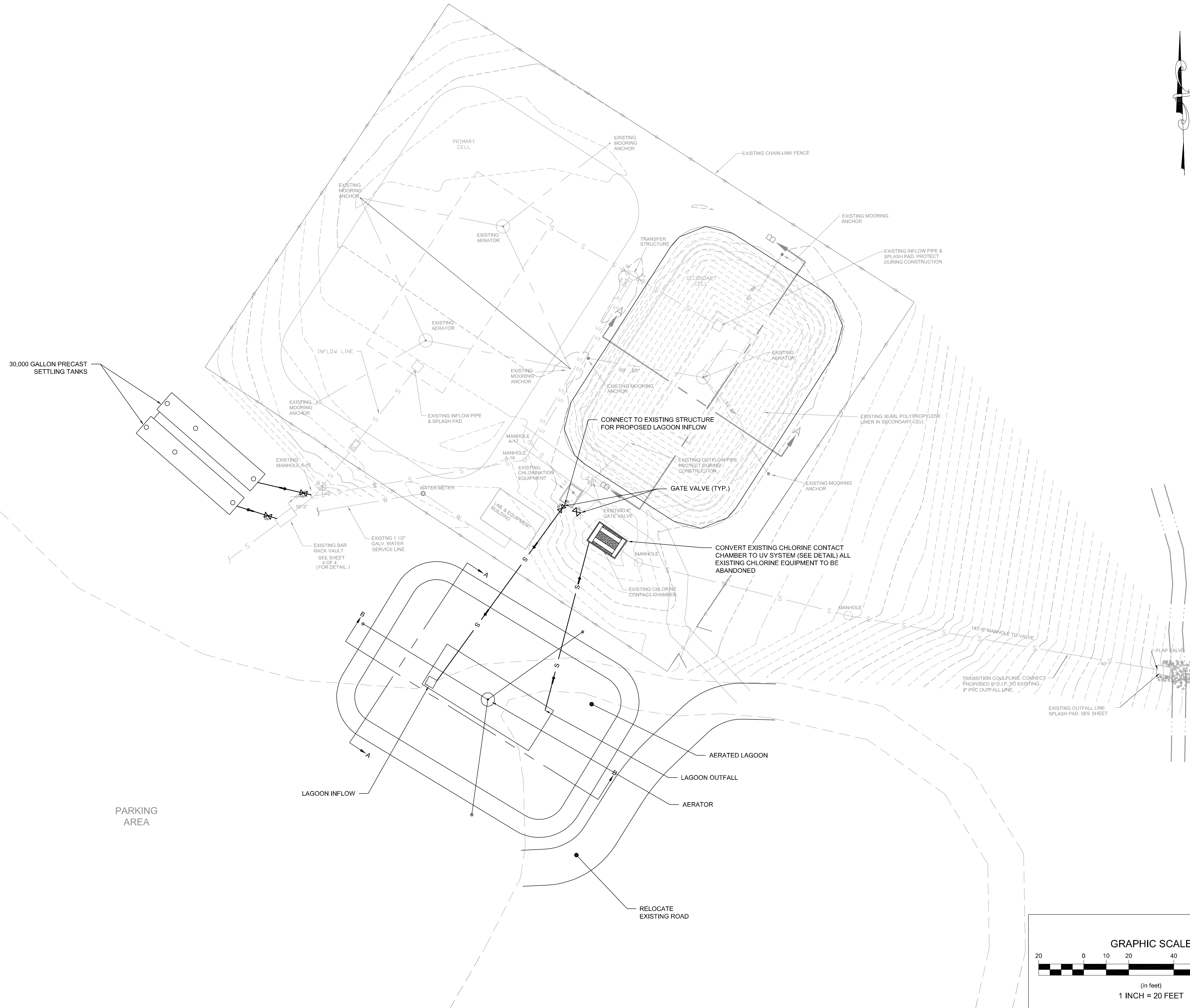
Item No.	Description	Unit	Quantity	Unit Cost	Item Cost
1	Daily Inspection (includes the following):	hourly	2	\$ 12.00	\$ 24
2	Inspect for Scum and odors				
3	Inspect for Weed & Insect issues				
4	Levee/Dike Inspection				
5	Clean Headworks and Screening				
6	Chlorine/UV system inspection				
7	Total Hours Per Year		520	\$ 12	\$ 6,300
8	Chlorine tabs for disinfection	100 lbs	1	\$ 500	\$ 500
9	Dechlorination	yearly	1	\$ 1,000	\$ 1,000
10	General Mechanical service calls	allotment	1	\$ 5,000	\$ 5,000
11	Water Quality Sampling & Lab Costs	yearly	1	\$ 3,100	\$ 3,100
12	Lab Supplies	yearly	1	\$ 1,500	\$ 1,500
13	Electrical Usage (Three Aerators)	yearly	1	\$ 7,400	\$ 7,400
14	Electrical Usage (Optional UV Disinfection)	yearly	1	\$ 1,100	\$ 1,100
15	Management/Reporting (NPDES)	hourly	96	\$ 25	\$ 2,400
16	Settling Tank Pumping	yearly	1	\$ 3,000	\$ 3,000
17	Replacement Fund (mechanical components)	yearly	1	10%	\$ 5,000
18	Level 2 Wastewater Operator	yearly	1	\$ 20,800	\$ 20,800
	Yearly Cost				\$ 57,100

Notes:
a. Costs are rounded to two significant digits.
b. Daily inspections are based on recommendations from "Small Wastewater System Operation and Maintenance, Volume 2, A Field Study Training Program, prepared by the Office of Water Programs, California State University, Sacramento".
c. Hourly sampling and lab costs are based on a labor rate of \$15/hour and management rate of \$25/ hour.
d. Laboratory Analyses include potential monitoring requirements for a NPDES permit.
e. Level 2 Wastewater Operator costs are based on a labor rate of \$50/hour for 8 hours/week.
f. Costs for electrical power are based on power costs of \$0.10 per kilowatt hour.
g. All costs are referenced to operation in 2013.

Water and Wastewater Flow Projections Through 2030
Wellpinit Community
Spokane Tribe

Current Water Use Within Wellpinit ¹	Current Population (1/3 of Tribal Pop.) ²	Projected 2030 Population (1/3 of Tribal Population) ²	Estimate Percent Increase in Water Use	Projected 2030 Water Demand
58,000 gpd	698	854	22%	71,000 gpd

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Revisions	Rev	Date	By	Appr	Description

Horsley Witten Group, Inc.
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 508-833-3150 fax

Drawn By: JEH
 Designed By: JEH
 Checked By: JEL
 Date: February 2013

Plan Title: **SPOKANE TRIBE OF INDIANS
 CONCEPTUAL LAGOON MODIFICATION
 WELLPINIT, WASHINGTON**

Option 2 - UV SYSTEM SITE PLAN

Prepared For: **Spokane Tribe of Indians
 Wellpinit, WA**
 Phone: FAX:

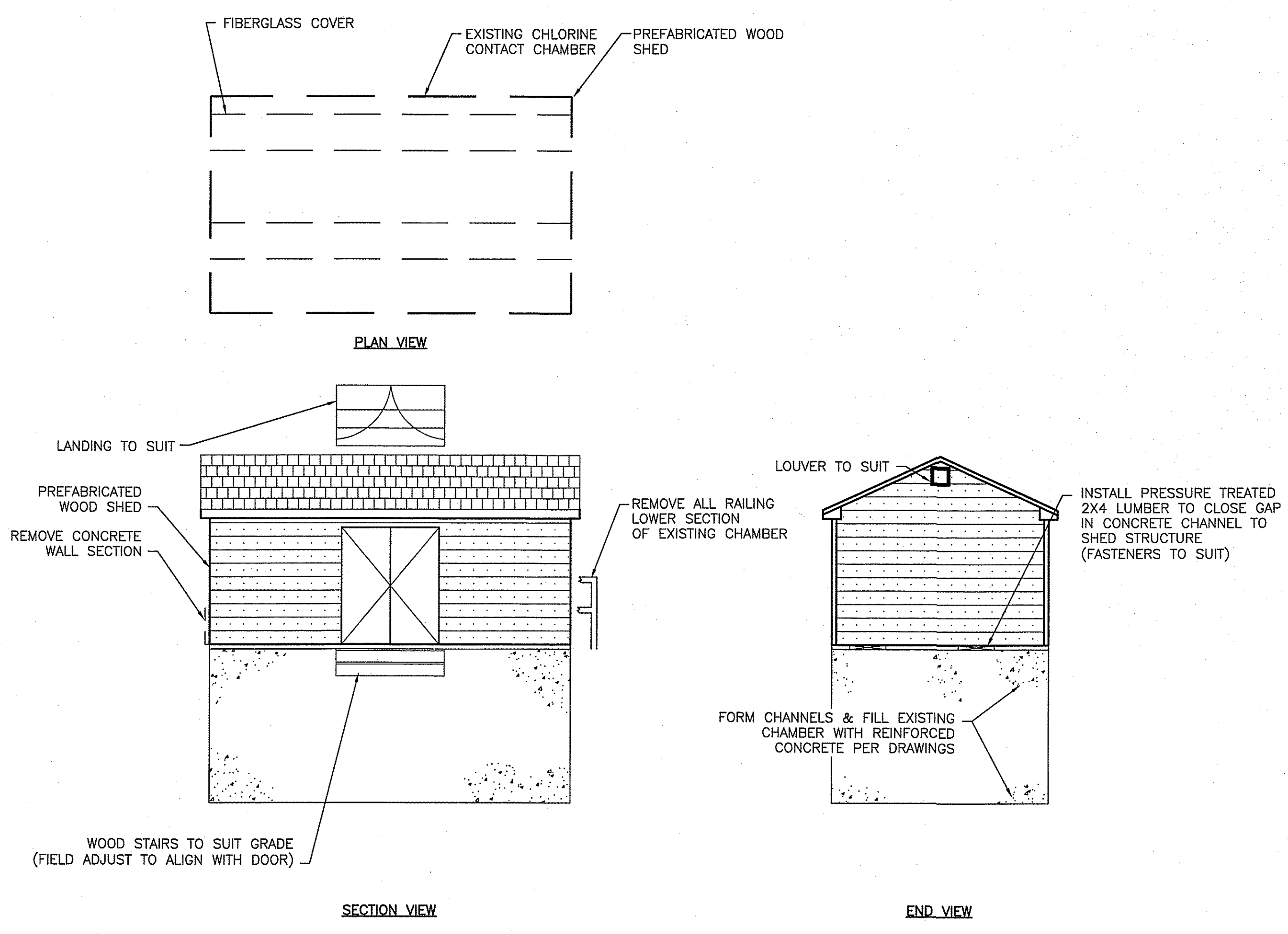
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 Indian Health Service Environmental Health and Engineering
 Branch
 Spokane District Office, Spokane, WA**

Registration:

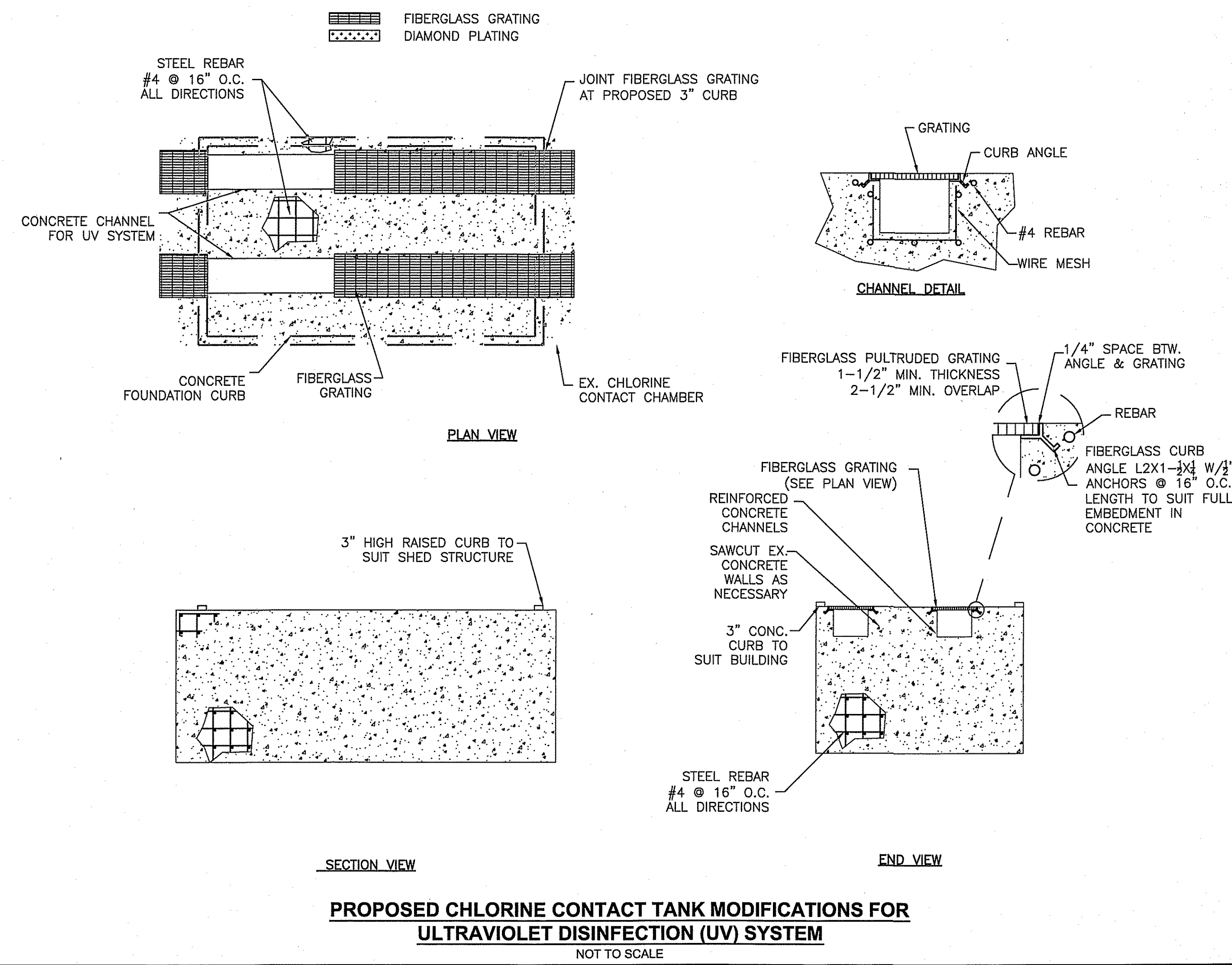
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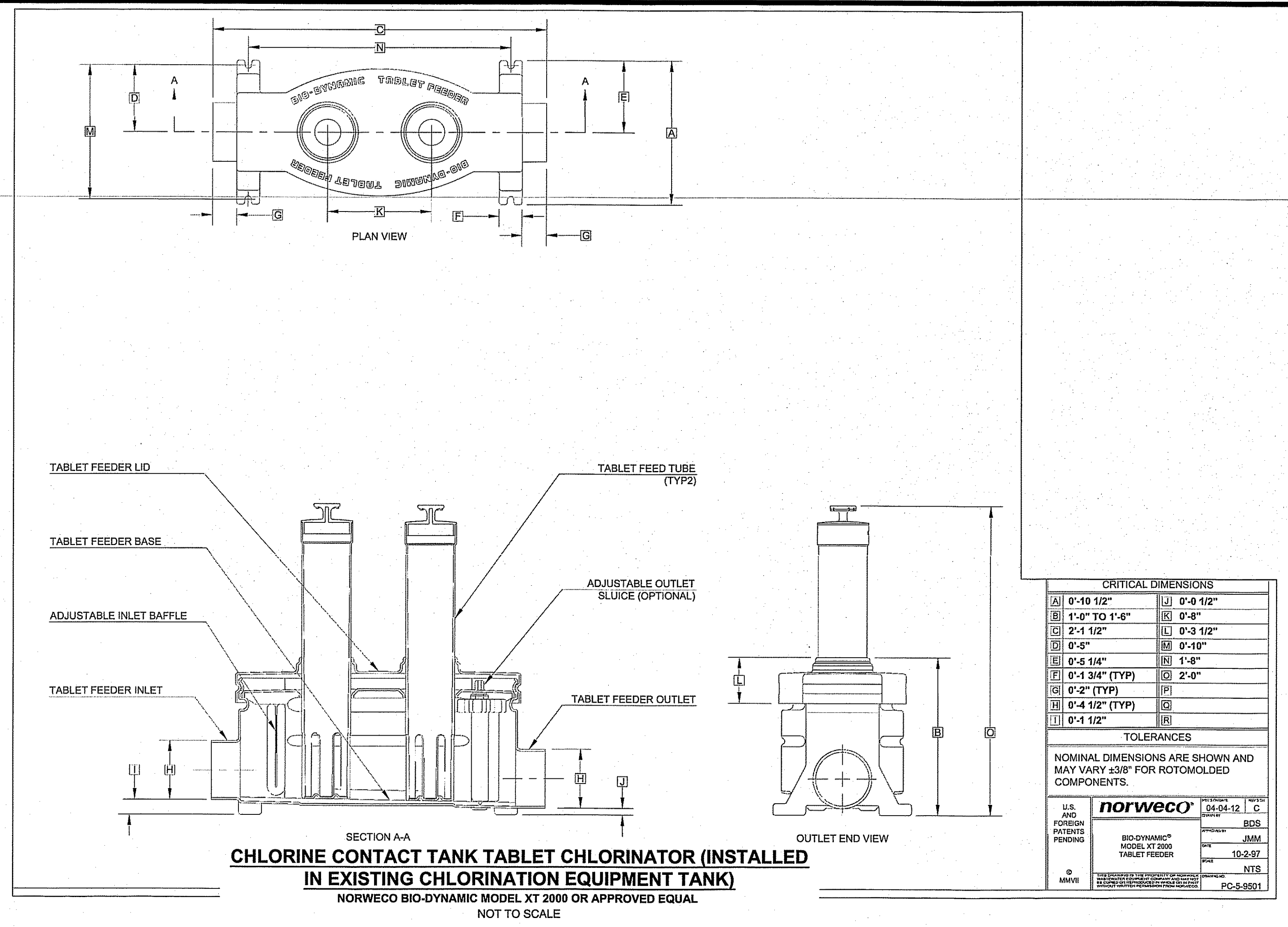
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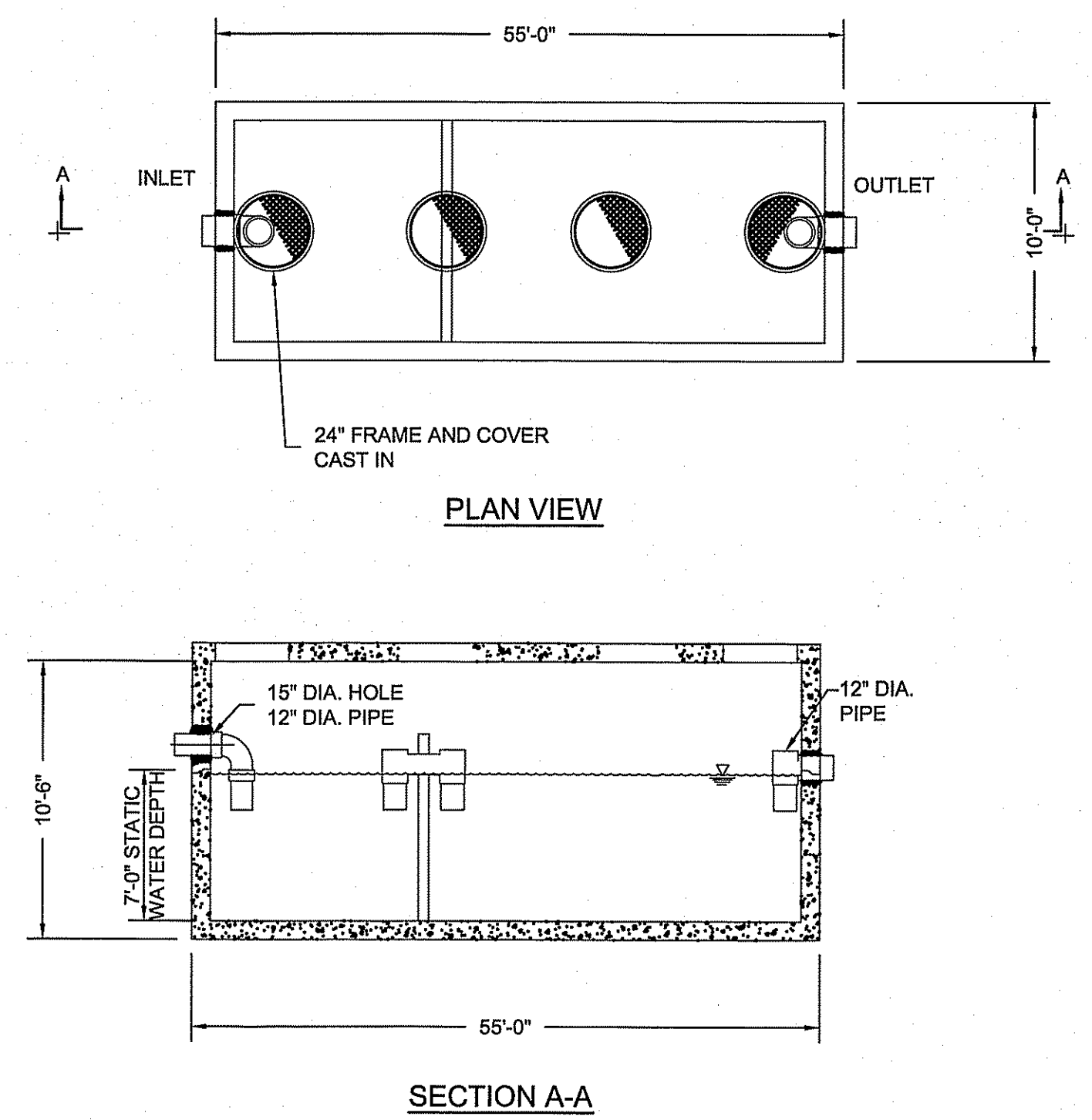
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NOT TO SCALE



PROPOSED CHLORINE CONTACT TANK MODIFICATIONS FOR ULTRAVIOLET DISINFECTION (UV) SYSTEM
NOT TO SCALE

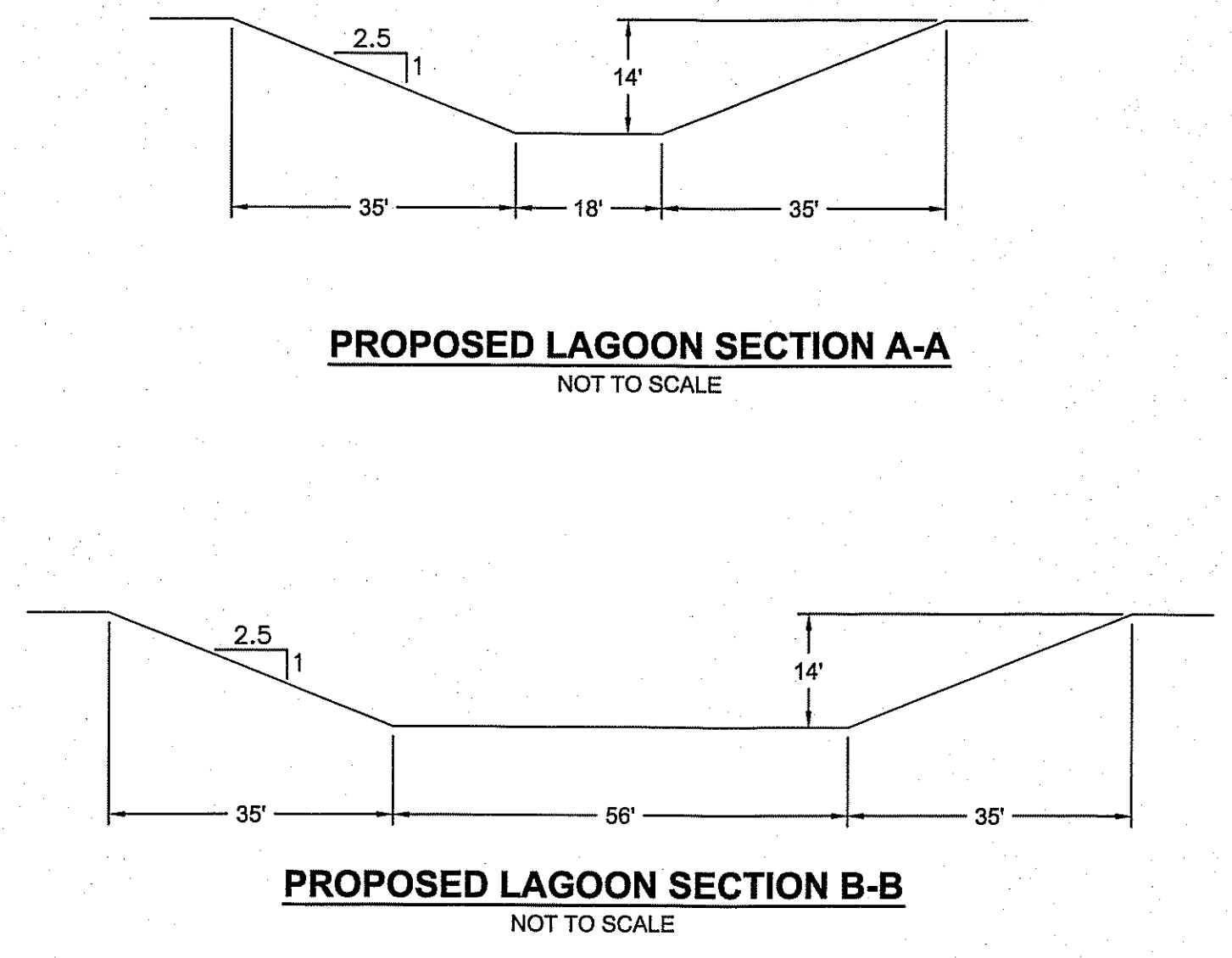


CHLORINE CONTACT TANK TABLET CHLORINATOR (INSTALLED IN EXISTING CHLORINATION EQUIPMENT TANK)
NORWECO BIO-DYNAMIC MODEL XT 2000 OR APPROVED EQUAL
NOT TO SCALE



SEPTIC TANK (30,000 GALLON)
NOT TO SCALE

- GENERAL NOTES:
 1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH F'C = 5,000 PSI
 2. STEEL REINFORCEMENT: ASTM A-615, GRADE 68
 3. DESIGN LOADING: AASHTO-H20



PROPOSED LAGOON SECTION A-A
NOT TO SCALE

PROPOSED LAGOON SECTION B-B
NOT TO SCALE

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<p>SPOKANE TRIBE OF INDIANS CONCEPTUAL LAGOON MODIFICATION WELLPINT, WASHINGTON</p>																																													
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Appendix C

Appendix C - Updated Water and Wastewater System Map; Water System Mapping Protocol; and Water System Mapping Checklist

The Spokane Tribe Water System Field Data Collection protocol is intended to collect locational data and other attributes of existing water system components. This data collection can help map these components so that the Spokane Tribe Public Utilities Department can find them in an emergency, particularly in winter when components such as shut-off valves and fire hydrants might be covered in snow. The technology used for the data collection should be either land survey equipment or a global positional system (GPS) unit capable of locating the water system features with a margin of error of no more than 3 feet.

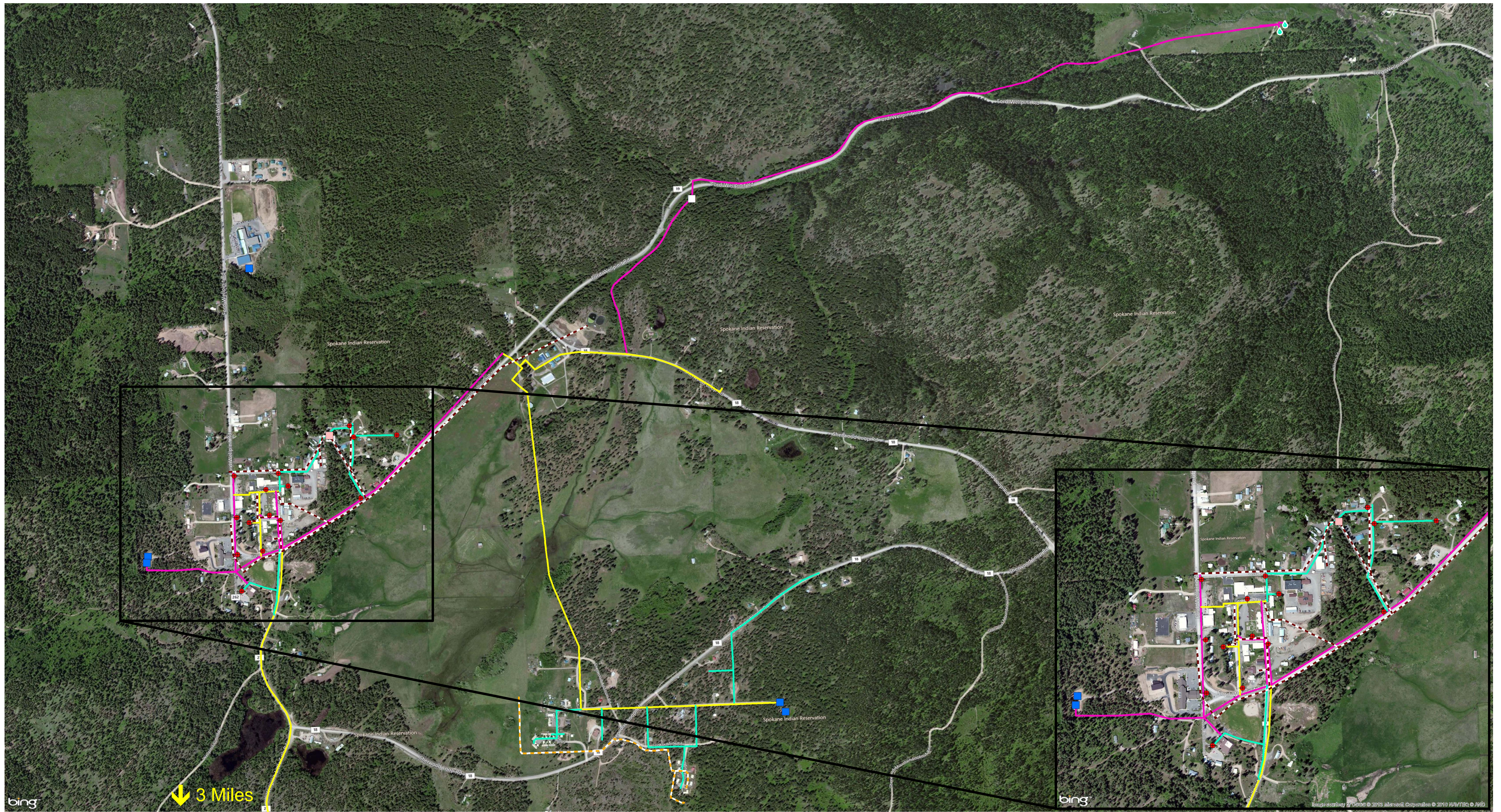
Field data collection technicians could use the Spokane Tribe Water System Field Observation Mapping Form to collect the data. One form should be used for each component. The highest priority components for the mapping effort are fire hydrants and shut-off valves. Therefore, the Spokane Tribe would field-locate these components first.

The Spokane Tribe Public Utilities Department would keep the original Water System Field Observation Mapping Forms and provide copies to the Spokane Tribe Geographic Information Systems (GIS) Department for mapping. The GIS Department could use the data in the forms to prepare a water system mapping database, which can be continuously updated as features are located and data are refined.

Spokane Tribe Water System Field Observation Mapping Form (one page per facility)

Date:	Month: _____ Day: _____ Year: _____
Accessibility:	<input type="checkbox"/> Vehicle Accessible, Unfenced <input type="checkbox"/> Vehicle Accessible, Fenced Facility <input type="checkbox"/> Not Accessible by Vehicle
Facility type:	<input type="checkbox"/> Shut-off Valve (<i>GIS code: 255</i>) <input type="checkbox"/> Water Meter (<i>GIS code: 285</i>) <input type="checkbox"/> Fire Hydrant (<i>GIS code: 289</i>) <input type="checkbox"/> Supply Well (<i>GIS code: 303</i>) <input type="checkbox"/> Tank (<i>GIS code: 305</i>) <input type="checkbox"/> Pump House (<i>GIS code: 334</i>) <input type="checkbox"/> Other; please specify: _____
Facility name:	
GPS Located?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please enter Lat/Long: _____ Elevation: _____
Street (closest address):	
Is the facility operational?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Owner:	<input type="checkbox"/> Spokane Tribe <input type="checkbox"/> Other; please specify: _____
Reference drawing / document file number and page (if known):	
Depth elevation (if a well):	
Other distinct notes (i.e., buried, paved):	

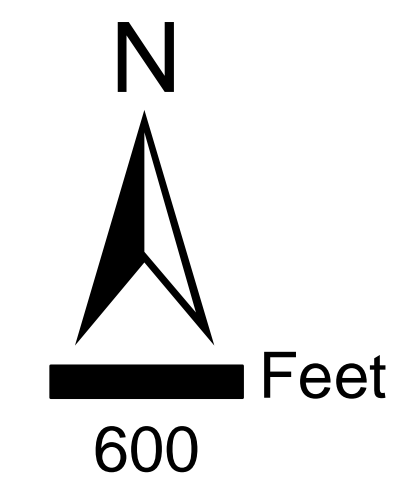
Sketch (locate nearest utility pole, etc.):



Document Path: H:\Projects\EPA\IOSC\12072 Spokane Tribe SG Assistance\GIS\Maps\WAD_1983_HARN_StatePlane_Washington_North_FIPS_4601_Feet.mxd

Legend

- | | | | |
|---|----------------------|-------------------|-------------------|
| □ | Booster Pump Station | Sewer Line | Water Line |
| ◆ | Hydrant | --- Unknown | — 4" |
| ■ | Water Tank | --- 8" | — 6" |
| ● | Water Wells | | — 8" |
| ■ | Sewer Lift Station | | |



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**Water and Wastewater Map
Wellpinit, WA**

Appendix D

Appendix D - Model Water and Wastewater Utility Connection Ordinance and Model Application Form

One of the Spokane Tribe Public Utilities Department's challenges is its limited control over the approval and subsequent utility connection of development projects in its service area. One option for helping the department meet this challenge is this model water and wastewater utility connection ordinance, which Horsley Witten Group developed as part of the EPA Smart Growth Implementation Assistance project.

1.0 Purpose

The goal of this ordinance is to identify the general rules for connecting to the tribal water and wastewater utilities.

2.0 Definitions

Consumer: Person connected to the tribe's utility system or using the utility system with permission.

Community Water System: Public system that provides water for human consumption to a non-transient population of at least 25 service connections, which are used by year-round residents, or regularly serves at least 25 year-round residents.

Curb Stop: Shut-off for a unit of service from the lateral and mainline of the tribe's community water system.

Person: any and all persons or parties, including any individuals, corporations, partnerships, other organizations or governmental entities.

Sanitary Sewer: Sewer that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with minor quantities of ground, storm and surface waters that are not admitted intentionally.

Utility: Facilities and infrastructure for the production, transmission, delivery or furnishing of services, such as water, wastewater treatment or power, to the public.

Wastewater: Spent water of a community. Wastewater can be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants and institutions along with other water present, but not intentionally admitted, in the system.

3.0 Application for Utility Service

- a) Every person who wants to connect to the tribal utility system shall file an application with the Public Utilities Department using the application form provided as Attachment A.
- b) If the application is approved, the Public Utilities Department shall provide the services listed on the application.
 1. The applicant is responsible for providing infrastructure necessary to make the service connection from the curb stop or other such start of the service connection to the applicant's facility.

2. There is a \$20.00 fee for connection to the tribal utility system, either as a new consumer or to be reconnected after services have been shut off.
3. If it appears that the service will not be adequate for the uses listed on the application, the Public Utilities Department may reject the application. The Public Utilities Department may also reject the application if the person has an outstanding unpaid balance owed to the tribe for previous or other tribal utility services, or owed to the tribe for housing services.

A \$20 connection fee is proposed here; however, the tribe should establish a rate that is most appropriate for them.

4.0 Obtaining Service without Authorization

- a) No person may obtain services from a tribal utility without authorization from the tribe.
- b) Any person, who obtains such unauthorized services by connecting to utility facilities without authorization or by tampering with or bypassing any meter, shall be liable to the tribe for three times the value of the actual service obtained, in addition to the cost of correction.

5.0 Consumer Obligations to Receive Utility Service

- a) As a condition for receiving utility services, the consumer agrees to comply with all provisions of this ordinance and any other applicable laws or requirements, including being current in the payment of all fees or other charges assessed by the tribe.
- b) The consumer is responsible for maintaining water, sewer, or other utility lines for the service connection from the curb stop or other designated start of the service connection.
 1. The consumer will notify the Public Utilities Department in advance of major maintenance or other work planned for water, sewer, or other utility lines on the consumer's premises.
 2. The consumer will permit the Public Utilities Department to inspect the work for compliance with applicable requirements.
 3. The consumer will be liable for any damage to the tribe's lines, equipment, or other property caused by the consumer, his/her family, guests, tenants, or other third-parties under the consumer's control or authority.
- c) The consumer shall not unreasonably withhold permission and prevent the Public Utilities Department from entering and inspecting fixtures, lines, and equipment as necessary to ensure that they are operating in a manner that would not likely disrupt or interfere with utility services.
 1. The consumer must at all times, frankly and without concealment, answer questions relative to the use of tribal utilities.
 2. The consumer shall be liable for any costs or related expenses caused by unreasonable withholding of permission.
- d) The consumer shall not make, or allow others to make, any cross connections with the community water system or community sanitary sewer system on his/her premises, without prior permission from the Public Utilities Department.
 1. A cross connection is defined as any physical connection between the tribe's community water system and another piping system, including public or private sanitary sewer systems or domestic water systems.

2. Any individual water source, such as a private well, must be totally disconnected from the household plumbing prior to connection to the tribal public water system.
 3. Disconnections that are done solely by a valve shall not be allowed.
- e) Excessive use or waste of water is prohibited and repeated violations may be cause for suspension of water service. Service will be resumed only after correction of the condition causing the water wastage and payment by the consumer any fees, penalties and other utility accounts in arrears to the tribe.
 - f) The consumer shall only use the community sanitary sewer collection and disposal system for the disposal of normal household liquid waste, including waste from toilet facilities, bathing facilities, and kitchen facilities.

6.0 Inspections and Right of Entry

- a) The Public Utilities Department, or its authorized representative, is hereby authorized to make limited, reasonable inspections, at reasonable times, of any grounds, building, or residence served by the tribe to the extent necessary to ensure that consumer utility fixtures, lines, and equipment are not being operated in a manner that would likely disrupt or interfere with utility services.
- b) Except in cases of emergency where life, limb, or property are threatened, or in cases of immediate water shortages, the Public Utilities Department will give the consumer at least twenty-four (24) hours notice prior to requesting permission to enter and inspect.
 1. If permission to enter and inspect is denied or impeded in any way, the tribe may obtain a court order authorizing such entry and inspection.
 2. Where the permission to enter and inspect is unreasonably withheld, the tribe may assess court costs and related expenses and add them to the affected consumer's bill.

7.0 Severability

If any section, subsection, or other part of this ordinance is held to be invalid, such decision shall not affect the validity of the remaining portions of the ordinance.

Attachment A:

Model Water and Wastewater Connection Permit Application for the Spokane Tribe of Indians

Applicant's name: _____

Applicant's address: _____

Applicant's telephone number: _____

Agent's name (if being represented): _____

Agent's address: _____

Agent's telephone number: _____

Please select whether this is existing development or new construction:

- Existing development
- New construction

Account number(s) (if existing): water: _____ sewer: _____

Please select whether this is residential, commercial, or other:

- Residential
- Commercial; please describe: _____
- Other; please specify: _____

Number of units (two-family, etc.): _____

Number of bedrooms: _____

Number of bathrooms: _____

Water shut-off date (if off): _____

Reason for shut-off: _____

Private well information (existing or if attempted): _____

Private septic system information (existing or if attempted): _____

Signature: _____ **Date:** _____

Appendix E

Appendix E - Model Site Plan Review Ordinance

This model site plan review ordinance can help the Spokane Tribe of Indians create a formal review framework that includes local government officials, particularly the Public Utilities Department superintendent, in the development proposal review process for larger development proposals. Under this framework, a technical review committee made up of tribal government officials, including the Public Utilities Department superintendent; officials from the Housing, Transportation, and Planning and Economic Development Departments; and other appropriate staff or superintendents, would review the project proposal and give a formal recommendation to the Tribal Council. Final approval of development projects that meet the site plan review thresholds would remain under the purview of the Tribal Council or a small constituency thereof. Horsley Witten Group, Inc., developed this model ordinance as part of the EPA Smart Growth Implementation Assistance project.

Commentary boxes (highlighted in green) throughout the model ordinance provide further explanation of each provision and how they could be modified to better suit the specific needs of each Tribal Department or Committee.

1.0 Purpose

The site plan review provisions set forth in this ordinance are intended to protect the public health and safety, promote the general welfare of the community, and conserve the environment.

2.0 Applicability of Site Plan Review

A person who has the right, title, or interest in a parcel of land must obtain site plan approval prior to commencing any of the following activities on the parcel, obtaining a building or plumbing permit for the activities (where required), or undertaking any alteration or improvement of the site:

- (a) Ground disturbing projects – any project on tribal lands regardless of the type of project that disturbs or alters more than one acre of ground;
- (b) Commercial/institutional projects – any commercial, industrial, office, or institutional development project to be located upon tribal lands which involve any new construction, reconstruction, remodeling, and/or demolition of a building or structure privately owned, tribally owned, or owned by any public or semipublic corporation or body;
- (c) Multi-family residential projects – any subdivision, multifamily structure, or parcel of land containing three or more residential units.

Section 2.0 identifies example thresholds for site plan review. These thresholds should be modified to reflect local conditions and what is most appropriate for the tribe. It should also take into account staff capacity to review project proposals. Lowering the thresholds captures more development, but requires more staff time. The thresholds proposed here are based on the site plan review thresholds used by the Eastern Band of Cherokee Indians. (See www.narf.org/nill/Codes/ebcicode/index.htm.)

3.0 Definitions

Building: Any permanent structure, having one or more floors and a roof, which is used for the housing or enclosure of persons, animals, or property. When any portion thereof is separated by a division wall without opening, then each such portion shall be deemed a separate building.

Right-of-way: A public or private area that allows for the passage of people or goods. Right-of-way includes passageways such as freeways, streets, bike paths, alleys, and walkways. A public right-of-way is a right-of-way that is dedicated or deeded to the public for public use and under the control of a public agency.

Setback: The minimum distance from a property line or off-site building or structure to where an on-site building or structure may be built, as regulated by zoning ordinances or restrictions in other tribal regulations or codes.

Structure: Anything constructed or erected, which requires location on the ground or attached to something having a location on the ground, but not including a tent or a vehicle.

Tribal lands: Any real property held in trust for the Spokane Tribe of Indians or owned by the tribe.

Section 3.0 should define any terms that could be misunderstood or misinterpreted within the site plan review ordinance. It is important that these terms are cross-referenced with other tribal ordinances to ensure that there is consistency among definitions of terms.

4.0 Administration and Enforcement

The administration and enforcement of the site plan review process shall be the responsibility of the [*Tribal Business Committee*]. In addition, in the event that tribal funds are to be expended for extension of public utilities, or for the construction or extension or reduction of streets and roads, or to make similar improvements to the public infrastructures, the Tribal Council shall approve the project funding and the [*Tribal Business Committee*] shall approve the project plans prior to the commencement of construction. The [*Planning and Economic Development Department*] shall serve as the primary staff for the review process, for enforcement, for guidelines, and for offering recommendations to assist in the administration of this review process. A five-member [*Technical Review Committee*], made up of the Planning and Economic Development Department Director, Public Utilities Department Superintendent, Fire Chief, and other tribal government officials will also inform the review process.

Section 4.0 outlines who is responsible for the overall administration and enforcement of the site plan review ordinance. In the current version a “Tribal Business Committee” is designated for being responsible for the administration and enforcement. It is assumed that this Tribal Business Committee is a small committee made up of members of the Tribal Council. This proposed section also designates the Planning and Economic Development Department as the primary staff for the review process, enforcement, guidelines, and recommendations to the Committee. Since this Department is responsible for the development and administration of the Integrated Resource Management Plan (IRMP), which is the tribe’s land use policy document, it is logical for this Department to serve as the responsibility party for the site plan review process also. A Technical Review Committee made up of tribal government officials will ensure that development is designed appropriately in accordance with this ordinance, and ensures the health, safety, and welfare of the tribal community.

5.0 Review Procedures

To assist the [*Tribal Business Committee*] in the review process, those seeking approval of site plans shall follow these review procedures.

5.1 Preapplication Conference

The applicant is strongly encouraged to request a preapplication conference with the [*Technical Review Committee*] prior to beginning the site plan review process. The purpose of the preapplication conference is to:

- (a) Allow the [*Technical Review Committee*] to understand the nature of the proposed use and potential issues involved in the proposal;
- (b) Allow the applicant to understand the site plan review process and required submissions;
- (c) Identify issues that need to be addressed in future submissions; and
- (d) Make the applicant aware of any opportunities for coordinating the development with community policies, programs, or facilities.

The preapplication conference shall be informal and informational in nature. There shall be no fee for a preapplication review, and such review shall not cause the plan to be a pending application or proceeding.

There are no formal submission requirements for the preapplication conference. However, the applicant should be prepared to discuss the following with the [*Technical Review Committee*]:

- (a) The proposed site, including its location, size, and general characteristics;
- (b) The nature of the proposed use and potential development;
- (c) Any issues or questions about existing tribal law or regulations and their applicability to the project; and
- (d) Any request for waivers from the submission requirements.

The *Technical Review Committee* should meet at least once per month at a regularly scheduled day/time (e.g., third Wednesday of the month from 7 – 9 PM) and should be comprised of an odd-numbered member committee of a manageable size (e.g., five-member) including the following with some as alternate members: Planning and Economic Development Department, Public Utilities Department Superintendent, Building Official, Health Agent, Fire Chief, Tribal Law Enforcement / Public Safety, Department of Public Works Superintendent, Culture Department, Department of Natural Resources, and Housing Authority (if applicable).

5.2 Application Submission and Review Procedures

5.2.1 *Number of Copies Submitted*

The applicant must prepare and submit seven (7) hard copies and one (1) electronic version of the site plan review application, including the development plan and supporting documentation and seven (7) full sets of construction documents including seven (7) copies of elevation drawings which meet the submission requirements set forth below. This material must be submitted to the [*Planning and Economic Development Department*]. The [*Planning and Economic Development Department*] will distribute five (5) copies of the site plan and construction drawing to the members of the [*Technical Review Committee*] and one (1) copy to the [*Tribal Business Council*].

5.2.2 *Completeness Review*

Within fourteen (14) days of the receipt of a formal site plan review application, the [*Planning and Economic Development Department*] shall review the material and determine whether or not the submission is complete. If the application is determined to be incomplete, the [*Planning and Economic Development Department*] shall notify the applicant in writing of this finding, shall specify the additional materials required to make the application complete, and shall advise the applicant that the application will not be considered by the [*Planning and Economic Development Department*] until the additional information is submitted to the [*Planning and Economic Development Department*]. These steps shall be repeated until the application is found to be complete.

As soon as the [*Planning and Economic Development Department*] determines that the application is complete, the [*Planning and Economic Development Department*] shall notify the applicant in writing of this finding and place the item on the [*Technical Review Committee*] agenda for review within thirty (30) days of this finding.

5.2.3 *On-site Inspection*

The [Technical Review Committee] may hold an on-site inspection of the site to review existing conditions, field verify the information submitted, and investigate the development proposal. The [Technical Review Committee] may schedule this visit either before or after the first meeting at which the application is considered. The [Technical Review Committee] may decide not to hold an on-site inspection when the site is snow covered. If an application is pending during a period where there is snow cover, the deadline by which the Planning Board shall take final action on the application as specified in Section 5.2.4 may be extended, which extension shall not exceed thirty (30) days after the [Technical Review Committee] is able to conduct an on-site inspection.

5.2.4 *Final Recommendation by Technical Review Committee*

The [Technical Review Committee] shall make a final recommendation on said application within thirty (30) days of the finding of application completeness. The [Technical Review Committee] shall recommend that the [Tribal Business Committee] either deny the application, approve the application, or approve the application with conditions. The [Technical Review Committee] may suggest such conditions as are deemed advisable to assure compliance with the standards of approval.

5.2.5 *Final Decision by Tribal Business Committee*

The [Tribal Business Committee] shall take final action on said application within fourteen (14) days of receipt of the [Technical Review Committee] final recommendation. The [Tribal Business Committee] shall act to deny, approve, or approve the application with conditions. The [Tribal Business Committee] may impose such conditions as are deemed advisable to assure compliance with the standards of approval.

In issuing its decision, the [Tribal Business Committee] shall make written findings of fact establishing that the proposed development does or does not meet the standards of approval and other requirements of the tribe. The [Tribal Business Committee] shall notify the applicant and the [Technical Review Committee], including the findings of fact and any conditions of approval. This requirement can be met through the distribution of minutes of the meeting containing the findings of fact and decision of the [Tribal Business Committee].

5.2.6 *Mutual Extensions*

All time limits provided for in Sections 5.2.1 through 5.2.5 above may be extended by mutual agreement among the applicant, the [Technical Review Committee], and the [Tribal Business Committee].

5.3 Final Approval and Filing

Upon completion of the requirements of this Section and an approval vote by the majority of the [Tribal Business Committee], the applicant shall be deemed to have final approval and the site plan shall be signed by a majority of the members of the [Tribal Business Committee] and must be filed with the [Planning and Economic Development Department]. Any plan not so filed within thirty (30) days of the date upon which such plan is approved and signed by the [Tribal

Business Committee] shall become null and void. The [*Tribal Business Committee*], by vote, may extend the filing period for good cause.

5.4 Fees

5.4.1 *Application Fee*

An application for site plan review must be accompanied by an application fee. This fee is intended to cover the cost of the tribe's administrative processing of the application. The fee shall not be refundable. This application must be paid to the tribe and evidence of payment of the fee must be included with the application.

5.4.2 *Establishment of Fees*

The tribe may, from time to time and after consultation with the [*Technical Review Committee*], establish the appropriate application fees and technical review fees following posting of the proposed schedule of fees.

The fee schedule should be developed to cover the administration and enforcement of this ordinance. Many tribes and other communities have developed graduated fee schedules based upon the size of the development. For example, the application fee may be \$300 for the construction of a commercial building under 500 square feet; whereas it may be \$2,500 for the construction of a commercial building over 5,000 square feet.

6.0 Submission Requirements

An application for site plan review shall be submitted to the [*Planning and Economic Development Department*]. The detailed site plan presented for consideration shall contain all information required in this ordinance. Each submission for site plan review shall be accompanied by an application and site plan in the quantities specified in subsection 5.2.1.

6.1 Application Requirements

The application shall at a minimum, include the following information:

- 1) The applicant's name, address, and phone number in full.
- 2) Proof of property ownership, and whether there are any options on the property, or any liens against it.
- 3) A signed statement that the applicant is the owner of the property or officially acting on the owner's behalf.
- 4) The name and address of the owner(s) of record if the applicant is not the owner of record (or firm or corporation having a legal or equitable interest in the land), and the signature of the owner(s).
- 5) The address and or parcel number of the property.
- 6) Name and address of the developer (if different from the applicant).
- 7) Name and address of the engineer, architect and/or land surveyor.
- 8) Project title.
- 9) Project description, including the total number of structures, units, bedrooms, offices, square feet, total and usable floor area, parking spaces, carports or garages, employees by shift, amount of recreation and open space, type of recreation facilities, and related information as pertinent or otherwise required by the statute.

- 10) A vicinity map drawn at a scale of one (1) inch = two-thousand (2,000) feet with north arrow.
- 11) The gross and net acreage of all parcels in the project.
- 12) Zoning and land use classification(s), including whether the property is within a “restricted area,” “urban area,” “Off Limit Area” or “housing shortlist area” as designated in the Spokane Tribe Integrated Resource Management Plan (IRMP).
- 13) Project completion schedule/development phases.
- 14) Evidence of the applicant’s technical and financial capability to carry out the project as proposed.
- 15) Written statements relative to project impacts on existing infrastructure (including traffic capacity of streets, schools, and existing utilities) and on the natural environment of the site and adjoining lands (if formal impact statements are required, they would be stated here, or referenced).

6.2 Site Plan Requirements

The site plan shall consist of an accurate, reproducible drawing at a scale of one (1) inch = one hundred (100) feet or less, showing the site and all land within one hundred fifty (150) feet of the site. If multiple sheets are used, each shall be labeled and the preparer identified. Each site plan shall depict the following:

- 1) Location of proposed and/or existing property lines, dimensions, legal descriptions, setback lines and monument locations.
- 2) Existing topographic elevations at two (2) foot intervals, proposed grades and direction of drainage flows.
- 3) The location and type of existing soils on the site and any certifications of borings.
- 4) Location and type of significant existing vegetation.
- 5) Location and elevations of existing water courses and water bodies, including man-made surface drainage ways, floodplains and wetlands.
- 6) Location of existing and proposed buildings and intended uses thereof, as well as the length, width, and height of each building and typical elevation views of proposed structures.
- 7) Proposed location of accessory structures, buildings and uses, including, but not limited to, all flagpoles, light poles, bulkheads, docks, storage sheds, transformers, air conditioners, generators and similar equipment, and the method of screening where applicable.
- 8) Location of existing public roads, rights-of-way and private easements of record and abutting streets.
- 9) Location of and dimensions of proposed streets, drives, curb cuts, and access easements, as well as acceleration, deceleration and passing lanes (if any) serving the development. Details of entryway and sign locations should be separately depicted with an elevation view.
- 10) Location, design, and dimensions of existing and/or proposed curbing, barrier free access, carports, parking areas (including indication of all spaces and method of surfacing), fire lanes and all lighting thereof.
- 11) Location, size, and characteristics of all loading and unloading areas.

- 12) Location and design of all sidewalks, walkways, bicycle paths and areas for public use.
- 13) Location of water supply lines and/or wells, including fire hydrants and shut off valves, and the location and design of storm sewers, retention or detention ponds, waste water lines, clean-out locations, connection points and treatment systems, including septic systems if applicable.
- 14) Location of all other utilities on the site including but not limited to natural gas, electric, cable television and telephone.
- 15) Proposed location, dimensions and details of common open spaces and common facilities such as community buildings or swimming pools if applicable.
- 16) Location, size and specifications of all signs and advertising features with cross-sections.
- 17) Exterior lighting locations with area of illumination illustrated as well as the type of fixtures and shielding to be used.
- 18) Location and specifications for all fences, walls and other screening features with cross- sections.
- 19) Location and specifications for all proposed perimeter and internal landscaping and other buffering features. For each new landscape material the proposed size at the time of planting must be indicated. All vegetation to be retained on the site must also be indicated, as well as its typical size by general location or range of sizes as appropriate.
- 20) Location, size and specifications for screening of all trash receptacles and other solid waste disposal facilities.
- 21) Location and specifications for any existing or proposed above or below ground storage facilities for any chemicals, salts, flammable materials, or hazardous materials as well as any containment structures or clear zones required by government authorities.
- 22) Identification of any significant site amenities or unique natural features.
- 23) Identification of any significant views onto or from the site to or from adjoining areas.
- 24) North arrow, scale and date of original submission and last revision,
- 25) Seal of the registered engineer, architect, landscape architect, surveyor, or planner who prepared the plan.

The above list is a comprehensive list of requirements. The Spokane Tribe may reduce these requirements to better suit the needs of the Technical Review Committee.

7.0 Approval Standards and Criteria

The following criteria shall be used by the [*Technical Review Committee*] in reviewing applications for site plan review and shall serve as minimum requirements for approval of the application. The application shall be approved unless the [*Technical Review Committee*] determines that the applicant has failed to meet one or more of these standards. In all instances, the burden of proof shall be on the applicant who must produce evidence sufficient to warrant a finding that all applicable criteria have been met.

The criteria below are limited to those related to water supply and sewage disposal. The tribe may wish to also add approval standards and criteria, such as those related to site characteristics, adequacy of the road system, access, circulation, parking, stormwater management, erosion control, and cultural resources protection.

7.1 Water Supply

The development must be provided with a system of water supply that provides each use with an adequate supply of water. If the project is to be served by a public water supply, the applicant must secure and submit a written statement from the supplier that the proposed water supply system conforms with its design and construction standards, will not result in an undue burden on the source or distribution system, and will be installed in a manner adequate to provide needed domestic and fire protection flows.

7.2 Sewage Disposal

The development must be provided with a method of disposing of sewage in compliance with all applicable federal, state, local, and/or tribal plumbing codes.

- (a) All sanitary sewage from new or expanded uses must be discharged into a public sewage collection and treatment system when such facilities are currently available or can reasonably be made available at the lot line and have adequate capacity to handle the projected waste generation.
- (b) If the public collection system is not at the lot line, but can be extended in the public right-of-way, the collection system must be extended by the owner and the new or expanded use connected to the public system. Such extension shall be required if the public system is within one hundred (100) feet of a new use with a design sewage flow of less than five hundred (500) gallons per day or within three hundred (300) feet of a new use with a design sewage flow of five hundred (500) or more gallons per day and the system has adequate capacity to accommodate the additional flow. The *[Technical Review Committee]* may waive this requirement if the use is already served by a properly functioning subsurface disposal system that is properly sized for the projected flows, provided that connection to the public system will occur if and when the subsurface system needs to be replaced.
- (c) If the public system cannot serve or be extended to serve a new or expanded use, the sewage must be disposed of by an on-site sewage disposal system meeting the requirements of all applicable federal, state, local and/or tribal on-site disposal rules.
- (d) Industrial or commercial wastewater may be discharged to public sewers in such quantities and/or of such quality as to be compatible with sewage treatment operations. Such wastes may require pretreatment at the industrial or commercial site in order to render them amenable to public treatment processes. Pretreatment includes, but is not limited to, screening, grinding, sedimentation, pH adjustment, surface skimming, chemical oxidation and reduction and dilution. The pretreatment standards shall be determined by the *[Public Utilities Department]*.

7.3 Groundwater Protection

The proposed site development and use must not adversely impact either the quality or quantity of groundwater available to abutting properties or to public water supply systems. Applicants whose projects involve on-site water supply or sewage disposal systems with a capacity of two thousand (2,000) gallons per day or greater must demonstrate that the groundwater at the property line will comply, following development, with all applicable federal, state, local, and/or tribal standards for safe drinking water.

7.4 Water Quality Protection

All aspects of the project must be designed so that:

- (a) No person shall locate, store, discharge, or permit the discharge of any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, obnoxiousness, toxicity, or temperature that may run off, seep, percolate, or wash into surface or groundwaters so as to contaminate, pollute, or harm such waters or cause nuisances, such as objectionable shore deposits, floating or submerged debris, oil or scum, color, odor, taste, or unsightliness or be harmful to human, animal, plant, or aquatic life.
- (b) All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials, must meet all applicable federal, state, local, and/or tribal standards.

8.0 Post-Approval Activities

8.1 Limitation of Approval

Substantial construction of the improvements covered by any site plan approval must be commenced within twelve (12) months of the date upon which the approval was granted. If construction has not been substantially commenced and substantially completed within the specified period, the approval shall be null and void. The applicant may request an extension of the approval deadline prior to the expiration of the period. Such request must be in writing and must be made to the [*Tribal Business Committee*]. The [*Tribal Business Committee*] may grant up to two (2) six (6) month extensions to the periods if the approved plan conforms to the ordinances in effect at the time the extension is granted and any and all federal and state approvals and permits are current.

8.2 Incorporation of Approved Plan

One copy of the approved site plan must be included with the application for the building permit (where applicable) for the project and all construction activities must conform to the approved plan, including any conditions of approval and minor changes approved by the [*Technical Review Committee*] to address field conditions.

8.3 Recording of the Approved Plan

One copy of the approved site plan must be recorded with the [*Planning and Economic Development Department*] within thirty (30) days of approval.

8.4 Submission of As-Built Plans

Any project involving the construction of more than twenty thousand (20,000) square feet of gross floor area or fifty thousand (50,000) square feet of impervious surface, must provide the

[*Technical Review Committee*] with a set of construction plans showing the building(s) and site improvements as actually constructed on the site. These "as-built" plans must be submitted within thirty (30) days of the issuance of a certificate of occupancy for the project or occupancy of the building.

8.5 Minor Changes to Approved Plans

Minor changes in approved plans necessary to address field conditions may be approved by the [*Technical Review Committee*] provided that any such change does not affect compliance with the standards or alter the essential nature of the proposal. Any such change must be endorsed in writing on the approved plan by the [*Technical Review Committee*].

8.6 Amendments to Approved Plans

Approvals of site plans are dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from the plans, proposals, and supporting documents, except minor changes that do not affect approval standards, is subject to review and approval.

9.0 **Appeal of Tribal Business Committee Actions**

Appeal of any actions taken by the [*Tribal Business Committee*] with respect to this section shall be to the [*Tribal Council or other named appeals board*] in accordance with [*INSERT reference to Spokane Tribe rules related to appealing land use decisions*].

10.0 **Amendments to the Ordinance**

Amendments of this ordinance may be initiated by the [*Tribal Council*], [*Tribal Business Committee*], [*Planning and Economic Development Department*] or the [*Technical Review Committee*].

No proposed amendments to this ordinance shall be referred to the [*Tribal Council*] until all public notification requirements in accordance with [*INSERT reference to Spokane Tribe rules related to public notification procedures*] have been met.

The proposed amendments shall be adopted by a simple majority vote of the [*Tribal Council*].

11.0 **Severability**

The invalidity of any section or provision of this ordinance shall not be held to invalidate any other section or provision of this ordinance.

Appendix F

How much Do You Really Pay for Public Water?

\$20 per month = 0.4¢ per gallon

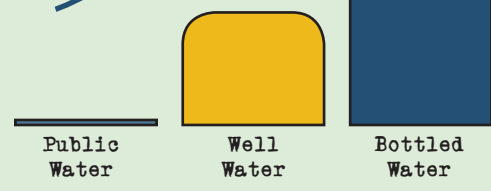
private well = 6¢ per gallon

bottled water = up to \$8 per gallon



Wellpinit water is tested regularly for contaminants! Other sources may not be tested.

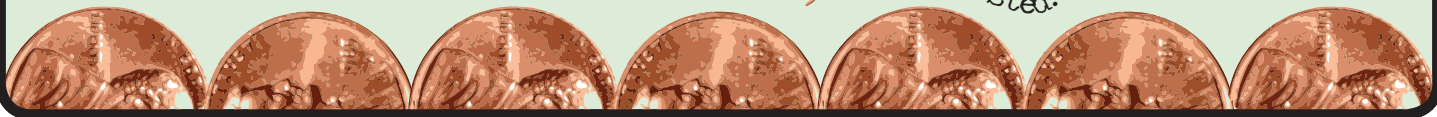
Cost Comparison



Compare this to other expenses

\$50 per month = Satellite TV

You can live without TV, but can you live without water?



Appendix G

Appendix G. Resources

For more information about long-term planning for sustainable water and wastewater infrastructure, please visit the following websites.

- EPA. Water Infrastructure-Moving Toward Sustainability. <http://water.epa.gov/infrastructure/sustain>.
- EPA. Infrastructure Task Force-Infrastructure Sustainability Summary of Commonalities and Best Practices from Tribal Utility Interviews (January 20, 2012) www.epa.gov/tp/pdf/itf-commonalities-12.pdf.
- RCAP. Practical solutions for improving rural communities. www.rcap.org.
- RCAP. U.S. Infrastructure Finance Needs for Water and Wastewater. www.rcap.org/sites/default/files/rcap-files/Infrastructure%20Finance.pdf.
- State of Washington – Dept. of Ecology. *Criteria for Sewage Works Design (Orange Book)*. Publication # 98-37 WQ. August 2008. <https://fortress.wa.gov/ecy/publications/summarypages/9837.html>.

Appendix H

Appendix H. Project Team

Project Team Contacts

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Smart Growth

IMPLEMENTATION
ASSISTANCE