

Opportunities For Input

In addition to the open house and workshop identified in this newsletter, the Longview City Council invites you to share information or ask questions about this project by contacting city staff or a Council member. You may contact city staff as noted below, or you may email a Council member by logging onto the City Council web page at www.mylongview.com/government/CityCouncil.htm, or by using one of the email addresses listed below. You may also call a Council member at home; their phone numbers are listed in the local phone books.

Your 2010 Longview City Council



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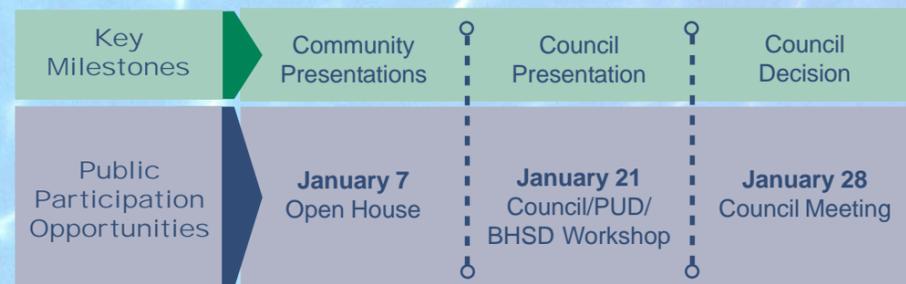
Questions?

If you have concerns or questions regarding this project, or would like additional information, please contact Project Manager Amy Blain at 360.442.5206, amy.blain@ci.longview.wa.us, or visit our website at www.mylongview.com.

Opportunities for Discussion and Input

If you would like to learn more and discuss your concerns and questions with our technical experts and City staff, you are invited to participate at the following events:

- Water Supply Open House
January 7 from noon to 8 p.m.
Cowlitz PUD Auditorium, 961 12th Avenue
- Joint City Council/Cowlitz PUD/Beacon Hill Sewer District Workshop
January 21 at 7 p.m.
Cowlitz PUD Auditorium, 961 12th Avenue



City Info

A NEWSLETTER FOR LONGVIEW CITIZENS

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New Water Supply Analysis Nearly Complete

In 2005, the City of Longview, Cowlitz PUD, and City of Kelso completed an update of the comprehensive Water System Plan for our area. The Water System Plan determined that the existing treatment plant, which provides drinking water to City of Longview and Cowlitz PUD/Beacon Hill Sewer District customers, needs to be expanded to meet a growing demand for water, and that much of the plant has reached the end of its useful life and needs to be rebuilt. At that time we also realized the sediment buildup in the Cowlitz River from the Mt. St. Helens eruption was getting increasingly worse, creating a significant threat to our water supply.

In 2006, the City and Cowlitz PUD hired PACE Engineering to evaluate and recommend solutions to the various issues affecting our water supply, and PACE's Source Study recommended developing a groundwater supply and abandoning our existing water supply. In June of 2008, the city council concurred with the PACE recommendation and directed city staff to begin implementation of the groundwater supply recommendation. In March of 2009, after using a competitive selection process, the City and Cowlitz PUD hired Kennedy/Jenks Consultants to complete a more extensive analysis of the groundwater supply and design the new facilities.



This information provided by:

Making the right choice

Determining the best solutions to address the treatment plant deficiencies has taken substantial time because the issues are complex, there have been many potential solutions to evaluate, and all options are expensive. After PACE recommended the groundwater supply solution, many people in our community expressed they are very skeptical of a groundwater supply, especially a supply drawing water from beneath a developing industrial park and near the Weyerhaeuser mill and previous aluminum mill. To address community concerns about the proposed groundwater supply and be the best possible stewards of our community's resources, we have thoroughly evaluated all feasible options.

To ensure we were making the best decision, during the 2006 Source Study effort, we retained a number of third party experts to review the PACE recommendations. These experts reviewed cost and constructability estimates for the two economically feasible options: a new groundwater supply or rebuilding the existing treatment plant. They also reviewed water quality and treatment pilot testing results, reviewed hydrogeological information regarding the characteristics of the groundwater aquifer and its ability to produce large volumes of water, and conducted an environmental assessment looking for existing and potential sources of contamination.

To continue addressing community concerns, the first task for Kennedy/Jenks Consultants was to perform a more extensive feasibility analysis to confirm the proposed groundwater supply is capable of producing large volumes of high quality water, ensuring a safe and reliable source of drinking water.

Making a decision such as this doesn't come often during the life of a community – many city councils come and go without having to face a monumental decision like this. In searching for a safe and cost-effective solution, the community can be assured that we're considering both short-term and long-term impacts. We only have one opportunity to "get it right" in making this decision about a critical facility that will serve our community's residents for decades and generations to come. As the Kennedy/Jenks feasibility analysis nears completion, all of the testing and analysis indicates that the best and most cost-effective solution is development of the groundwater supply at the Mint Farm.

An Aging Facility

The treatment plant was constructed in 1946 and is rapidly deteriorating. We experience frequent equipment and structural failures, including pump failures, filter failures, and significant cracking and spalling in the concrete floors and walls of the treatment basins. Even with proper operation, regular maintenance, and repair and replacement of worn or failed equipment, the facility has reached the end of its useful life and needs to be replaced or substantially rebuilt.

Sediment in the Cowlitz River

Sediment in the Cowlitz River has increased dramatically in the last few years. The sediment threatens to block our intake when water levels are low in the summer and damages equipment and fills the treatment basins when the river is higher in the winter and spring. Initial projections by the U.S. Army Corps. of Engineers of the amount of sediment washing down the river and raising the river bottom have proven to be grossly underestimated. In 2002, the Corps. of Engineers estimated that the river bottom at the treatment plant intake would rise by nine feet by 2034. By 2008, sediment had already overtopped an 8-foot sediment dam the City recently built on the front of the intake. The Corps of Engineers is continuing to study the river and has indicated that any efforts to mitigate the effects of the sediment will take many years and millions of dollars before they can be completed.



Doesn't the City have to obtain water rights before it can use the groundwater?

Yes. The City applied to the state Department of Ecology for enough water rights to meet our projected 50-year municipal water demand, and we are paying the Department of Ecology to expedite processing of our application. The Department of Ecology and their technical consultant are reviewing the hydraulic test data and analysis prepared by Kennedy/Jenks. Early indications are that because there is an abundant supply of water available from the aquifer, the Department of Ecology technical consultant will recommend issuing the requested water right. Following receipt of their consultant's recommendation, the Department of Ecology will finish processing the application and the City should receive its water right in late spring or early summer of 2010.

When will the new water plant be finished?

In late January 2010, the City Council will decide whether or not to continue developing a new groundwater supply at the Mint Farm, and how quickly to proceed with the project. If approved, final design of the treatment plant will take about 12 months to complete. Construction of the groundwater wells could begin within five months and be completed while design of the treatment plant is still underway. Construction of the new plant will require about 18 months to complete. The total time required for design and construction is estimated to be about 2½ years.

If the City Council decides to rebuild the existing treatment plant, that project is estimated to take about nine years to complete. Because the existing plant must remain operating at full capacity throughout construction to meet our customer's demand for water, the design process is much more complex and time-consuming. Additional capacity must be built before the existing facilities can be removed from service for rebuilding, and all work must be phased to keep the plant fully operational during construction.

How will the project be funded?

Total project cost for the new groundwater wells and treatment plant, including design and construction, is currently estimated at \$38.7 million. Total project cost for rebuilding the existing treatment plant and intake is estimated at \$52.6 million. As part owner of the treatment plant, the Cowlitz PUD and its water customers will pay for their 14% share of the project costs. For Longview customers, regardless which option is chosen, water rates must be increased significantly in order to pay for the project.

In an effort to minimize the rate impacts, we have applied for grants and low interest loans through various funding agencies. We have been successful in obtaining \$956,000 in grants and \$9 million in low interest loans; however, many other communities are struggling to pay for the costs of their facilities and the competition for grants and loans is fierce. We will continue to pursue other funding, but most of the project will be financed through utility revenue bonds – loans from investors that must be re-paid.

Learn more about the water supply project

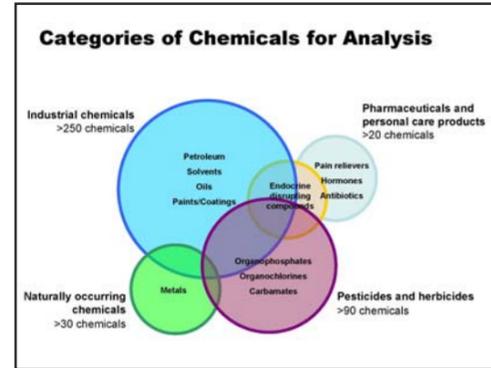
Information in this newsletter is being provided to help explain the water supply project and the findings of our groundwater analysis. An opportunity for you to learn more about this project and talk with our experts is being provided through an Open House on January 7 being held at the Cowlitz County PUD auditorium. Following the open house, there will be a joint workshop on January 21 where the final analysis information will be presented to the City Council, Cowlitz PUD, and Beacon Hill Sewer District council and board members, and they will review and discuss the analysis and decide how to move forward with the project. We encourage you to stay abreast of the process and to participate as much as you can in these discussions as we move towards a final decision.

More information and many of the final reports for this project may be found by visiting our website at www.mylongview.com.

Additional reports with the findings from our groundwater analysis will be posted on our website as soon as they are final.



constituents detected above their screening level and concluded that the groundwater, with appropriate treatment, would meet all state and federal water quality regulations as a safe source of drinking water.



Naturally occurring iron, manganese, and arsenic continue to be detected at moderately low levels in the deep aquifer, and although we are not required by drinking water regulations to treat at the levels detected, we plan to treat to remove all three minerals and ensure we provide high quality drinking water to our community.

In all of these tests, the only contaminant found at a level of concern is arsenic. At the concentration of arsenic found in the groundwater, drinking water regulations only require us to notify our customers that arsenic exists above the specified reporting level. Our pilot testing of treatment methods indicates the water can easily be treated to remove arsenic to well below the drinking water standard, and we plan to treat to remove arsenic from the water. Drinking water regulations also do not require treatment for iron and manganese because they are not a health concern; however, they do cause objectionable aesthetic issues like taste, odor, color and a tendency to stain. Many people take vitamin and mineral supplements containing iron and manganese, and when ingested in small

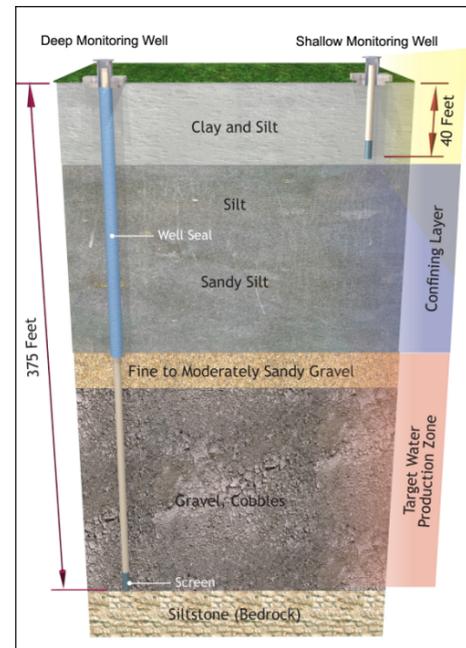
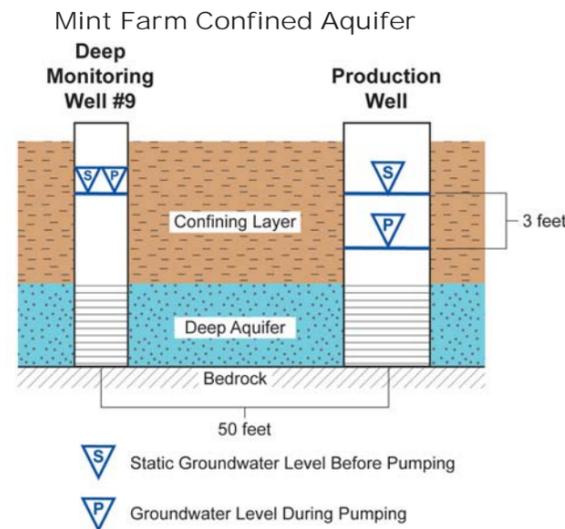
How do we know the groundwater won't become contaminated?

As part of our analysis, we've constructed 17 monitoring wells in and around the Mint Farm, and a large, production sized test well at our proposed treatment plant location. Soil samples collected while drilling the wells confirm there is a confining layer very resistant to water seepage, and that confining layer protects the deep aquifer from potential contamination at the surface. In addition, the deep aquifer is under pressure, which prevents potential shallow contamination from migrating into the deep aquifer. The production test well was pumped at 5.5 million gallons per day continuously for 36 days and the pressure in the aquifer dropped only the equivalent of 3-feet (less than 2 psi), confirming that the aquifer will remain under pressure and fully saturated after our plant begins full operation. We collected water samples before, during, and after test pumping, looking for migration of potential contaminants, and found the water quality improved slightly during the pump testing.

In addition, the network of monitoring wells constructed around the perimeter of the proposed well field will become a critical part of a Well Head Protection Program and will be regularly monitored for water quality.

concentrations, both can actually provide a health benefit. Due to the objectionable aesthetic concerns, a new groundwater supply will also treat to remove iron and manganese from our drinking water.

Monitoring wells were installed in pairs to collect water quality at varied depths and evaluate the hydraulic connection (or absence of one) between the shallow groundwater and deep aquifer.



The frozen seepage in these photos highlights the extremely deteriorated condition of the concrete basins, and these freezing conditions have accelerated the deterioration. (December 2009)

Meeting water use demands

The existing treatment plant cannot meet current demand at times during the year. Increased sediment in the winter and spring reduces the treatment capacity of the plant below daily demand, and high water use during the summer regularly exceeds plant capacity. For the next few years, our water storage reservoirs will allow us to meet customers' needs, but additional capacity is necessary to allow growth in our community.

Issues at a Glance:

- Reliability of an aging facility
- Increased sediment in the Cowlitz River
- Long-term supply and demand
- Intake structure deficiencies

Intake structure deficiencies

To ensure a reliable supply of water throughout the year, we must dredge in front of the plant intake several times each year to maintain a sump and prevent huge volumes of sediment from flowing into the intake structure. However, our dredging permits require that we abandon the intake structure or begin the process to upgrade the intake to meet current fish code requirements before the permits expire in September 2012. The hole size in the screening is too large to prevent recently hatched fish from being entrained and the structure lacks a fish return to divert fish back out to the river. We already experience screen failures caused by the accumulation of sediment, and the smaller holes required by fish regulations will cause the sediment to build up much more quickly.



Solutions at a Glance:

- Option 1: Rebuild existing plant and intake on the Cowlitz River
 - \$52.6 Million
 - 9 Years to complete
- Option 2: Build a new facility with groundwater wells at the Mint Farm Industrial Park
 - \$38.7 Million
 - 2½ Years to complete

Option No. 1: Rebuild Existing Treatment Plant

Can we rebuild the existing water treatment plant? Compared to the groundwater supply option, it is substantially more expensive to reconstruct the existing plant because the existing plant is more complex and must remain fully operational throughout construction. This option is estimated to cost \$52.6 million and require at least three phases of construction to keep the plant running and meet our customers' demand, an undertaking which will take approximately nine years to complete. And there is significant risk in reconstructing the plant since we know river sediment will continue to be a problem for many years.

Why not move the intake structure?

Sediment moving down the Toutle River affects everything downstream. Relocating the intake to a nearby section of the Cowlitz River that appears wider or deeper, or to a bend in the river that seems to stay scoured out, does not provide assurance that sediment won't continue to be a significant problem. The main channel in the river at the existing intake continually changes location in the river due to sediment deposits. River training structures have been suggested to improve river flow and keep the sediment moving downstream past the intake, but such structures would require extensive modeling and there is disagreement amongst river experts about whether or not they would work.

We have also evaluated the cost to relocate the intake upstream of the Toutle River or to the Columbia River, and together with rehabilitating the treatment plant, the cost of those options is prohibitive. And permitting a new intake with state and federal agencies would be a long and expensive process, further complicated by the potential for Pacific Smelt to be added to the list of Endangered Species, a list that already includes salmon and steelhead fish.



Option No. 2: Construct New Treatment Plant at Mint Farm Industrial Park

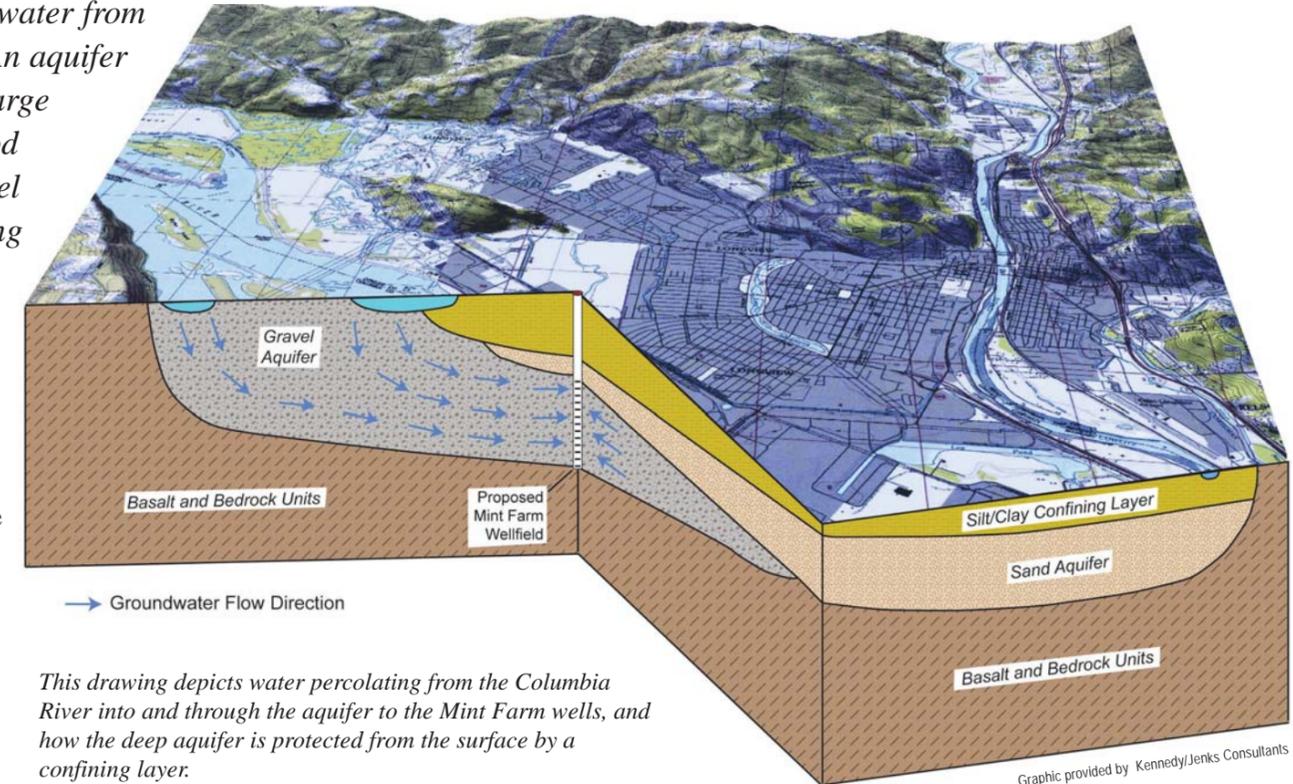
Is groundwater from the Mint Farm really a good idea?

This option proposes to withdraw and treat groundwater from a deep aquifer at the Mint Farm Industrial Park. An aquifer is an underground geologic formation that yields large amounts of water when pumped from a well. A good aquifer has a thick layer of clean cobbles and gravel material to store and transmit water, and a confining layer of material that resists the downward flow of water. From prior studies and projects at the Mint Farm, City staff knew that a very productive aquifer exists underneath the Mint Farm capable of producing large amounts of high quality water.

A benefit to developing a groundwater supply is that surface water sources such as the Cowlitz River continue to be subject to increasingly tighter testing and treatment requirements due to the health risks from potential contaminants found in surface water sources, such as cryptosporidium. These increasing regulations require more complex testing and treatment and continue to drive up the cost to provide safe drinking water.

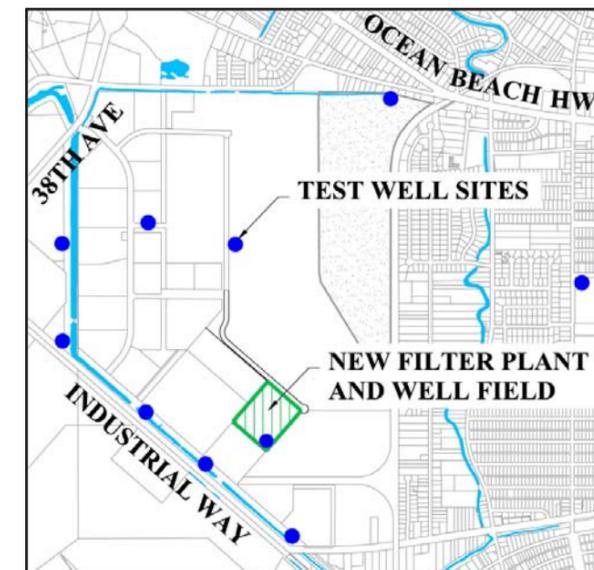
Where does the water come from?

The aquifer proposed for use as our municipal supply is a deep aquifer beneath the Mint Farm, rather than the shallow groundwater people may think of when they look at the drainage ditches in our area. Based on our testing and hydraulic modeling, the deep aquifer has a strong hydraulic connection to the Columbia River. Water samples were analyzed to compare the deep aquifer to various potential recharge sources such as the Columbia River, the Cowlitz River, and shallow groundwater. Using water chemistry indicators, our analysis shows the aquifer is recharged by water percolating from the bottom of the Columbia River through thousands of feet of sand and gravel layers. This connection to the Columbia River provides a near endless supply of water that is naturally filtered as it travels through the sand and gravel layers to reach the aquifer zone beneath the Mint Farm.



This drawing depicts water percolating from the Columbia River into and through the aquifer to the Mint Farm wells, and how the deep aquifer is protected from the surface by a confining layer.

Graphic provided by Kennedy/Jenks Consultants



Proposed Water Supply Location

Is the groundwater safe to drink?

Yes!

More than 14,500 soil and water quality tests have been performed to identify potential contaminants in the groundwater. In addition to testing for contaminants which are regulated by the state for drinking water, we also tested for non-regulated contaminants, emerging contaminants (pharmaceuticals and personal care products) that may be of concern in the future, and chemical compounds specific to local industry. In addition, Kennedy/Jenks performed a human health risk assessment for any

-more-