# Longview Water Supply Alternatives

From an initial list of more than 50 options, the Customer Advisory Committee (CAC) selected the most promising alternatives based on the key values of **customer perception**; **technical feasibility and long-term viability**; and **cost to rate payers**. The alternatives have been grouped into 14 clusters to make them easier to compare.

The table on the reverse lists the clusters and how they compare against the three key values. The two clusters that are currently preferred by the CAC are indicated in the table.

## Cost Estimations

Costs provided in the table are rough estimates. While it is difficult to estimate costs at these very preliminary stages, these estimates are intended to allow for comparison among the various options. Cost ranges represent the variations among specific options within each cluster.

## Information About the Options

**Groundwater (well) source** – Groundwater comes from underground aquifers tapped by wells. Groundwater is generally safer than surface water and requires less treatment but often has higher levels of dissolved minerals, silica and hardness, which cause many of the current complaints about taste, smell, color and spotting with Longview's drinking water. The public has also expressed concern regarding the proximity of the Mint Farm wells to former and current industrial sites.

- Several options to modify the Mint Farm wells and treatment process have been considered, each of which would address concerns differently (see reverse).
- Switching to a new groundwater source at a different location has also been considered, but requires more study to determine if the new water quality would be better than existing.

**Surface water source** – Surface water would be drawn directly from one of the region's rivers, such as the Cowlitz, Columbia or Kalama. These options generally have lower levels of minerals, silica and hardness, but can present technical challenges, such as high levels of silt, more expensive treatment, and environmental permitting requirements.

- It is assumed these options would address taste, odor, color, spotting, purity and general health concerns because surface water generally has lower levels of minerals, silica and hardness.

*Example of a surface water intake structure*

**Ranney collector well** – A Ranney collector is a well used to extract water from an aquifer with connection to a surface water source, such as a river. The purpose of a Ranney collector would be to obtain water quality similar to surface water, but without the regulations and technical difficulties associated with directly withdrawing water from the river.

- It is assumed these options would provide water quality similar to surface water and would address concerns related to taste, odor, color, spotting, purity and general health.

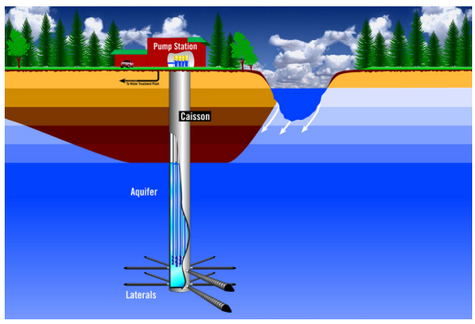


*Diagram of a Ranney collector well*

**Aquifer Storage and Recovery (ASR)** – ASR is the injection of potable water into an aquifer for later recovery and use (for example, surface water may be injected into an aquifer during the winter and withdrawn during the summer in periods high demand). The purpose of this option would be to obtain surface water quality but avoid complications such as regulations affecting when surface water can be withdrawn from the river.

- These options would likely improve issues related to taste, smell, color and spotting; however, this option may not fully address water quality concerns because ASR water would be stored in the aquifers currently in use and may absorb some of the minerals.

**Blending** – Blending options would involve mixing water from a new water source with groundwater from the Mint Farm wellfield. These options would improve water quality at a lower cost to rate payers compared to completely replacing the Mint Farm wellfield source.

- These options would likely improve issues related to taste, smell, color and spotting; however, these options may not fully address water quality concerns because the current groundwater would continue to be used.

| Water Supply Option Cluster | Customer Perception (spotting, taste, smell, color, purity & general health concerns) | Technical Feasibility and Long-term Viability | Approx. Additional Cost to Rate Payers |
|---|---|---|---|
| **Mint Farm Well Source** | | | |
| Status Quo – No Additional Treatment / Optimize Existing Treatment Process | Would not address concerns related to spotting, taste, smell, purity or general health. | Meets long-term capacity, reliability, permitting and operating requirements. | No additional increase in rates; however, there are indirect costs to customers. |
| Modify Existing Treatment Processes | Some treatment technologies could address spotting, purity, taste, color, and odor issues; however, it's unclear whether this option would address health concerns. | Most technologies would meet the capacity, reliability, permitting and operating requirements. Complete within 3 years. | $1 to $25 per month increase |
| Modify Distribution System | May improve taste, color, and odor issues. Would not address concerns related to spotting (from silica), purity, or general health. | Meets long-term capacity, reliability, permitting and operating requirements. Treatment modifications could be completed within 3 years; distribution system replacement would be phased over 20 years. | $1 to $70 per month increase |
| **Cowlitz River Source** | | | |
| ▶ Surface Water Source ***CAC Preferred Option*** | Addresses concerns related to taste, odor, color, spotting, purity and general health. | Meets long-term capacity, reliability and operating requirements. Permitting will be difficult. Approximately 5 years to complete. | $15 to $47 per month increase |
| ▶ Ranney Collector ***CAC Preferred Option*** | Addresses concerns related to taste, odor, color, spotting, purity and general health. | More analysis is needed to determine if this would meet long-term capacity and reliability requirements. Up to 3 years to complete. | $10 to $24 per month increase |
| Aquifer Storage and Recovery (ASR) | Would improve issues related to taste, odor, color, and spotting. Would not address purity and general health concerns because ASR water would be stored in the aquifers currently in use. | More analysis is needed to determine if this would meet long-term capacity and reliability requirements. Permitting a surface withdrawal will be difficult. Up to 5 years to complete. | $8 to $15 per month increase |
| Blending Surface or Ranney Collector Water with Groundwater | Would improve issues related to taste, odor, color, and spotting. Would not address purity and general health concerns related to current groundwater. | More analysis is needed to determine if this option would meet long-term capacity and reliability requirements. Permitting will be difficult. Up to 5 years to complete. | $21 per month increase |
| **Columbia River Source** | | | |
| New Surface Water Source | Addresses concerns related to taste, odor, color and spotting. Members of the CAC have expressed concern regarding purity and general health issues. | Meets long-term capacity, reliability and operating requirements. Permitting will be difficult. Approximately 5 years to complete. | $15 to $37 per month increase |
| Ranney Collector | Addresses concerns related to taste, odor, color, and spotting. CAC members have expressed concern regarding purity and general health issues. | More analysis is needed to determine if this option would meet long-term capacity and reliability requirements. Up to 3 years to complete. | $10 to $27 per month increase |
| Aquifer Storage and Recovery (ASR) | Would improve issues related to taste, odor, color, and spotting. Would not address general health concerns because ASR water would be stored in the aquifers currently in use and because CAC members have expressed concern regarding purity and general health issues. | More analysis is needed to determine if this option would meet long-term capacity and reliability requirements. Permitting surface withdrawal will be difficult. Up to 5 years to complete. | $8 to $24 per month increase |
| Blending Surface or Ranney Collector Water with Groundwater | Would improve issues related to taste, odor, color, and spotting. Would not address purity and general health concerns related to current groundwater. CAC members have expressed concern regarding purity and general health issues. | More analysis is needed to determine if this option would meet long-term capacity and reliability requirements. Permitting will be difficult. Up to 5 years to complete. | $20 per month increase |
| **Other Sources** | | | |
| New Wellfield Source – Other Groundwater Sources | More analysis is needed to determine whether this option would address concerns related to spotting, taste, smell, purity or general health concerns. | More analysis is needed to know whether this would be technically viable and to determine the time required to complete. | $7 per month increase |
| New Surface Water Source – New Upland Water Source with Surface Dam and Treatment / Convey Surface Water to Treatment Plant in Open Channel | More analysis is needed to determine if this option would address concerns related to taste, odor, color, spotting, purity and general health. | More analysis is needed to determine if this option would meet long-term capacity and reliability requirements and to determine the time required to complete. | $55 to $64 per month increase |
| Kalama River Source – Ranney Collector | Addresses concerns related to taste, odor, color, spotting, purity and general health. | More analysis is needed to determine if this option would meet long-term capacity and reliability requirements. Up to 3 years to complete. | $14 per month increase |