

City of Chehalis Water Rights & Water Availability

History and Status of Water Rights and Demands

Presentation for: Chehalis Basin Partnership
January 26, 2018



Chehalis's Water Supply Needs



- ▶ Water for existing municipal, commercial and industrial use
- ▶ Water for industrial growth (unmet)
 - ▶ Both Port of Chehalis and EDC have had to reject interested parties due to water availability
 - ▶ Request to increase UGA to include 635 acres north of the City limits
 - ▶ EDC has offered to pay legal fees for initial analysis of water rights attorney

Water Right History

► Newaukum River



Water Right History

▶ North Fork Newaukum River:

▶ Certificated Water Right

- 10 cfs (6.46 mgd); no annual limit

Priority Date of February 6, 1923

▶ Water Right Claim

- 4.34 cfs (2.80 mgd); 3,136 ac-ft/yr (10,218 MG/yr)

Priority Date of July 27, 1997

▶ Water First Put to Use: 1914

Pre-dates "Section 39, Chapter 137, Session Laws 1917")



Water Right History (Cont.)

► Chehalis River Mainstem



Water Right History (Cont.)



- ▶ Chehalis River:
 - ▶ Certificated Water Right
 - 11.6 cfs (7.48 mgd); 980 ac-ft/yr (319.3 MG/yr)
 - Priority Date of November 26, 1957
 - ▶ Water First Put to Use: 1957

 - ▶ Previous Rights - 15.0 cfs (9.7 mgd); no annual limit
 - ▶ Rights reduced by DOE in 2008 to current level
 - ▶ Proof of Appropriations process

What's the Problem on the Newaukum?

► Water Rights vs. Water Availability

Water Rights = 10 cfs (4,488 gpm) = 6,460,000 gpd

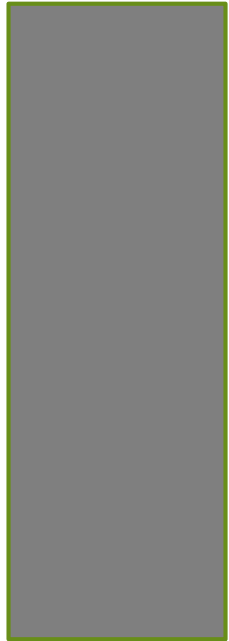
Plant Capacity = 7.42 cfs (3,333 gpm) = 4,800,000 gpd

River Capacity = 4.01 cfs (1,800 gpm) = 2,595,000 gpd

Limiting Factor: Seasonal *Low River Flows* (Capacity)



What's the Problem on the Newaukum?



Water Rights



Summer River Flows

- Nitty-Gritty: We have more rights than we can draw from the river.

What's the Problem on the Chehalis?

► Water Rights vs. Water Availability

Water Rights = 11.6 cfs (5,206 gpm) =
7,494,000 gpd = 980 ac-ft/yr (608 gpm
continuous)

Plant Capacity = 7.42 cfs (3,333 gpm) =
4,800,000 gpd

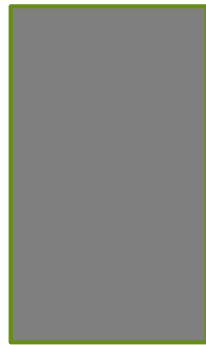
River Capacity = ?

Limiting Factor: Annual Water Withdrawal
(Rights)



What's the Problem on the Chehalis?

- ▶ Nitty-Gritty: *We need more water rights for Annual Withdrawal.*



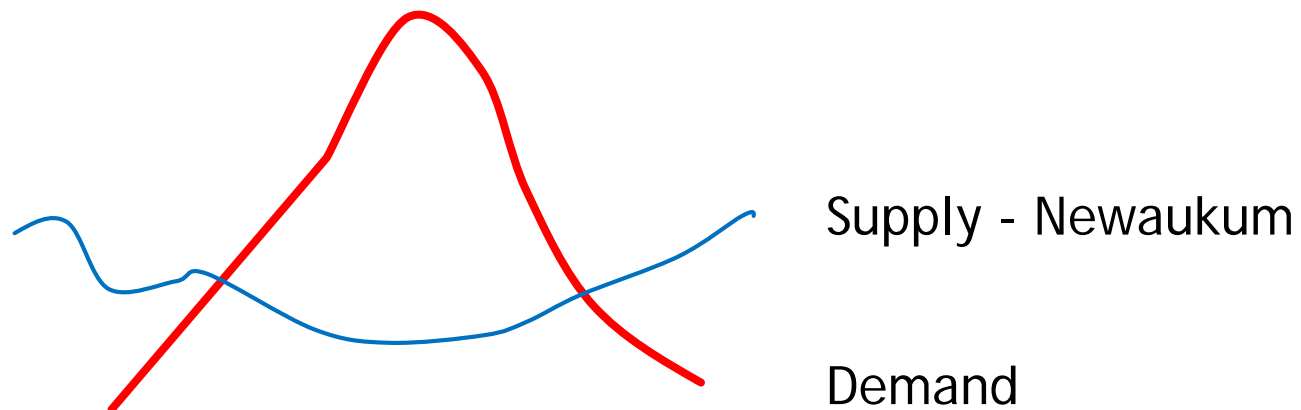
Water Rights



City Demand

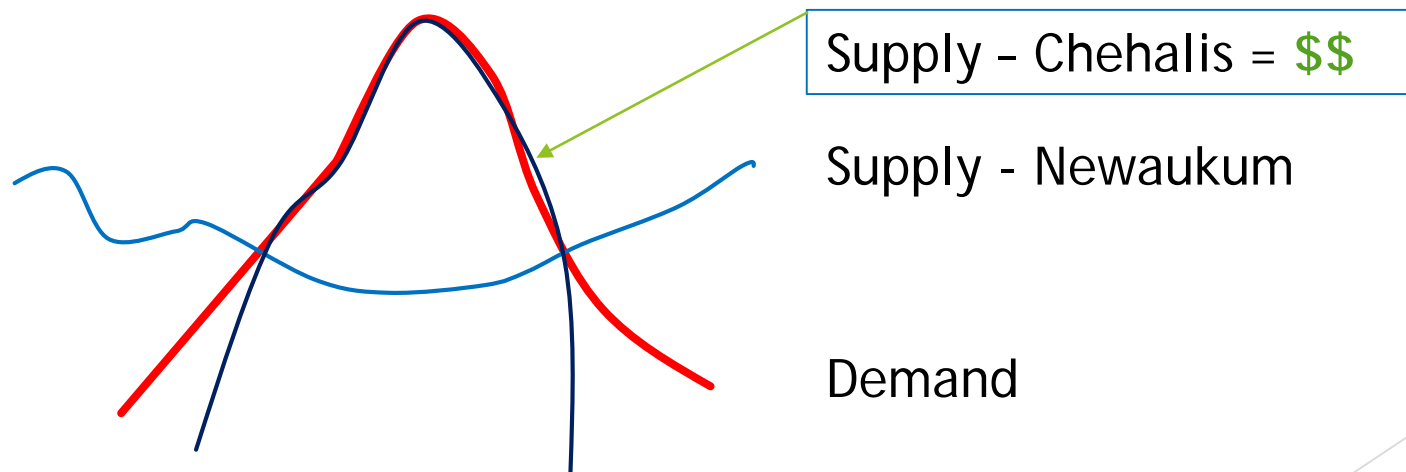
Supply and Demand

- ▶ Highest System Demand typically coincides with lowest water availability in the Newaukum (seasonal low flow):
 - ▶ Seasonal Available Water in Newaukum = 1,800 gpm (2,592,000 gpd)
 - ▶ Existing Peak-day demands exceed 2,000,000 gpd
 - ▶ Existing Peak-hour demands exceed water available in River



Supply and Demand

- ▶ Demands Results in Withdrawal from Chehalis River
 - ▶ But, cost to Pump and Treat Chehalis River Water is higher (pumping required and turbidity/chemical composition differences)
 - ▶ Temporary plant modifications required each time raw water source is changed.



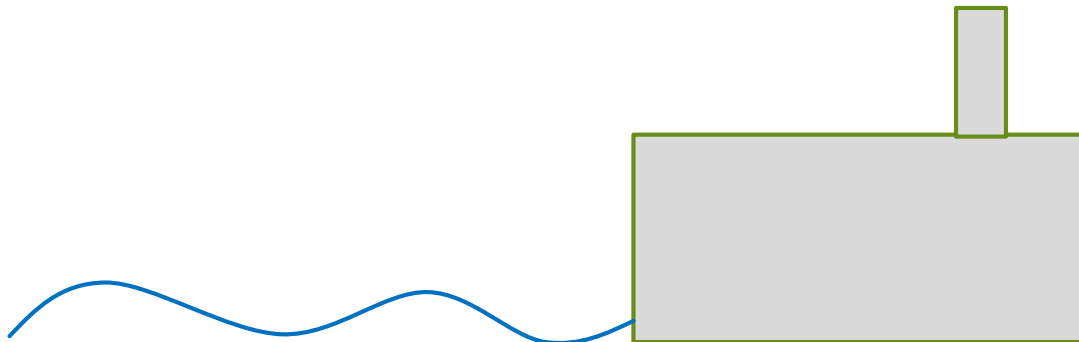
Alternatives to Consider

- ▶ Raw Water Impoundment on Newaukum
 - ▶ Benefits:
 - ▶ Limitations:
 - ▶ Land, design, and construction costs
 - ▶ Environmental/Permitting issues



Alternatives to Consider (cont.)

- ▶ Add second treatment plant dedicated to Chehalis River Water
 - ▶ Benefits:
 - ▶ Limitations:
 - ▶ Land, design, and construction costs
 - ▶ O&M Costs of new Plant
 - ▶ Need additional water rights for system sized for future growth with continuous operation
 - ▶ Forcemain replacement and pump station upgrades



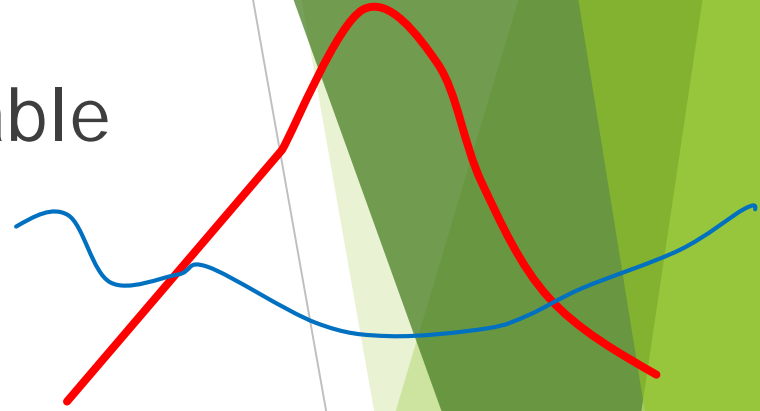
Alternatives (Cont.)

- ▶ Conversion of WWTP for active reclaimed water system
 - ▶ Benefits:
 - ▶ Revenue generating
 - ▶ Limitations:
 - ▶ Existing plant/demands result in discharging an average of 1,500,000 gpd (dry weather)
 - ▶ Design and construction costs of site improvements and distribution system
 - ▶ Obtaining reclaimed water customers/users



Summary

- ▶ Existing Peak Demands utilize all water available on the Newaukum (seasonally)
- ▶ Water availability are limiting commercial/industrial development for high water users
- ▶ Staff is considering a range of solutions



Summary (Cont.)

- ▶ Alternatives Being Considered
 - ▶ Attempt to obtain additional water rights
 - ▶ Install second plant (water right limitations)
 - ▶ Raw water storage
 - ▶ Reclaimed water

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Thank You!