

# ***Facility Plan***

## ***Town of Yacolt***

# *Providing Input / Questions*

- ▼ Please provide input and questions via email and comment cards; no Q&A tonight
- ▼ Next session -- March 26<sup>th</sup>: questions from tonight's presentation will be answered; and a live Q&A session will be held

# ***Previous Public Outreach Efforts and Presentations to Council***

- ▼ **FAQ #1: Should Yacolt Install a Sewer System? (Fall 2010)**
- ▼ **FAQ #2: General Sewer Plans and Facility Plans (Fall 2010)**
- ▼ **K/J Presentation to Council: General Sewer Plan (Nov. 2008)**

# ***Types of Engineering Documents Associated with Construction of Sewer Systems***

- ▼ **Engineering Study** (various studies have been conducted over previous decades)
- ▼ **General Sewer Plan**
- ▼ **Facilities Plan**
- ▼ **Contract Documents for Construction** (Bid documents, Plans and Specifications)

# ***Engineering Documents, continued***

## ▼ **General Sewer Plan (GSP)**

- Required by Washington Administrative Code (WAC) Chapter 173-240-050
- Yacolt GSP approved by Washington Dept. of Ecology (Ecology) January 2011

## ▼ **Facility Plan**

- Required by WAC Chapter 173-240-060

## ▼ **Design Plans and Specifications**

- Required by WAC Chapter 173-240-070

# Overall Steps to Sewer System

*General Sewer Plan  
(Ecology Approved)*

*Facility Plan  
(Draft April 2012)*

*SERP Permitting  
(include with Fac. Plan)*

*Funding / Governance*

*Design*

*Construction*



# ***How Can a Community Benefit from a Sewer System?***

**There are several potential benefits to a community.  
These can include:**

- ▼ If existing lots are too small for effective septic system operation in a community.**
- ▼ Protection of groundwater sources, drinking water wells, and local streams.**
- ▼ If community wants to grow and encourage economic development but is restricted by no sewer.**
- ▼ If community wants to have industrial or certain commercial uses including medical clinics that are not allowed on septic systems.**
- ▼ Sewers allow homeowners to use their entire lot by avoiding drainfields and drainfield reserve areas.**

# ***Potential Benefits from a Sewer System to Town of Yacolt***

## **Development-related benefits could include:**

- ▼ **Development of small existing or proposed lots.**
- ▼ **Growth and economic development.**
- ▼ **Industrial or certain commercial uses including medical clinics could be added.**
- ▼ **Greater lot flexibility.**

## **Environmental benefits could include:**

- ▼ **Protection of groundwater sources, drinking water wells, and local streams.**

# ***Proposed Collection, Treatment, and Discharge Systems***

**Facility Plan will recommend those alternatives which were recommended in the GSP and approved by Ecology.**

**Ecology's GSP approval letter stated:  
“we recommend that the [Town] focus its efforts on the preferred alternative(s)”**

# ***Recommended Alternatives***

- ▼ **Collection - Pipelines in the ground: Vacuum System**
- ▼ **Treatment: Biolac (lagoon)**
- ▼ **Discharge of treated water: into Ground** (via Rapid Infiltration)
- ▼ **Solids: Facultative Lagoon** (Class B)

# ***Vacuum Collection System – Residences to Valve Pit***

- ▼ Valve pits are interface between gravity sewage collection lines (from residences) and vacuum collection system in the roadways.



# Vacuum Collection System - Piping



# ***Vacuum Collection Station***

- ▼ **Vacuum pumps** (collect sewage from valve pits, deliver to collection tank)
- ▼ **Collection tank**
- ▼ **Centrifugal pumps** (deliver sewage to treatment plant)
- ▼ **Odor Reduction Unit**
- ▼ **Emergency Generator**

# ***Biolac Treatment System - WWTP***



# ***WWTP Auxiliary Treatment Facilities***

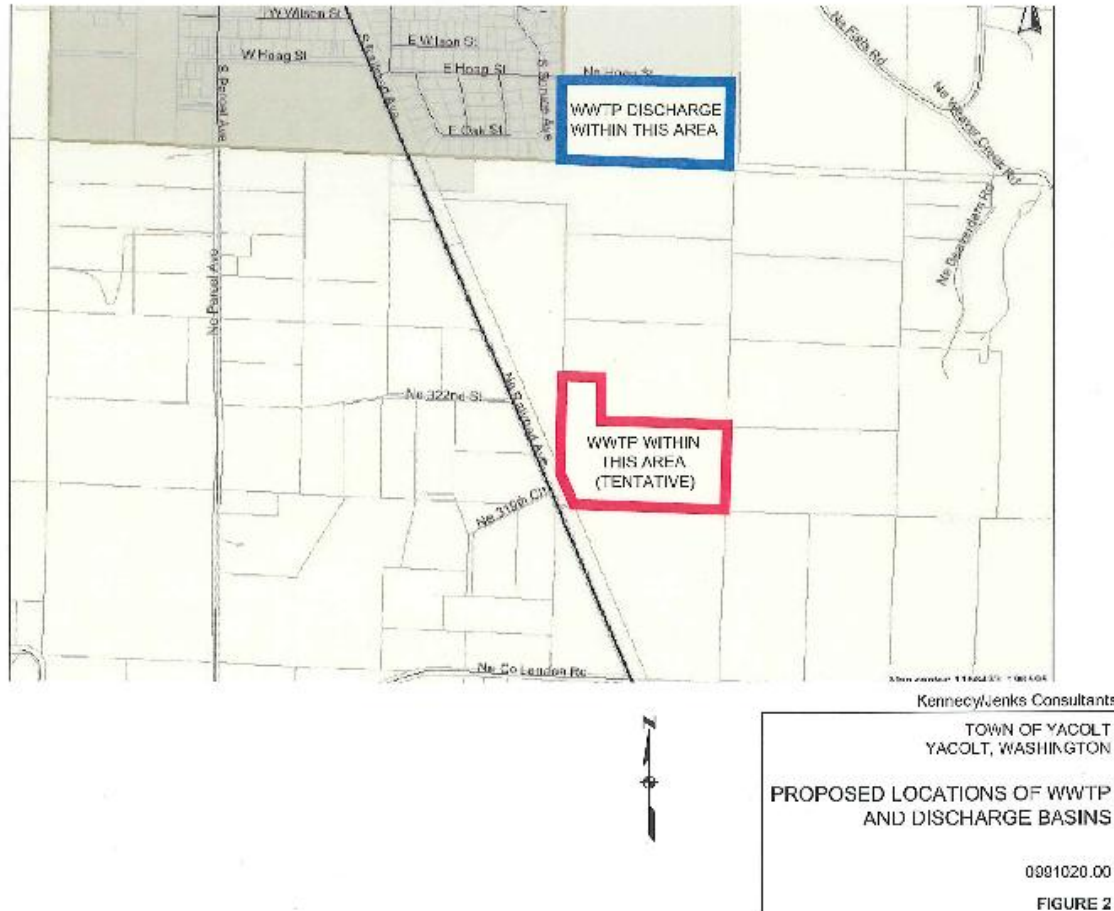
- ▼ **Screens: remove grit, debris**
- ▼ **UV Disinfection**
- ▼ **Facultative Lagoon: Solids Handling**  
(solids to be land-applied at permitted Class B site)

# ***Rapid Infiltration Discharge System***

- ▼ **Land (subsurface) application of treated wastewater (effluent)**
- ▼ **Area wells monitor groundwater quality (new wells installed 11/11)**
- ▼ **WWTP will remove BOD, TSS, nitrogen, and phosphorus to very low levels**

# Proposed Locations for Treatment Plant and Discharge Basins

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# ***Estimated Range of Sewer Rates***

- ▼ **Monthly rates for most favorable case considered (\$5.5 M grant): rates vary, approximately \$80 - \$95**  
[new SDCs = \$7,500]
- ▼ **Monthly rates for least favorable case considered (no grant, no SDCs): rates vary, approx. \$125 - \$150**
  - ▼ ***In this case, Town most likely would not proceed***

# ***Estimated Range of Sewer Rates: Considerations***

- ▼ Rates could decrease significantly after 20 years (due to loan payoff)
- ▼ Could potentially decrease cost of collection system (70% of capital cost) by increasing competition (via bid documents).
- ▼ Estimated capital cost = \$13.0M
- ▼ Contingency = 25% (\$10.4M → 13.0M)
- ▼ Rates assume 1 additional employee (WWTP)

# ***Estimated Range of Sewer Rates: Contingency***

- ▼ **25% - 35% contingency is appropriate for planning phase in order to account for costs which are not defined because they are unknown at this time**
- ▼ **As progress from planning to final design phases, contingency is lowered because project gains definition (i.e. fewer unknowns)**
- ▼ **Final project cost will be influenced greatly by various factors, including:**
  - Inflation, particularly inflation of labor and prices of materials (steel & concrete)
  - Economic conditions (are contractors “hungry”?)
  - Lag time (years) until project construction commences (rates assume WWTP starts up in 2019)

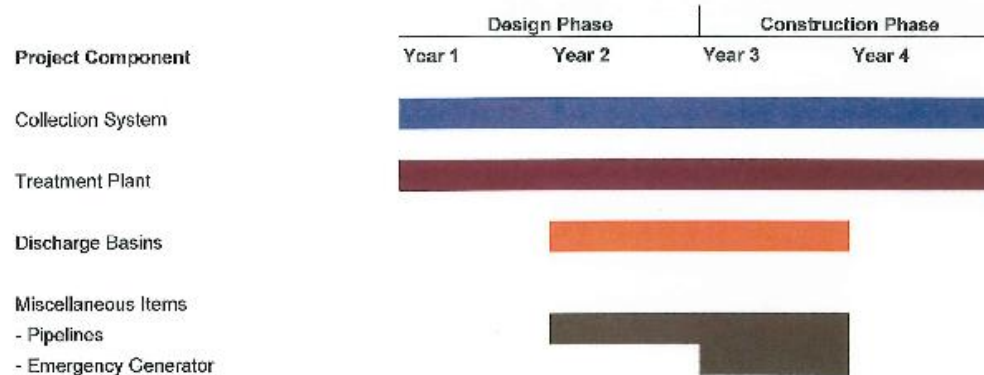
# ***Current Rates for Small Communities which Constructed Sewer Systems***

▼ **Tenino, WA:      \$135**

▼ **Carnation, WA: \$102**

▼ **Belfair, WA:      \$96**

# *Timeline for Design & Construction*



# ***Fallback Options?***

## ▼ **If no sewer...**

- Do nothing -- maintain current size, uses, and layout

**and/or**

- Wait until forced to put in sewer due to water quality concerns / public health concerns or community desire and support for growth

**and/or**

- Town could require nitrogen removal systems on all individual septic systems

# *Involving the Public – Next Steps*

## ▼ Public input - What are Yacolt's plans/need for the future?

- Citizens
- Business Owners
- Developers



## ▼ Next Meeting: Facilitated Question & Answer

## ▼ Citizen Advisory Committee (CAC)

# Comments?

## ▼ Email:

[townofyacolt@centurytel.net](mailto:townofyacolt@centurytel.net)

## ▼ Comment cards

***The End***