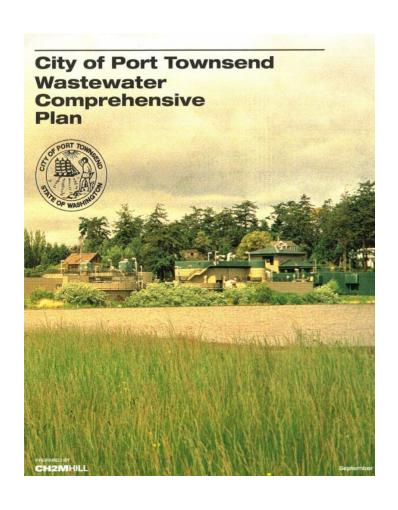
General Sewer Plan Update 2021

Primer

CITY COUNCIL WORK SESSION DECEMBER 14, 2020





Introductions

Thank you!

Lead Staff:

Bliss Morris: Wastewater Treatment Ops Manager

Brian Reid: Streets, Stormwater, and Sewer Collections Ops

2

Manager

David Peterson: City Engineer

Supporting Departments:

Engineering,

Wastewater & Compost

Collections

City Admin: City Manager, Finance, Legal

Dev. Services



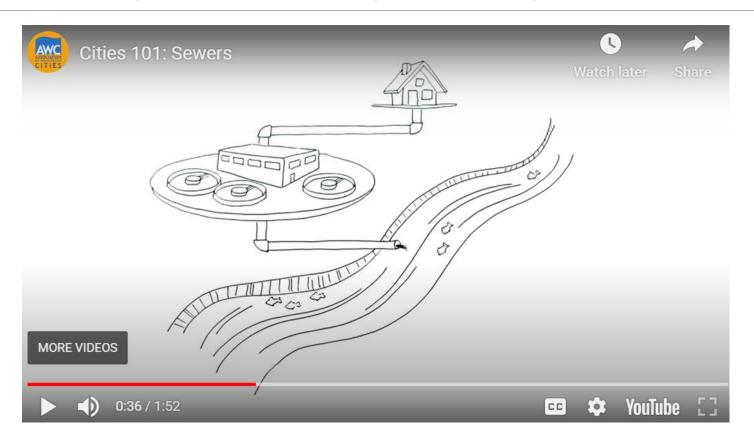


Workshop Objectives

Foreshadow - Work Ahead

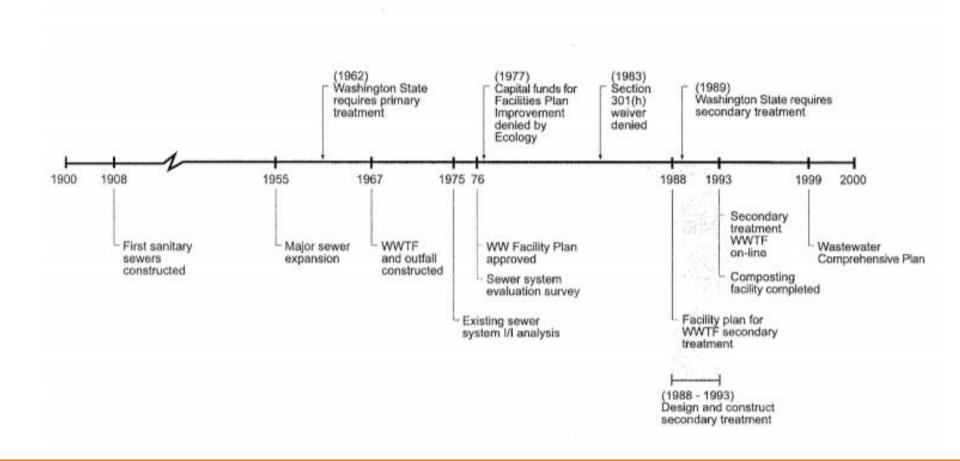
- 1. Share, background, history, and base data
- 2. Review past reports, studies, and accomplishments
- 3. Share some of the questions we'll evaluate in the update of the General Sewer Plan
- 4. Share next steps
- 5. Answer questions

Why do we update plans?



https://wacities.org/about-us/our-281-cities-and-towns/cities-101-videos

Sewer System History



Background Components of our System



Collections

Background Components of our System



Treatment

Background Components of our System



Solids Management - Compost

Background Current Financials

2019 Budget

- Total Revenue = \$3.45 Million (Includes Capital Charges)
- Operating Expenses = \$3.06 Million

2019 Operating Budgets Breakdown

- Collections \$0.9 Million
- Treatment \$1.6 Million
- Compost \$0.5 Million

2021 Rates

\$44.91 for Single Family Residential

Rates based on Financial Solutions Consulting Group Rate Model (2017)

Monthly Fixed Charge – All Classes	O&M Rate	Capital Surcharge	Total	
Low-Income				
Water Use ≤ 3,000 Gallons per Month	\$17.96	\$4.50	\$22.46	
Water Use > 3,000 Gallons per Month	\$22.20	\$4.50	\$26.70	
Residential (Including Duplexes)				
Water Use ≤ 3,000 Gallons per Month	\$35.91	\$9.00	\$44.91	
Water Use > 3,000 Gallons per Month	\$44.4 0	\$9.00	\$53.40	
Multifamily & Commercial:				
5/8" to 3/4"	\$31.83	\$9.00	\$40.83	
1"	\$47.74	\$9.00	\$56.74	
1-1/2"	\$79.57	\$9.00	\$88.57	
2"	\$122.00	\$9.00	\$131.00	
3"	\$445.58	\$9.00	\$454.58	

Background: Service Area and Customer Base

- Current Service Area = City Limits
- Number of Sewer Accounts = 4,762
- Est. Number of Septic Systems = 186
- Number of lots or area more than260 ft from a city sewer line = ?Many?
- Port owned pipe network
 - Point Hudson
 - Boat Haven
- Fort Worden owned pipe network



Background Collections

- 84 Miles of Pipe
- 7 lift stations
- Infiltration Very Small
- Inflow causes WWTP Flows to double





1 US Gallon



Perspective:

Morgan Hill Reservoirs used to store approx. 5 MG

Wastewater Treatment Terminology

Avoiding Confusion with Common Terminology

How do we discuss water amounts?

- Flow = Million Gallons Per Day (MGD)
- Volume = Million Gallons (MG)
- Average Annual Flow = Volume of water over the course of a year divided by 365 days (366 in leap year)

Background: Wastewater Treatment

- Average Annual Daily Flow: 0.9 MGD
- Max Day Flow: 3.5 MGD during storms
- Tons of biosolids produced per year: 253 Dry Tons
- Tons of Yard Waste: 3,726 Tons
- CY of compost per year: 4,318 CY

A Pickup load of Compost = 1-2 Cubic Yards



Background: Wastewater Treatment

- Treatment Plant and Compost Facility Constructed: 1993
- WWTP First Class Facility even at 28 years of age.
- 1st Compost Facility in Washington dealing with 3 waste streams
 - Yard waste
 - Biosolids
 - Septage
- 22 out of 23 years no permit discharge violation



Background: Current Funded Capital Projects

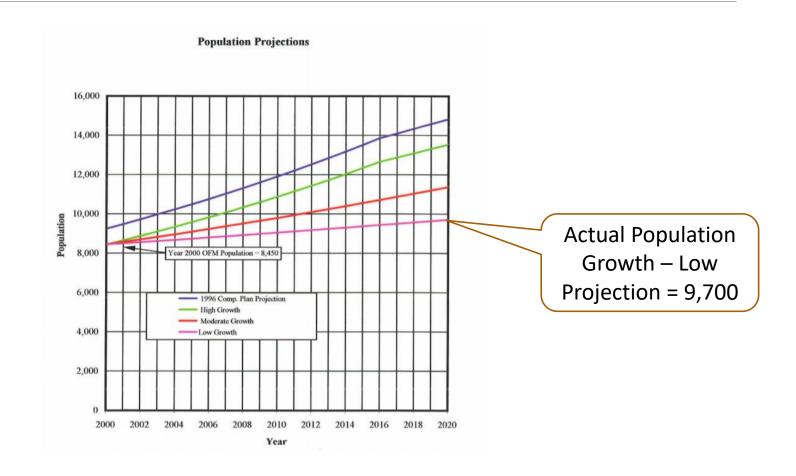
- Outfall
- Gaines St. Pump Station Rehab
- Maintenance Holes Rehab
- 7th Street Pipe Replacement and Upsize



Background: Review of Past Studies

- 1999 Wastewater Comprehensive Plan
- 2000 Wastewater Facilities Plan
- 2009 Mill Road Pump Station and Force Main Study
- 2012 Southwest Sewer Basin Study
- 2019 Facilities Condition Assessment

Background: 1999 & 2000 Plans



Background: 1999 & 2000 Plans



Background: 1999 & 2000 Plans

Wastewater Treatment Plant Rated for:

- Max Month Flow: 2.05 MGD
- Biological Oxygen Demand: 3,754 lbs/day
- Total Suspended Solids: 4,568 lbs/day

When plant reaches 85% of rated capacity, the City must plan for upgrades.



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

R.C. Box 42725 * Olympia, Washington 98504-7775 * (360) 407-6300

August 21, 2000

Mr. John Merchant City of Port Townsend 181 Quincy Street, Suite 30 Port Townsend, WA 98368

Dear Mr. Merchant:

Re: Capacity Re-Rating for City of Port Townsend Wastewater Treatment Facility

The Washington State Department of Ecology (Ecology) reviewed the City of Port Townsend Revised Draft Wastewater Comprehensive Plan (Plan) of June 1999, and submitted comments on this and earlier drafts on June 2, 1999, and October 4, 1999. In the October comments, Ecology stated that we planned to begin our review of the request to change the design capacity of the city's wastewater treatment facility and would provide comments on this section of the Plan later. Ecology has now reviewed the City of Port Townsend Wastewater Treatment Facility Capacity Re-Rating in Appendix I of the Plan, and Ecology has reviewed the May 12, 2000, letter report from Gray & Osborne, Wastewater Treatment Plant Capacity Re-Rating, City of Port Townsend, Jefferson County, Washington.

Ecology concurs with the capacity re-rating information provided in the Plan and in the letter report. Ecology has determined that the information provided justifies the design capacity changes requested by the city. The design criteria that changes are the average annual flow increases from 1.27 MGD to 1.44 MGD, the average flow for the maximum month increases from 1.81 MGD to 2.05 MGD, the BOD, loading for the maximum month increases from 2804 lbs/day to 3754 lbs/day, and the TSS loading for the maximum month increases from 3018 lbs/day to 4568 lbs/day, in order to implement the design capacity re-rate, the wastewater treatment facility's NPDES Permit No. WAO037052 must be modified to reflect the new design criteria.

It is Ecology's understanding, that with Ecology's concurrence with the capacity re-rating, that the city would proceed in finalizing the Plan. Ecology will proceed with the NPDES permit modification to implement the rerate once we receive an approveable final version of the Plan. An approveable version of the Plan would include appropriate additions/revisions about inflow and infiltration issues, per Ecology's previous comments. Ecology's intention would be to approve the Plan as a general sewer plan, unless the city decides to upgrade the Plan to a facility plan. To make the Plan a facility plan, the requirements in WAC 173-240-060 need to be addressed in the Plan.

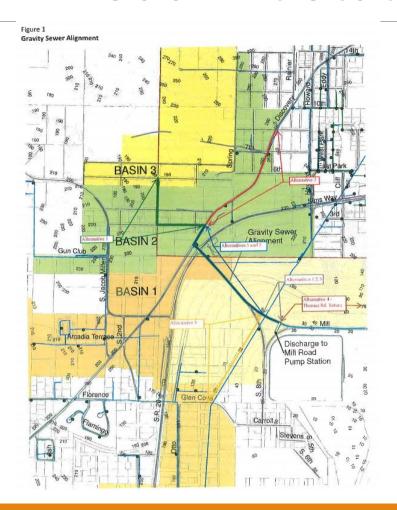
If you have any questions, please contact me at (360) 407-6278

Dave Doughet, P.E.

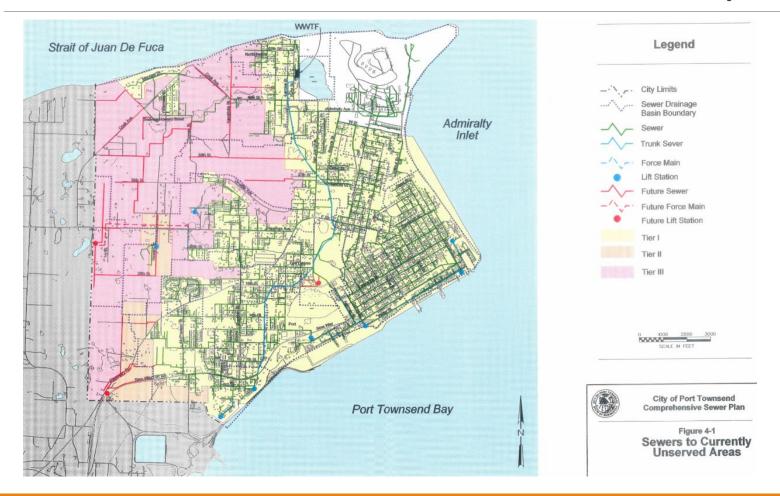
Facility Engineer
Water Quality Program
Southwest Regional Office
DD:bp(wq\dd104)

ec: Ken Enns, Gray & Osborne Dominic Miller, Gray & Osborne File: Jefferson/Port Townsend STP/Engineering

Background: Mill Road Lift Station



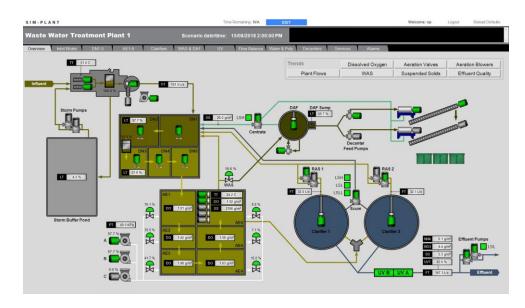
Background: 2012 Southwest Basin Study



Background: 2019 Facilities Assessment



Corrosion



Supervisory Control System Outdated

Estimated \$1.5 over 10 years

General Sewer Plan Update: Customer Base

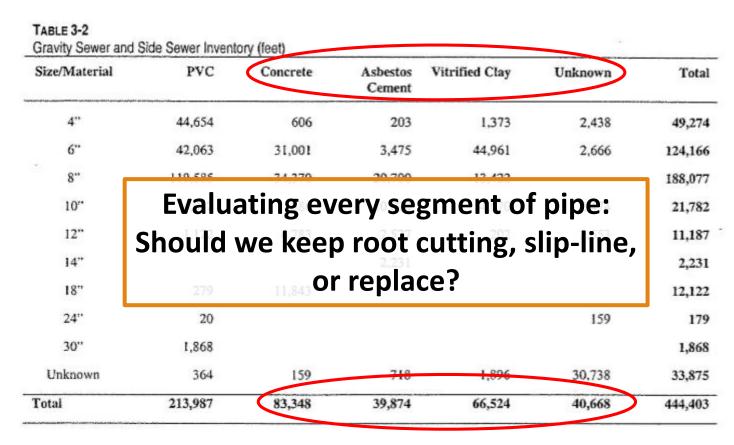
- What does growth look like in the net 20 years?
 - Commercial?
 - Residential?
- Should there be additional service areas for environmental protection?
- Should there be strategies for infill?
- Are there sewer extensions needed?
- What regulations are on the horizon?
- Incorporate billing audit into financials.

Table 4-1

Planning Period	County Resolution No.	Total Population for Ending Year	Compound Annual Growth Rate
1996-2016	96-046	13,876	2.56%
2016-2036	38-15	12,165	1.27%

2036 Projection = 12,165 City Comprehensive Plan

General Sewer Plan Update: Collections



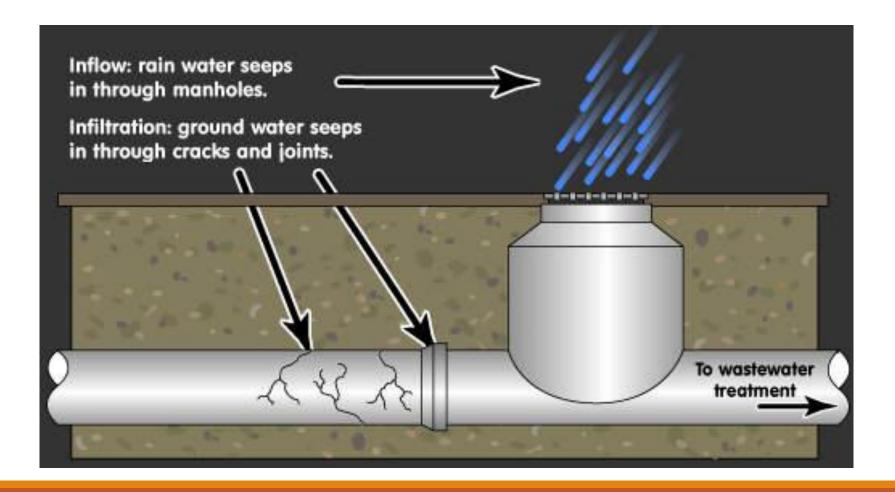
Approx. 40 Miles of Early Vintage Pipe

General Sewer Plan Update: Collections – Pipe Lining?



Many cities implement an annual slip-lining program.

General Sewer Plan Update: Collections – Inflow

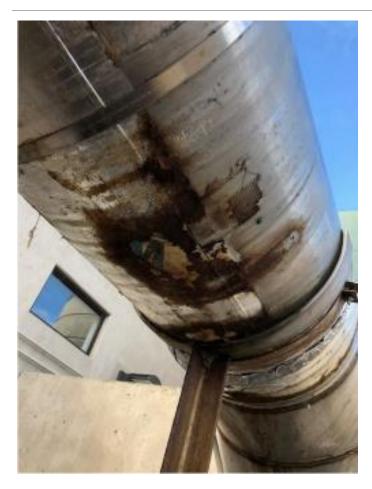


General Sewer Plan Update: Collections – Sea Level Rise?



March 2016 – King Tide

General Sewer Plan Update: Treatment Plant - Age





General Sewer Plan Update: Treatment Plant - Expansion



General Sewer Plan Update: Compost - Age



General Sewer Plan Update: Compost - Capacity

- Matching Wastewater Treatment Plan
- Septage
- Demands for Food Waste
- Site Coordination

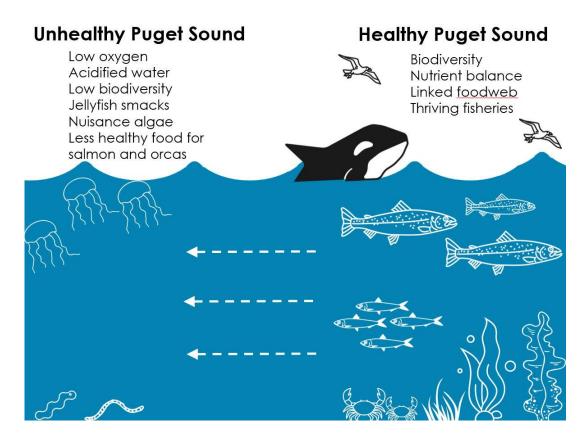
Compost Facility

Jeff. Co. Recycle, Transfer Sta., and Scale



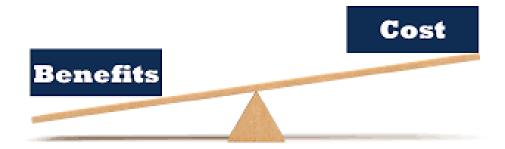
General Sewer Plan Update: Treatment Plant - Nutrients





General Sewer Plan Update: Striving for Best Values

- Maintenance and Operations Projections
- Updated Capital Plan for facilities and collections
- Customer base projections



2021 Next Steps

- 1. CIP Budget carry forward to fund plan. Est. \$155,000
- Advertise and hire consultant
- 3. Perform analysis
- 4. Consider options and policy goals
- 5. Public engagement
- 6. Rates analysis
- 7. Rate adjustment consideration

2022 and Beyond – Implement!



Questions

Sign up through www.cityofpt.us/EngagePT

Contacts:

Brian Reid, Collections – breid@cityofpt.us

Bliss Morris, Wastewater Treatment and Compost – bmorris@cityofpt.us

David Peterson, City Engineer – dpeterson@cityofpt.us

Steve King, Public Works Director – sking@cityofpt.us



