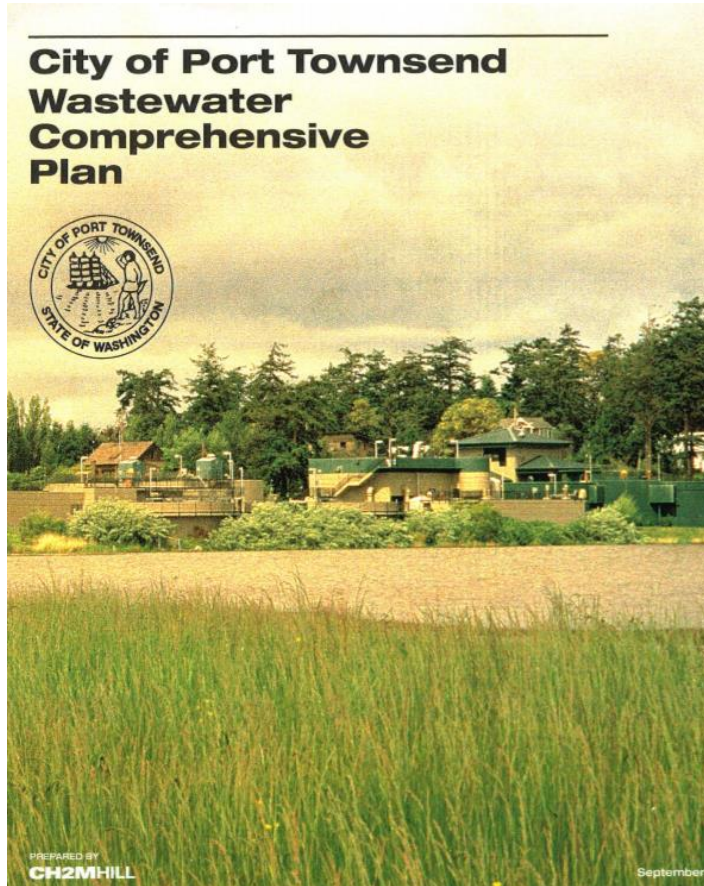

General Sewer Plan Update 2021

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 Manager

David Peterson: City Engineer

Supporting Departments:

Engineering,

Wastewater & Compost

Collections

City Admin: City Manager, Finance, Legal

Dev. Services



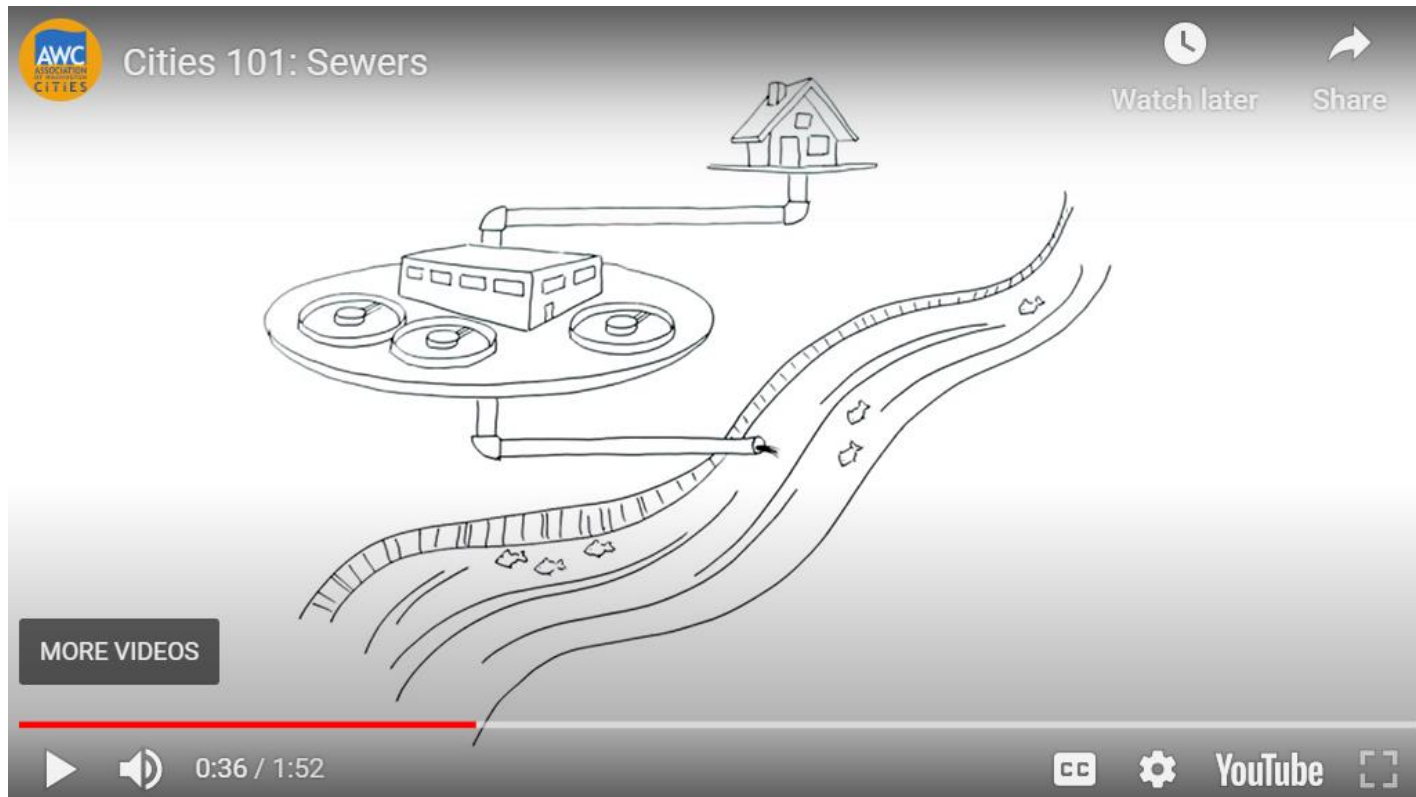
Workshop Objectives

Foreshadow - Work Ahead



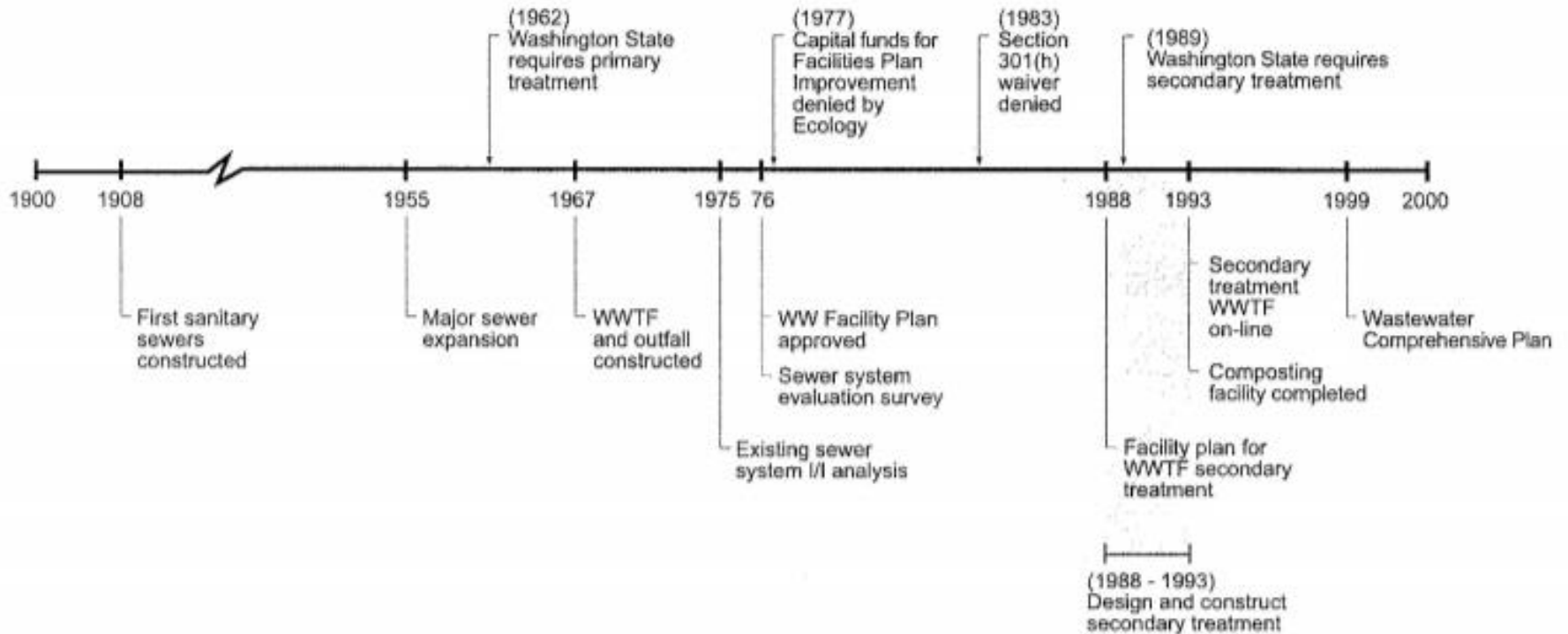
1. Share, background, history, and base data
2. Review past reports, studies, and accomplishments
3. Share some of the questions we'll evaluate in the update of the General Sewer Plan
4. Share next steps
5. Answer questions

Why do we update plans?



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

Sewer System History

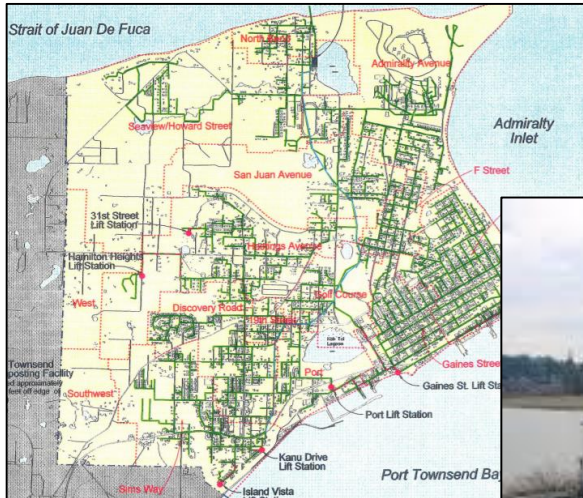


Background Components of our System



Collections

Background Components of our System

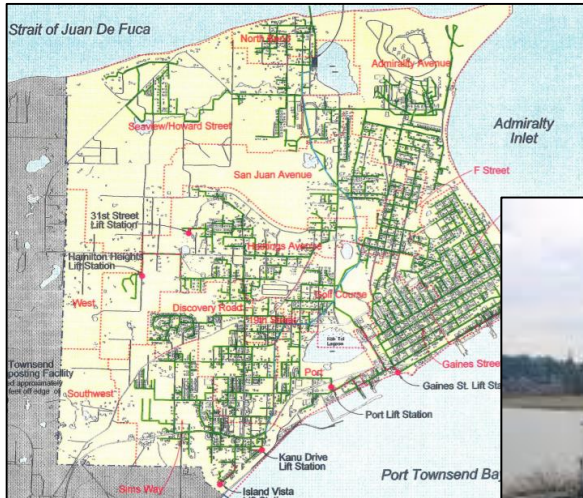


Collections



Treatment

Background Components of our System



Collections



Treatment



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

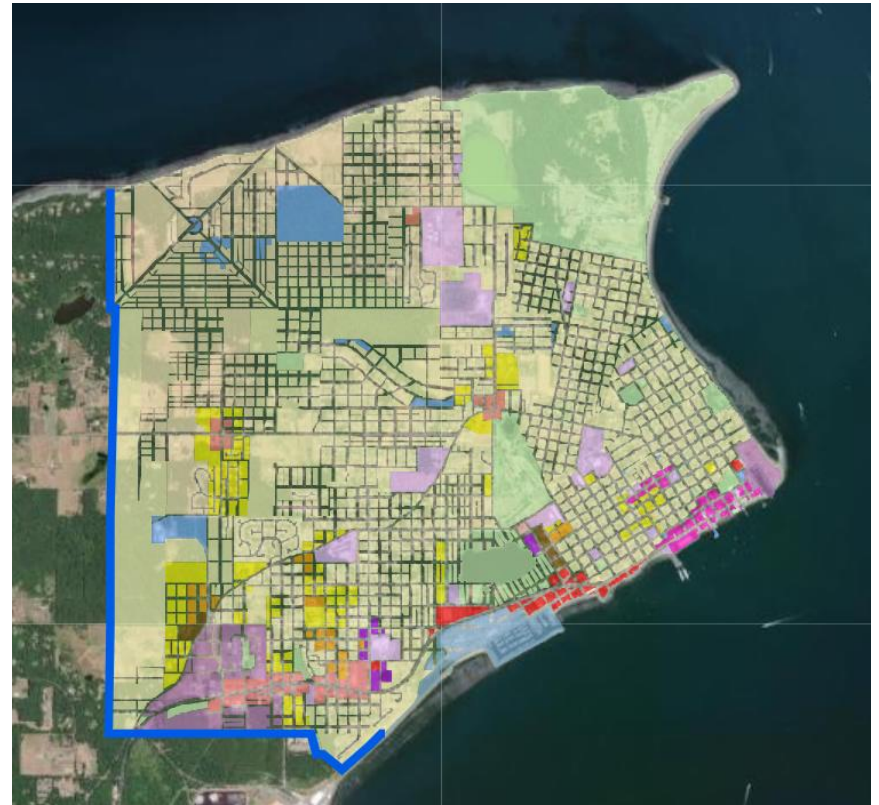
- \$44.91 for Single Family Residential

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	\$41.40	\$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 than 260 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



Wastewater Treatment Terminology



1 US Gallon



Perspective:

Morgan Hill Reservoirs used to store approx. 5 MG

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

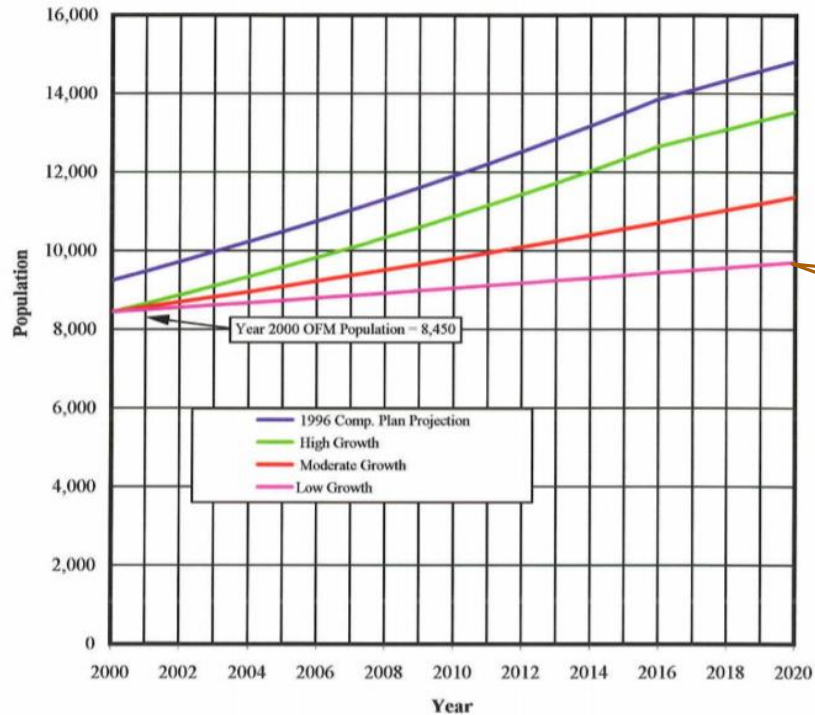


Background: Review of Past Studies

- 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

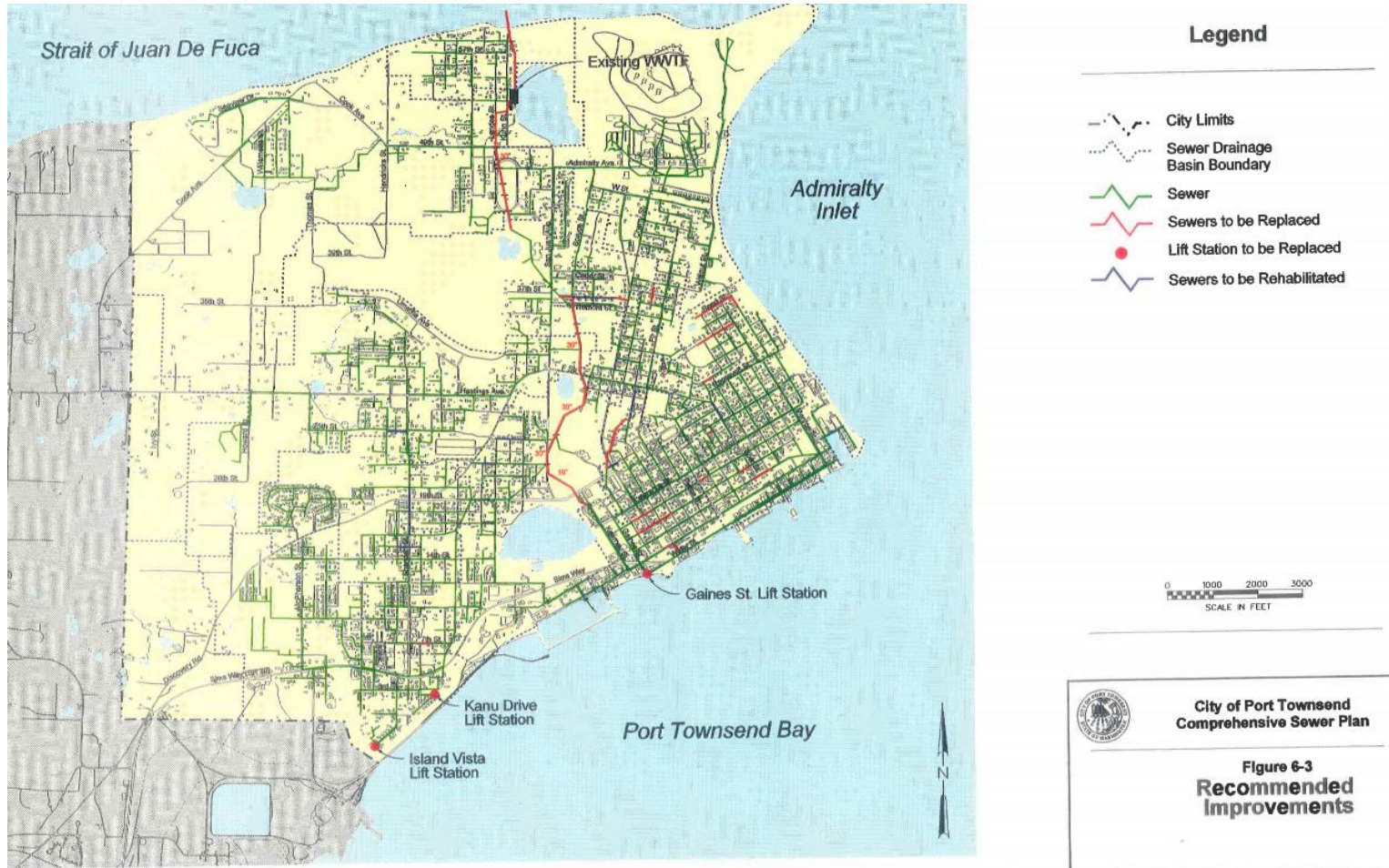
Background: 1999 & 2000 Plans

Population Projections



Actual Population
Growth - Low
Projection = 9,700

Background: 1999 & 2000 Plans

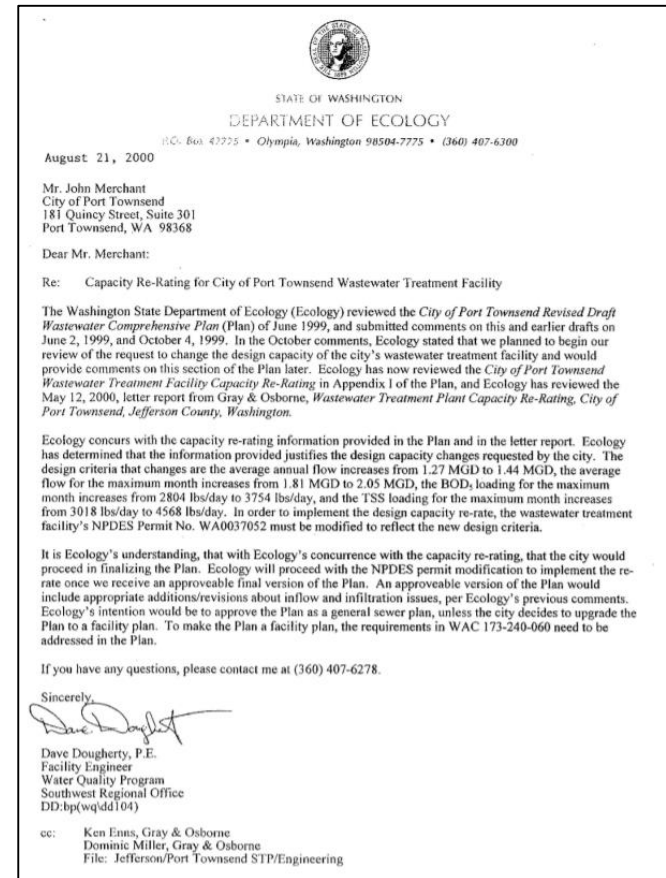


Background: 1999 & 2000 Plans

Wastewater Treatment Plant Rated for:

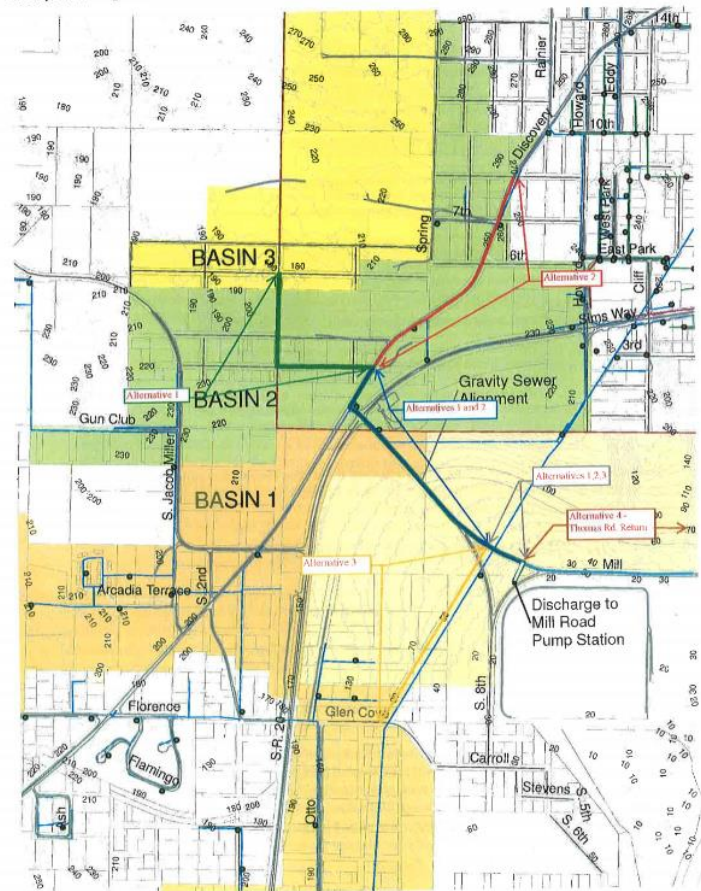
- Max Month Flow: 2.05 MGD
- Biological Oxygen Demand: 3,754 lbs/day
- Total Suspended Solids: 4,568 lbs/day

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

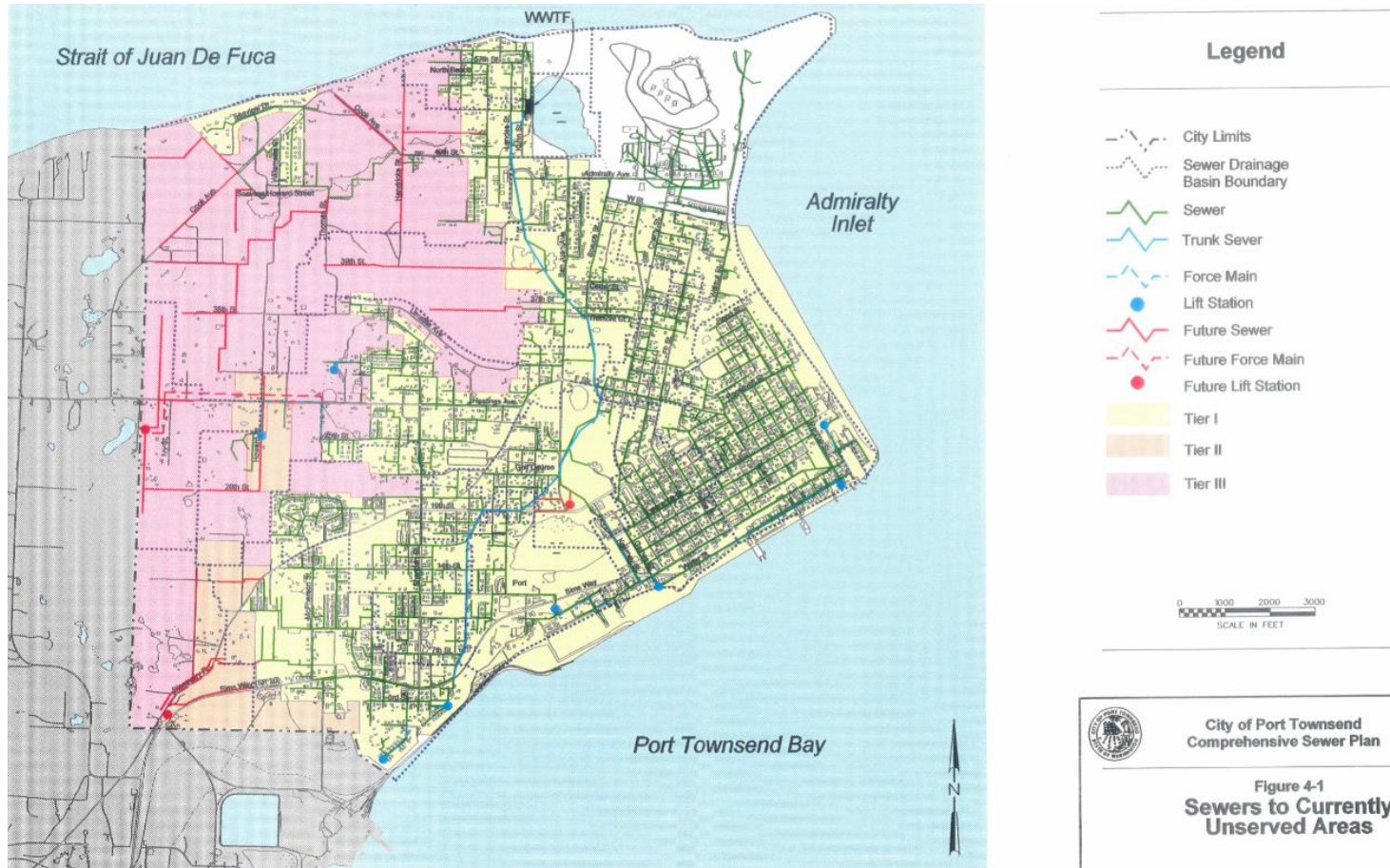


Background: Mill Road Lift Station

Figure 1
Gravity Sewer Alignment



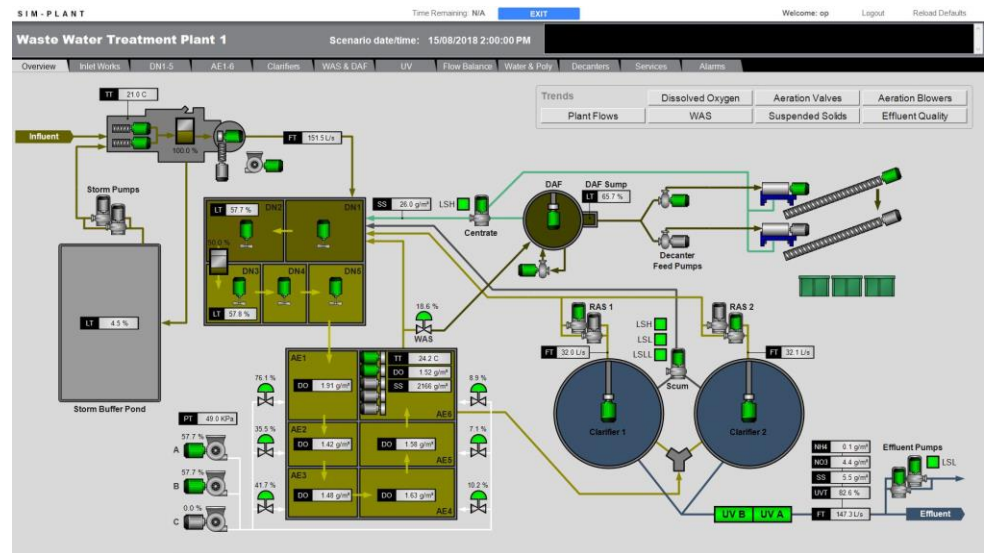
Background: 2012 Southwest Basin Study



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

TABLE 3-2
Gravity Sewer and Side Sewer Inventory (feet)

Size/Material	PVC	Concrete	Asbestos Cement	Vitrified Clay	Unknown	Total
4"	44,654	606	203	1,373	2,438	49,274
6"	42,063	31,001	3,475	44,961	2,666	124,166
8"	110,585	21,270	20,700	12,422		188,077
10"	1,117	1,783	2,557	702	1,553	21,782
12"						11,187
14"			2,231			2,231
18"	279	11,843				12,122
24"	20				159	179
30"	1,868					1,868
Unknown	364	159	718	1,896	30,738	33,875
Total	213,987	83,348	39,874	66,524	40,668	444,403

**Evaluating every segment of pipe:
Should we keep root cutting, slip-line,
or replace?**

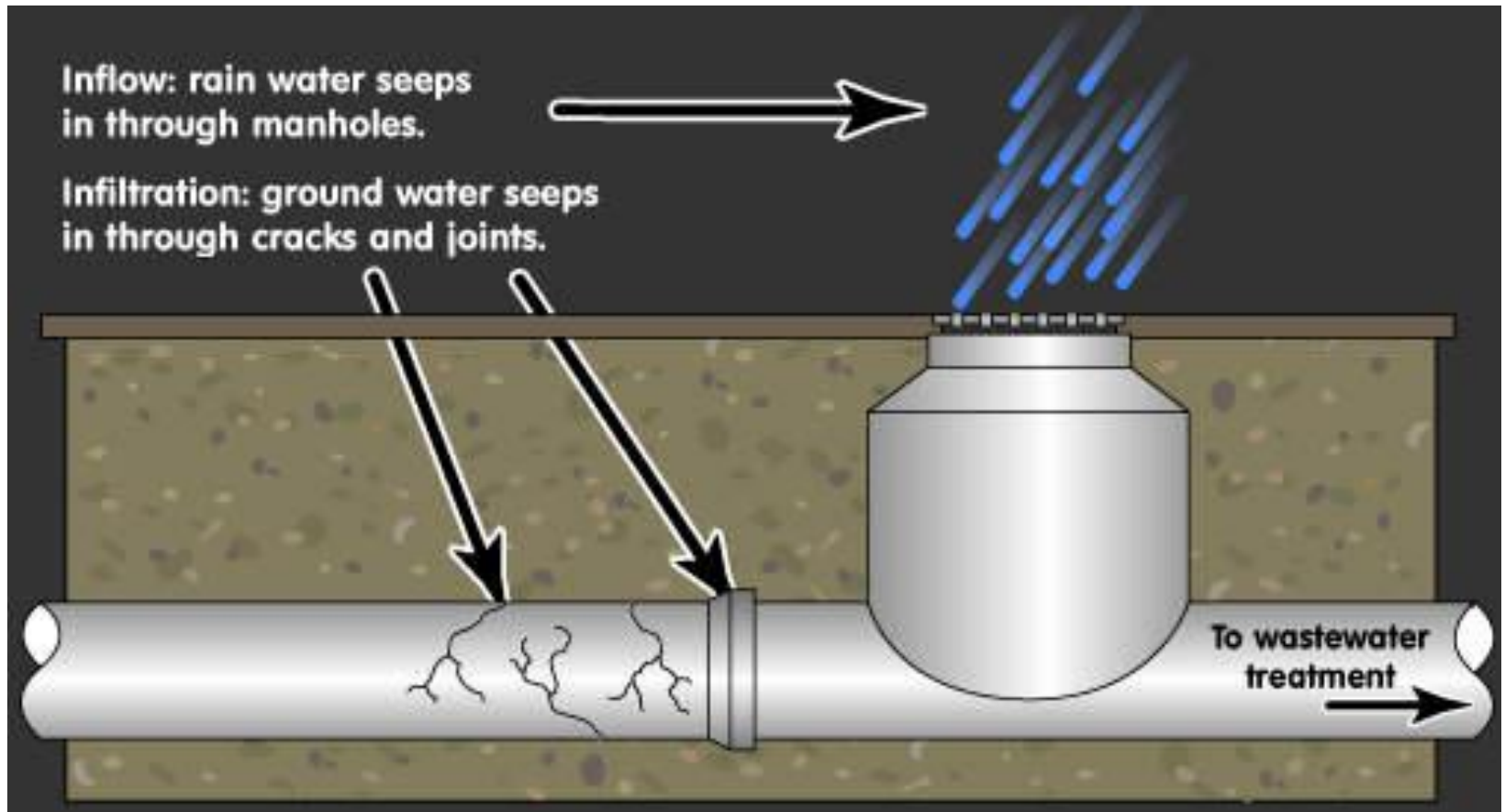
Approx. 40 Miles of Early Vintage Pipe

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?

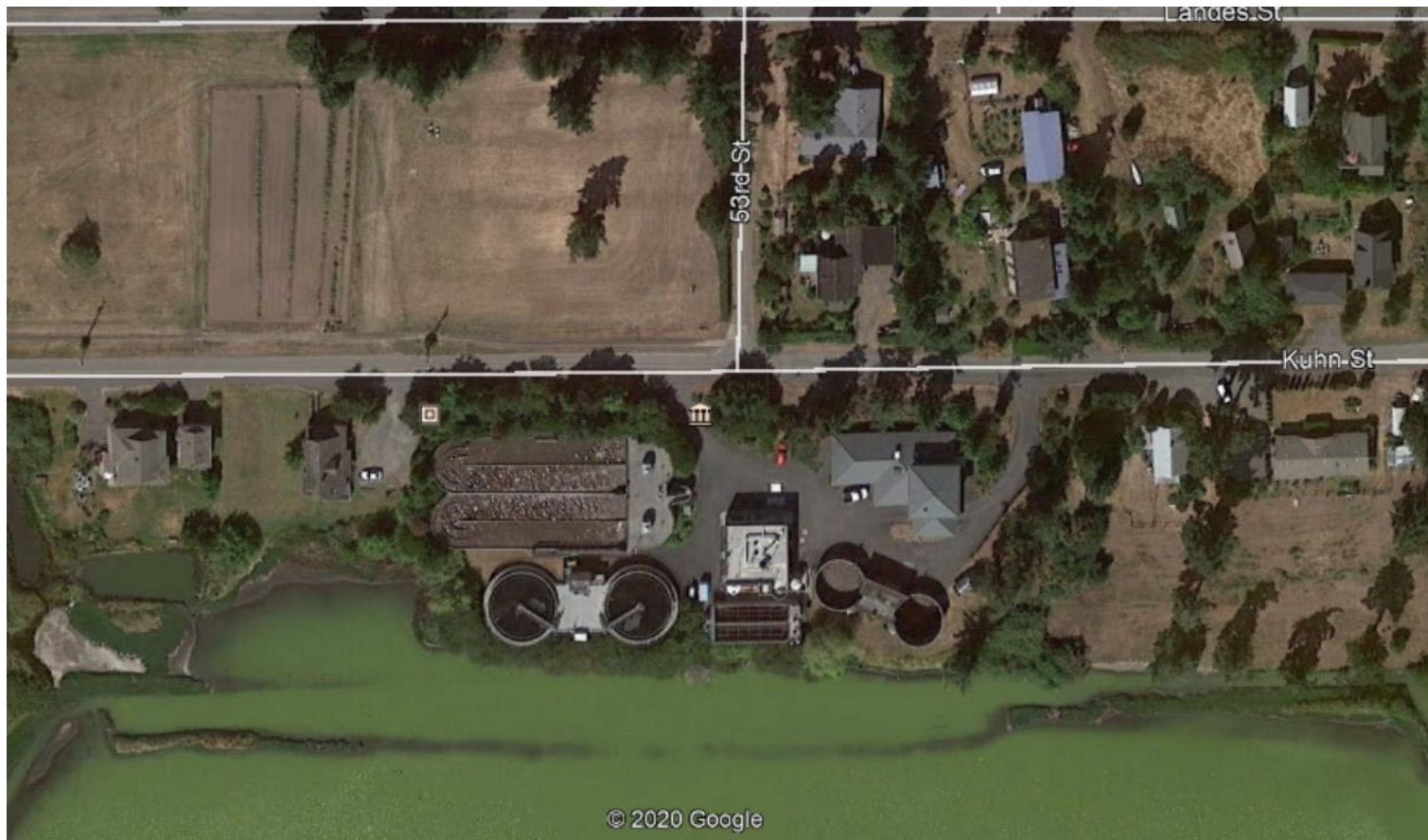


March 2016 – King Tide

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

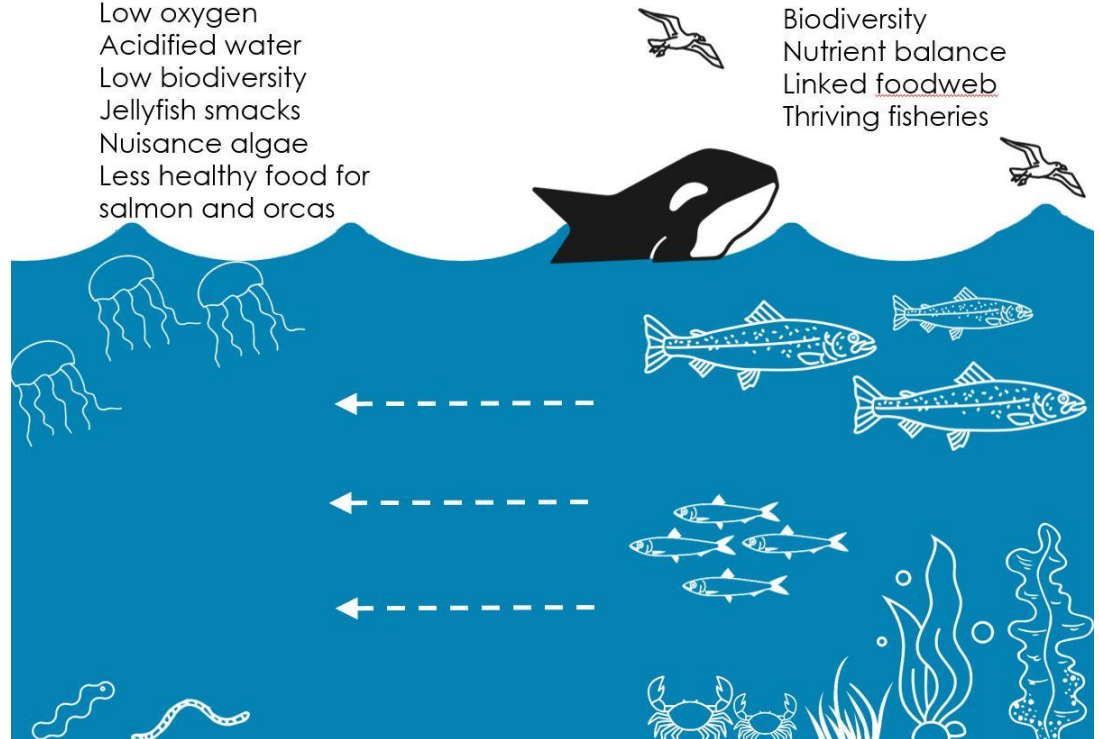


Unhealthy Puget Sound

- Low oxygen
- Acidified water
- Low biodiversity
- Jellyfish smacks
- Nuisance algae
- Less healthy food for salmon and orcas

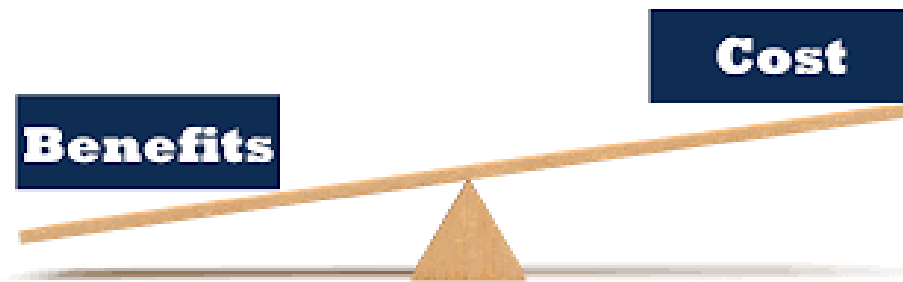
Healthy Puget Sound

- Biodiversity
- Nutrient balance
- Linked foodweb
- Thriving fisheries



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
2. 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:

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

David Peterson, City Engineer – dpeterson@cityofpt.us

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

