Agenda

• Wastewater Comprehensive Plan Update
• Growth Impacts to Wastewater
Wastewater Comprehensive Plan Update
City of Tacoma | Environmental Services Department

Environmental Services Commission
November 9, 2023
Why we need a Plan:

- Aging Infrastructure
- Increased Population Growth
- Future Regulations
- Alignment with City Initiatives & ES Goals
  - ES Strategic Plan 2018-2025
  - Provide Equitable Service
  - City Climate Action Plan 2021
  - Tacoma 2025 Strategic Plan

Note: Not a regulatory required step at this time
Wastewater Existing Infrastructure

- 700 miles of Sanitary Sewer Collection Pipe
- 14,800 Service Manholes
- 50 Pump Stations
- 2 Wastewater Treatment Plants
  - Central Treatment Plant
    - Built 1952
  - North End Treatment Plant
    - Built 1968
    - Upgrade: 1998
• Align with broader City initiatives
• Identify Community Expectations
• Incorporate equity and social justice considerations
• Develop a transparent and consistent Capital Improvement Plan (CIP)
• Evaluate City’s financial capacity
WW Comprehensive Plan Approach

Step 1 // Determine Boundaries

- Develop Level of Service Framework
- Identify gaps in measuring and demonstrating success towards meeting Levels of Service

Step 2 // Develop and Assess Solutions

- Develop alternatives that meet the community’s expectations
- Quantify risks and benefits associated with meeting Levels of Service, use as criteria to select an alternative
- Assess Alternatives
- Develop Risk, Benefits, Costs
- Select Alternative

Step 3 // Prioritize and Implement Framework

- Refine internal metrics that Environmental Services will use for the lifecycle of the Plan
- Consistent Method for Prioritization
  - Define System Constraints
  - Evaluate Potential Projects
  - Prioritize Projects
Step 1 // Determine Boundaries

**Financial Capacity**
- Reviewed existing financial capacity information

**Asset Performance**
- Reviewed existing Asset Management program and practices
- Completed condition assessment of select assets

**External Drivers**
- Updated population, flow, and load projections
- Completed capacity assessments for CTP and NETP

**Community Expectations**
- See next slides

**Goal Development**
- See next slides
Key Stakeholders and Tribal Nations

External
- Department of Ecology
- Port of Tacoma
- Environmental Organizations
  - Puget Sound Keepers
  - Washington Environmental Council
- Pierce County, Fircrest, Fife, Ruston
- Eastside Collaborative
- South End Community of Focus
- Hilltop Action Coalition
- Centro Latino
- Asian Pacific Cultural Center
- Korean Women’s Association
- Tacoma Urban League

Internal
- Environmental Services Commission
- Community and Economic Development
- Sustainable Tacoma Commission
- Tacoma Public Utilities
- Planning Commission
- Infrastructure, Planning and Sustainability Committee
- Environmental Services Director
- City Council

Tribal Nations
- Puyallup Tribe
Desire education and transparency around who pays for what

Desire continued engagement and coordination moving forward

Concerned about affordability and the combined cost of everything

Stakeholders are split on going above and beyond with respect to meeting regulations
  • Most are supportive conceptually and some consider it essential
  • Most suggest pursuing a cost-benefit approach that doesn’t overwhelm ratepayers
Environmental services is rated average and above at:
- Serving customers’ households (90%)
- Providing customer service (89%)
- Service businesses (97%)

How would you rate Environmental Services on each of the following?*

- Serving your household: 48% Excellent, 24% Above average, 18% Average, 6% Below average, 2% Poor
- Serving your business: 57% Excellent, 23% Above average, 17% Average, 8% Below average, 2% Poor
- Customer service: 50% Excellent, 25% Above average, 14% Average, 8% Below average, 3% Poor

* wastewater customers only
Overall Community Priorities

<table>
<thead>
<tr>
<th>Percentage of Respondents Ranking Item in their Top 3 for Overall Community Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>Prevent Crime</td>
</tr>
<tr>
<td>Reduce Cost of Living</td>
</tr>
<tr>
<td>Expand Affordable Housing</td>
</tr>
<tr>
<td>Expand Job and Wage Growth</td>
</tr>
<tr>
<td>Strengthen Education</td>
</tr>
<tr>
<td>Improve Public Health</td>
</tr>
<tr>
<td>Protect Puget Sound and Local Waterways</td>
</tr>
<tr>
<td>Expand Arts, Culture, and Recreation</td>
</tr>
</tbody>
</table>
Top Priorities for Wastewater:

- **Affordability** and maintaining low rates
- **Reliability** and replacing aging sewers

### Community Feedback

#### Percentage of Respondents Ranking Item in the Top 2 of Service Priorities

<table>
<thead>
<tr>
<th>Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability of Services</td>
<td>69%</td>
</tr>
<tr>
<td>Reliability of Services</td>
<td>62%</td>
</tr>
<tr>
<td>Maximizing Environmental Health</td>
<td>37%</td>
</tr>
<tr>
<td>Increase Capacity to keep up with Growth</td>
<td>28%</td>
</tr>
<tr>
<td>Improve Customer Service &amp; Communications</td>
<td>5%</td>
</tr>
</tbody>
</table>
How do you describe Environmental Services' wastewater utility rates?

Note: Those with an income of $75,000 and more find the rates to be more manageable.
• Stakeholders are split on going above and beyond with respect to meeting regulations.

• When asked how much respondents would be willing to pay extra per month to improve the environmental health of Puget Sound:

- No Increase (34)
- 1 to 2 Dollars (17)
- 3 to 5 Dollars (21)
- 6 to 10 Dollars (13)
- 11 to 15 Dollars (3)
- 16 to 20 Dollars (6)
- More than 20 Dollars (6)

• Respondents broadly support (78%) developers paying for costs to expand infrastructure due to growth
Levels of Service Development

Environmental Protection
Maintaining system reliability, protecting water quality

Customer Satisfaction
Educating the public and engaging in utility planning

Collaboration and Partnerships
In project delivery, through utility planning, and by continuing to coordinate with other utilities and projects

Community and Economic Development
Keeping rates affordable

System Reliability and Business Efficiency
Maintaining system reliability, keeping rates affordable

Employee Relations and Labor Partners
Aligning with broader ES Goals
Next Steps

Step 1 // Determine Boundaries

Step 2 // Develop and Assess Solutions

Community Expectations
- Additional one-on-one interviews
- Define community education and engagement strategies that are aligned with level of service categories and community feedback

Goal Development
- Identify gaps in measuring and demonstrating success towards meeting Level of Service goals
Next Steps

**Financial Capacity**
- Evaluating strategies to fund renewal and replacement needs

**Asset Performance**
- Establishing the Facilities long-term CIP based on age, next phase condition assessments

**External Drivers**
- Comprehensive Solids Planning for Central Treatment Plant
Growth Impacts to Wastewater

City of Tacoma | Environmental Services Department
AHAS Objectives

Objective 1:
More homes for more people

Objective 2:
Keep housing affordable and in good repair

Objective 3:
Help people stay in their homes and communities

Objective 4:
Reduce barriers for people who often encounter them

Home In Tacoma
Updating Tacoma’s housing rules to promote housing supply, choice and affordability

- Residential zoning and standards
- Affordable housing regulatory tools
- Actions to support growth
Tacoma’s housing rules are changing

About ¾ of our housing land supply is zoned single-family
Tacoma’s housing growth strategy

Examples of middle housing supported by Tacoma’s growth strategy

Low-scale housing
- House & ADU(s)
- Duplex, triplex
- Small lot house
- Cottage housing

Low-scale housing (in some circumstances)
- Fourplex
- Small multifamily

Mid-scale housing
- Rowhouses
- Medium multifamily
Home in Tacoma Consultants provided 30-Year growth projections.

<table>
<thead>
<tr>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Changes</td>
<td>Lower End Density</td>
<td>Higher End Density</td>
</tr>
<tr>
<td>6 - 35 DU/acre</td>
<td>35 – 52 DU/acre</td>
<td>70 – 87 DU/acre</td>
</tr>
</tbody>
</table>
Wastewater Collection

• Methodology
  • Trunk system - Modeled using the 30-yr and 100-yr growth per parcel for each alternative
  • Conveyance system – Modeled using full build-out with the trunk systems upsized
  • I/I Considerations
Wastewater Collection

Sample Illustration of Backwater Effects in a Sewer

FIGURE 6.2

CITY OF TACOMA
CTP WW COLLECTION SYSTEM MODEL UPDATE AND CAPACITY EVALUATION
## Wastewater Collection Impacts

<table>
<thead>
<tr>
<th></th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30-year Growth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deficiencies</td>
<td>% of System</td>
<td>% of System</td>
<td>% of System</td>
</tr>
<tr>
<td>Gravity Trunk (LF)</td>
<td>36.30%</td>
<td>40.57%</td>
<td>41.78%</td>
</tr>
<tr>
<td>Gravity Conveyance (LF)</td>
<td>9.67%</td>
<td>10.48%</td>
<td>10.68%</td>
</tr>
<tr>
<td>Pump stations (Each)</td>
<td>42.00%</td>
<td>48.00%</td>
<td>48.00%</td>
</tr>
<tr>
<td><strong>100-year Growth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deficiencies</td>
<td>% of System</td>
<td>% of System</td>
<td>% of System</td>
</tr>
<tr>
<td>Gravity Trunk (LF)</td>
<td>40.25%</td>
<td>42.68%</td>
<td>47.12%</td>
</tr>
<tr>
<td>Gravity Conveyance (LF)</td>
<td>10.56%</td>
<td>10.83%</td>
<td>11.59%</td>
</tr>
<tr>
<td>Pump stations (Each)</td>
<td>46.00%</td>
<td>48.00%</td>
<td>54.00%</td>
</tr>
<tr>
<td><strong>Full Build-Out</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deficiencies</td>
<td>% of System</td>
<td>% of System</td>
<td>% of System</td>
</tr>
<tr>
<td>Gravity Trunk (LF)</td>
<td>Trunks are all upsized to eliminate a backup in the system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravity Conveyance (LF)</td>
<td>4.96%</td>
<td>6.62%</td>
<td>8.10%</td>
</tr>
<tr>
<td>Pump stations (Each)</td>
<td>54.00%</td>
<td>62.00%</td>
<td>66.00%</td>
</tr>
</tbody>
</table>
Wastewater Treatment

Methodology

- WW Comp Plan 2040 Growth Projections

- Updated to 2050 Projections

- Added Home in Tacoma Scenarios
## Wastewater Treatment Impacts

<table>
<thead>
<tr>
<th>Scenario 30yr</th>
<th>Central Treatment Plant</th>
<th>North End Treatment Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Permit</td>
<td>Alternative 1</td>
</tr>
<tr>
<td>Average flow for the maximum month (mgd)</td>
<td>60</td>
<td>&lt; 85%</td>
</tr>
<tr>
<td>BOD influent loading for maximum month (lb/d)</td>
<td>127,000</td>
<td>&lt; 85%</td>
</tr>
<tr>
<td>TSS influent loading for maximum month (lb/d)</td>
<td>114,000</td>
<td>&gt; 85%</td>
</tr>
</tbody>
</table>
Wastewater – Mitigation Options

- Increase funding for mitigation strategies
  - System development charges
- Update policies and design standards
- Increase in flow monitoring of the system to track capacity challenges
- Monitoring where development is occurring
- Temporary pause to development for areas with capacity challenges, there will be competition on where to spend available funds, high risk assets or capacity improvements
- Update ILAs with neighboring jurisdictions to increase capacity supplied and required for others
Thank you

Questions?