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

Wastewater Comprehensive Plan

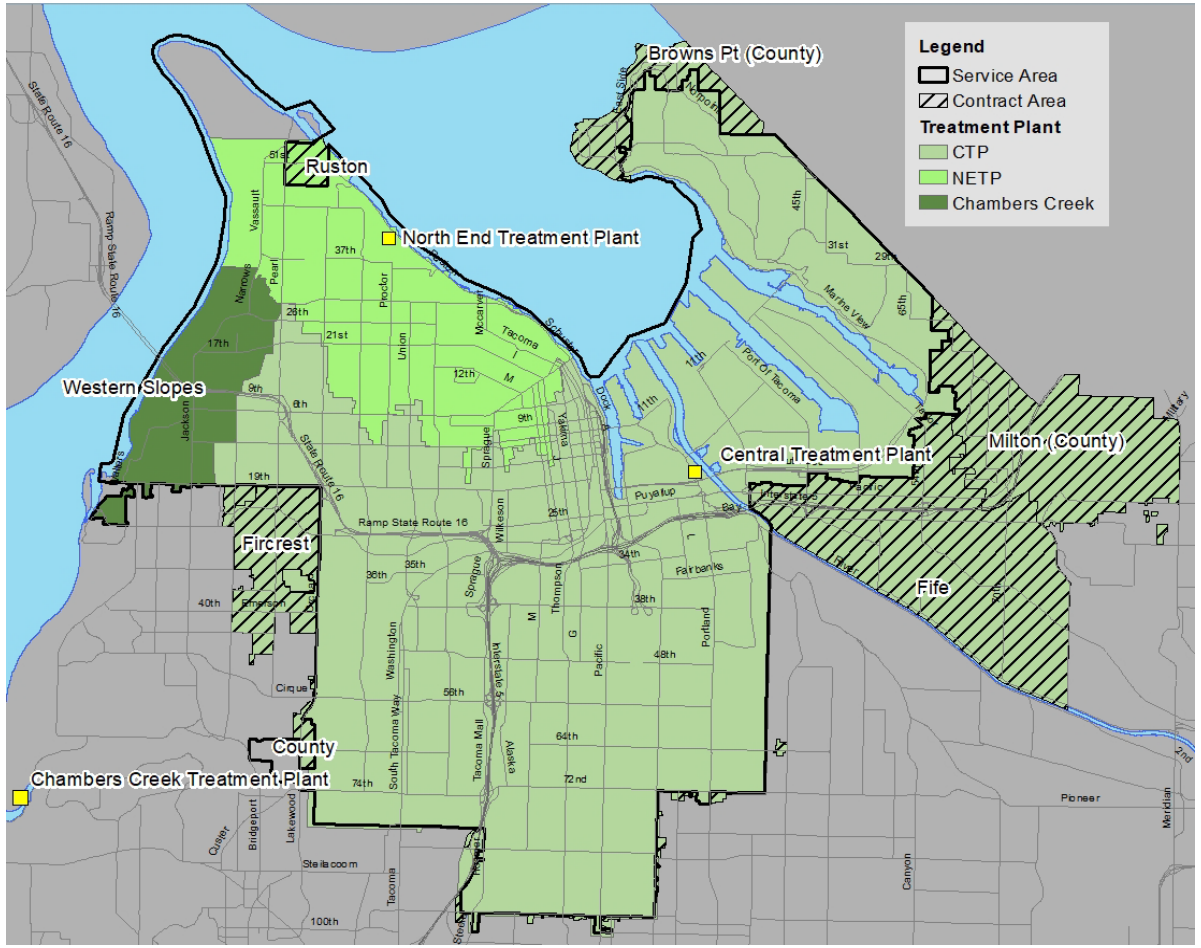
Why we need a Plan:

- 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
    - Upgrade Phases: 1979, 1988, 2008
  - North End Treatment Plant
    - Built 1968
    - Upgrade: 1998



Goals for the Plan

- 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

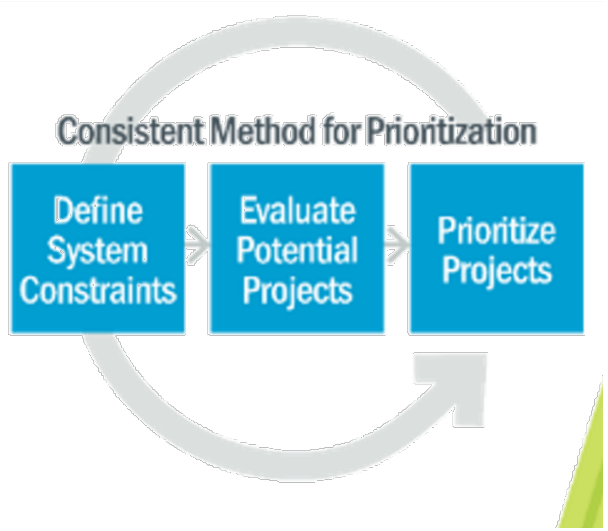
Step 1 // Determine Boundaries

- 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

Step 3 // Prioritize and Implement Framework



- Refine internal metrics that Environmental Services will use for the lifecycle of the Plan

Work Completed to Date

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

Targeted Stakeholder Interviews

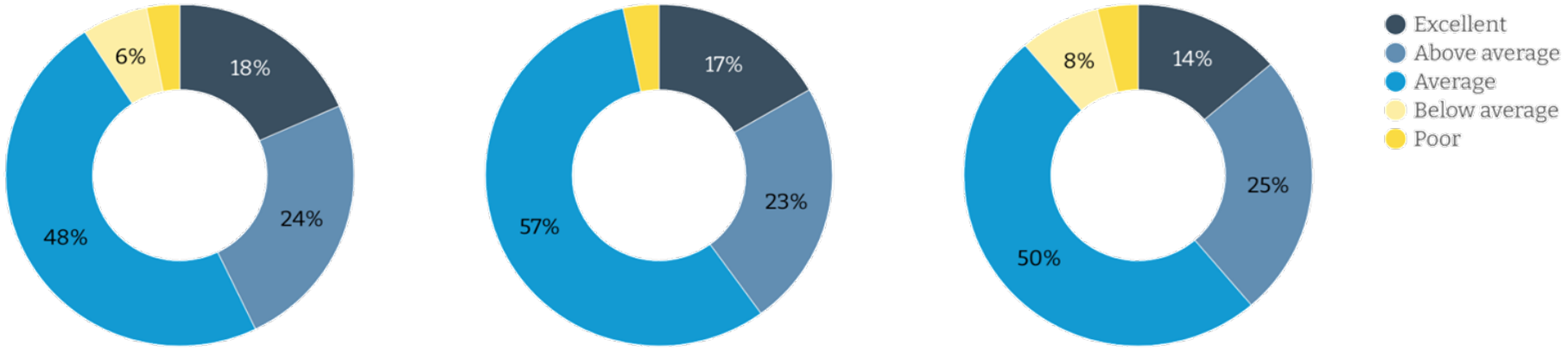
- Desire education and transparency around who pays for what
- Desire continued engagement and coordination moving forward
- Concerned about affordability and the combined cost of everything
- Stakeholders are split on going above and beyond with respect to meeting regulations
  - Most are supportive conceptually and some consider it essential
  - Most suggest pursuing a cost-benefit approach that doesn't overwhelm ratepayers

Online Broad Community Survey

- Environmental services is rated average and above at:
  - Serving customers' households (90%)
  - Providing customer service (89%)
  - Service businesses (97%)

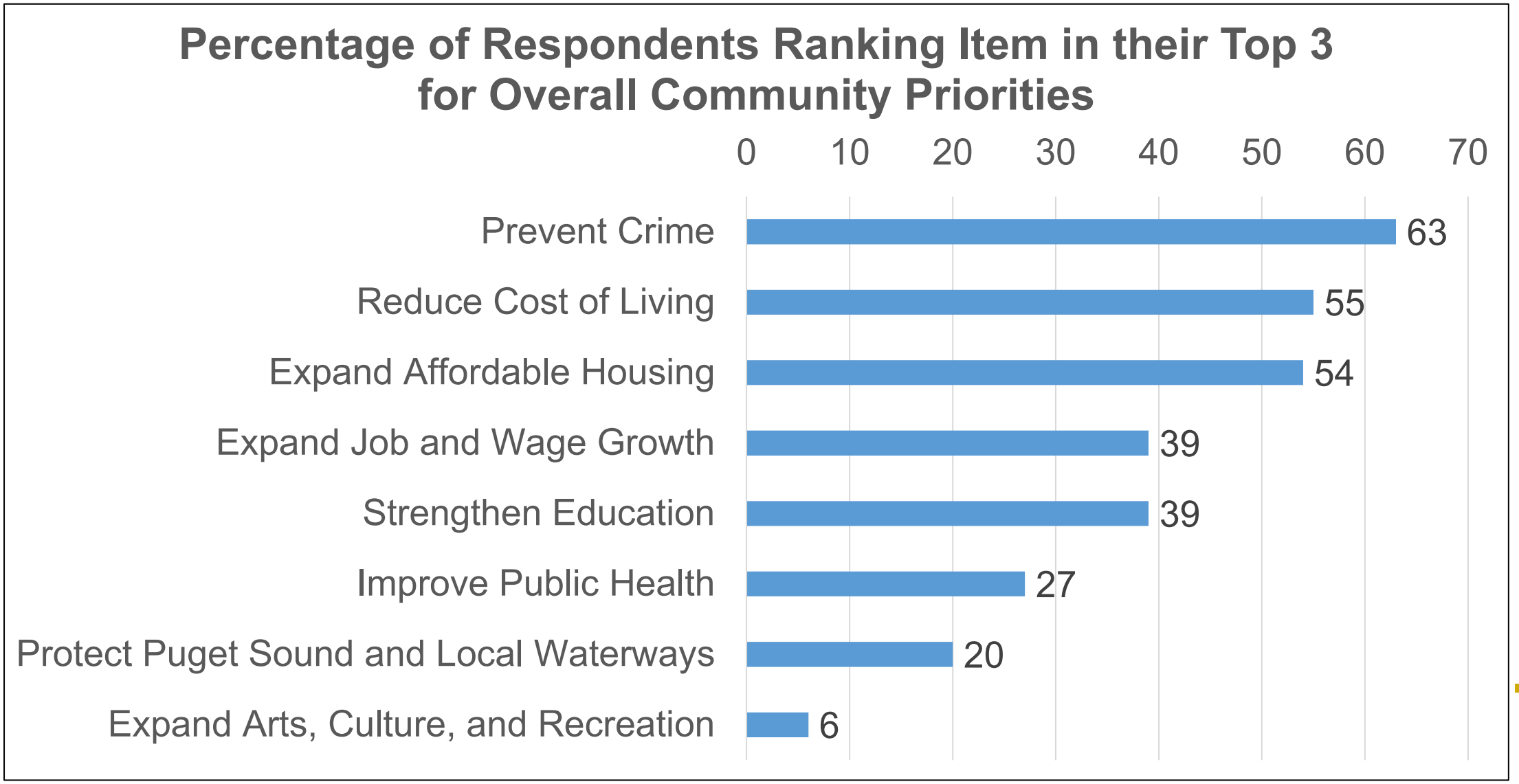
How would you rate Environmental Services on each of the following?*

EMBOLDresearch



* wastewater customers only

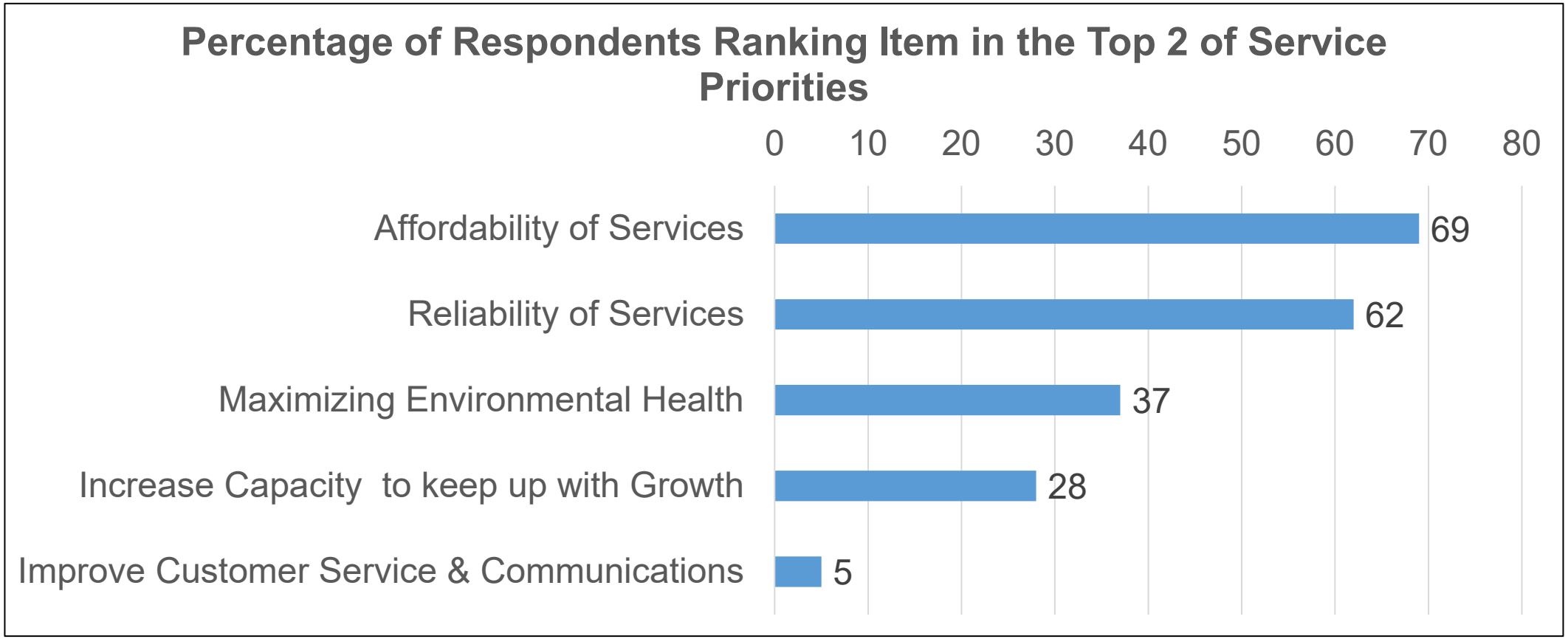
Overall Community Priorities



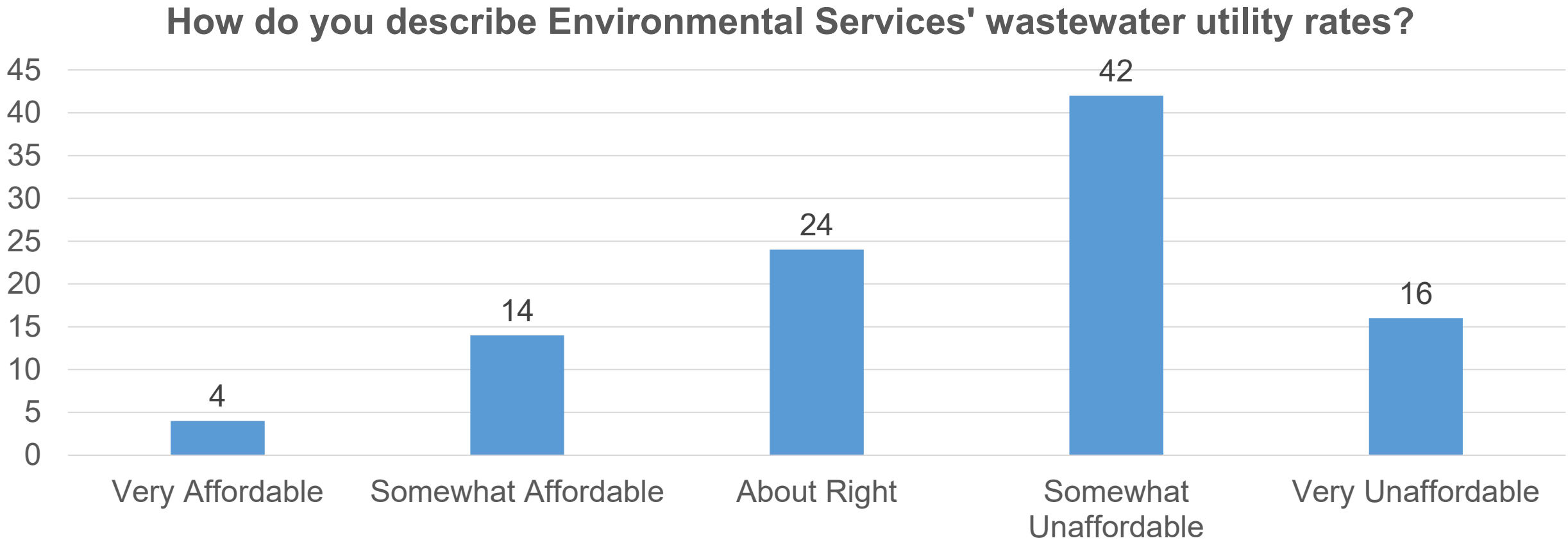
Community Feedback

Top Priorities for Wastewater:

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



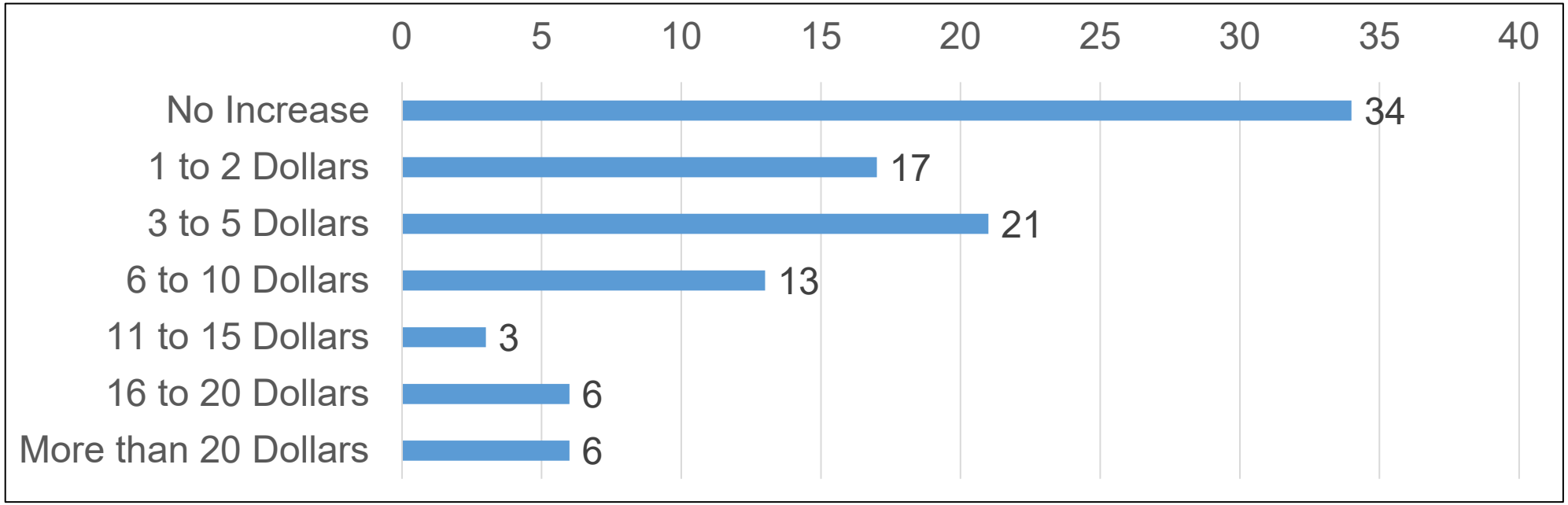
Community Perception of Rates



Note: Those with an income of $75,000 and more find the rates to be more manageable.

Other Community Feedback

- 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:



- 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

Step 1 // Determine Boundaries

Step 2 // Develop and Assess Solutions

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

Home in Tacoma as part of the Affordable Housing Action Strategy (AHAS)

[Home In Tacoma Introduction Video - YouTube]

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

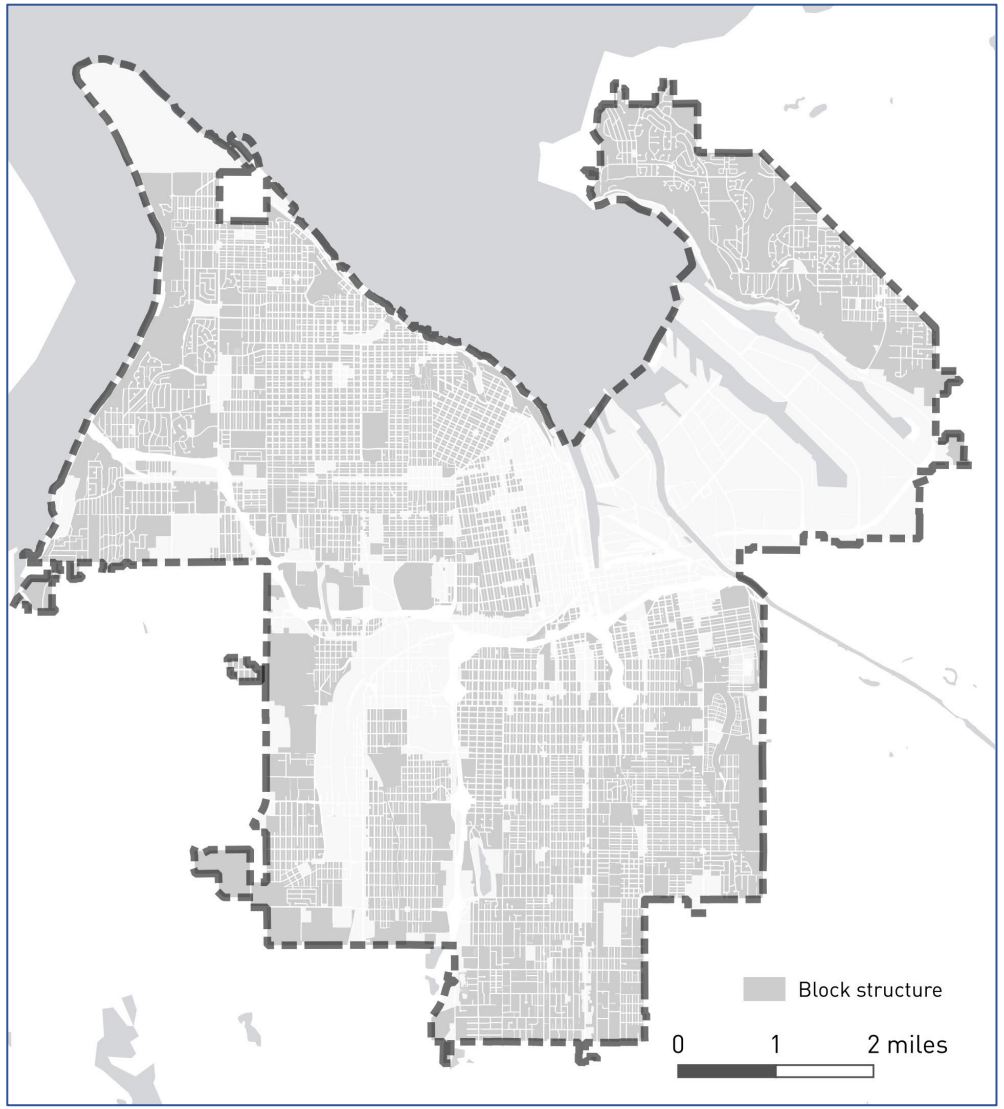
Objective 4:
Reduce barriers for people who often encounter them

Home In Tacoma

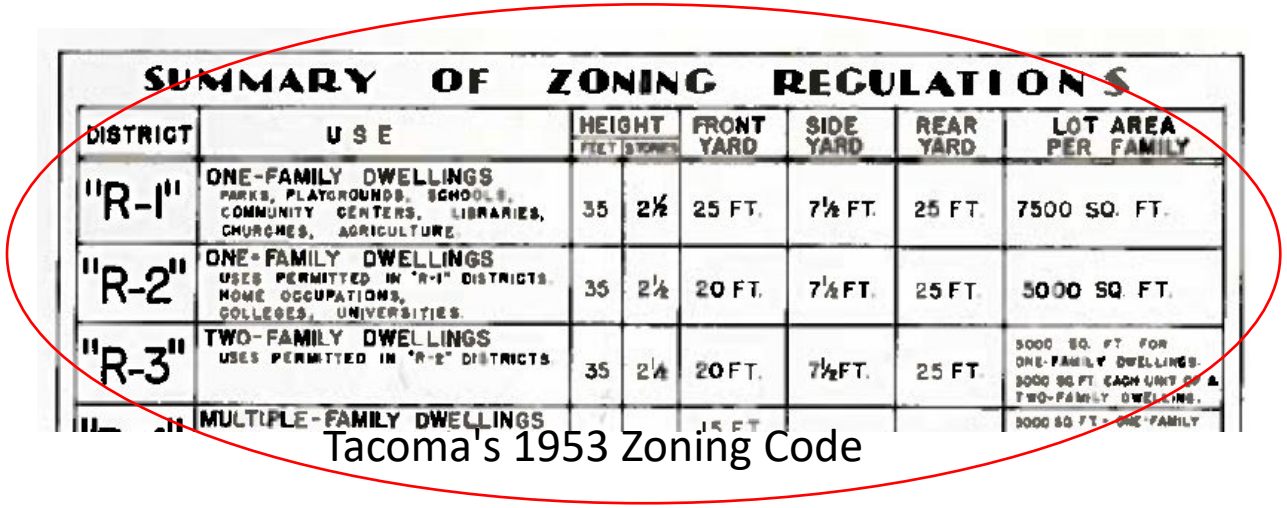
Updating Tacoma's housing rules to promote housing supply, choice and affordability

- 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

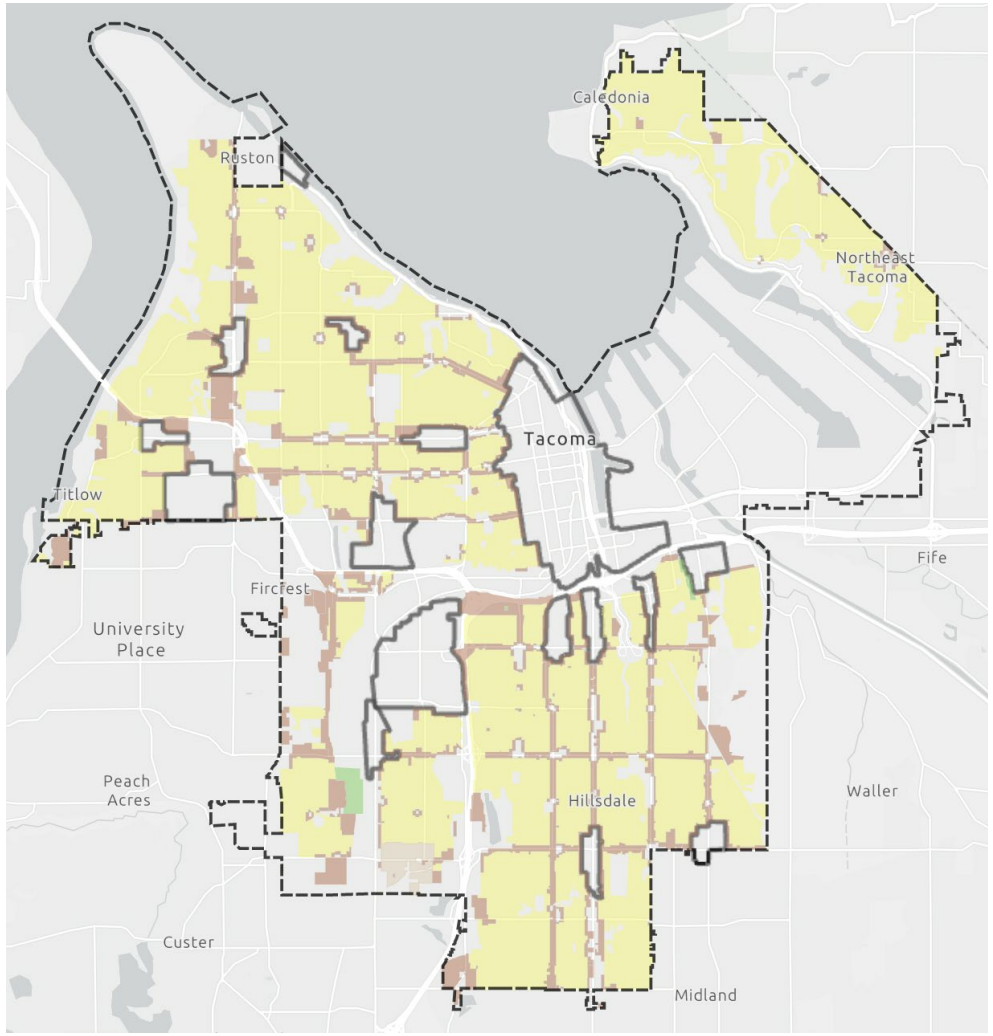


SUMMARY OF ZONING REGULATIONS

DISTRICT	USE	HEIGHT FEET	HEIGHT STORIES	FRONT YARD	SIDE YARD	REAR YARD	LOT AREA PER FAMILY
"R-1"	ONE-FAMILY DWELLINGS PARKS, PLAYGROUNDS, SCHOOLS, COMMUNITY CENTERS, LIBRARIES, CHURCHES, AGRICULTURE	35	2½	25 FT.	7½ FT.	25 FT.	7500 SQ. FT.
"R-2"	ONE-FAMILY DWELLINGS USES PERMITTED IN "R-1" DISTRICTS. HOME OCCUPATIONS, COLLEGES, UNIVERSITIES.	35	2½	20 FT.	7½ FT.	25 FT.	5000 SQ. FT.
"R-3"	TWO-FAMILY DWELLINGS USES PERMITTED IN "R-2" DISTRICTS.	35	2½	20 FT.	7½ FT.	25 FT.	5000 SQ. FT. FOR ONE-FAMILY DWELLINGS. 2500 SQ. FT. EACH UNIT OF A TWO-FAMILY DWELLING.
	MULTIPLE-FAMILY DWELLINGS						

Tacoma's 1953 Zoning Code

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

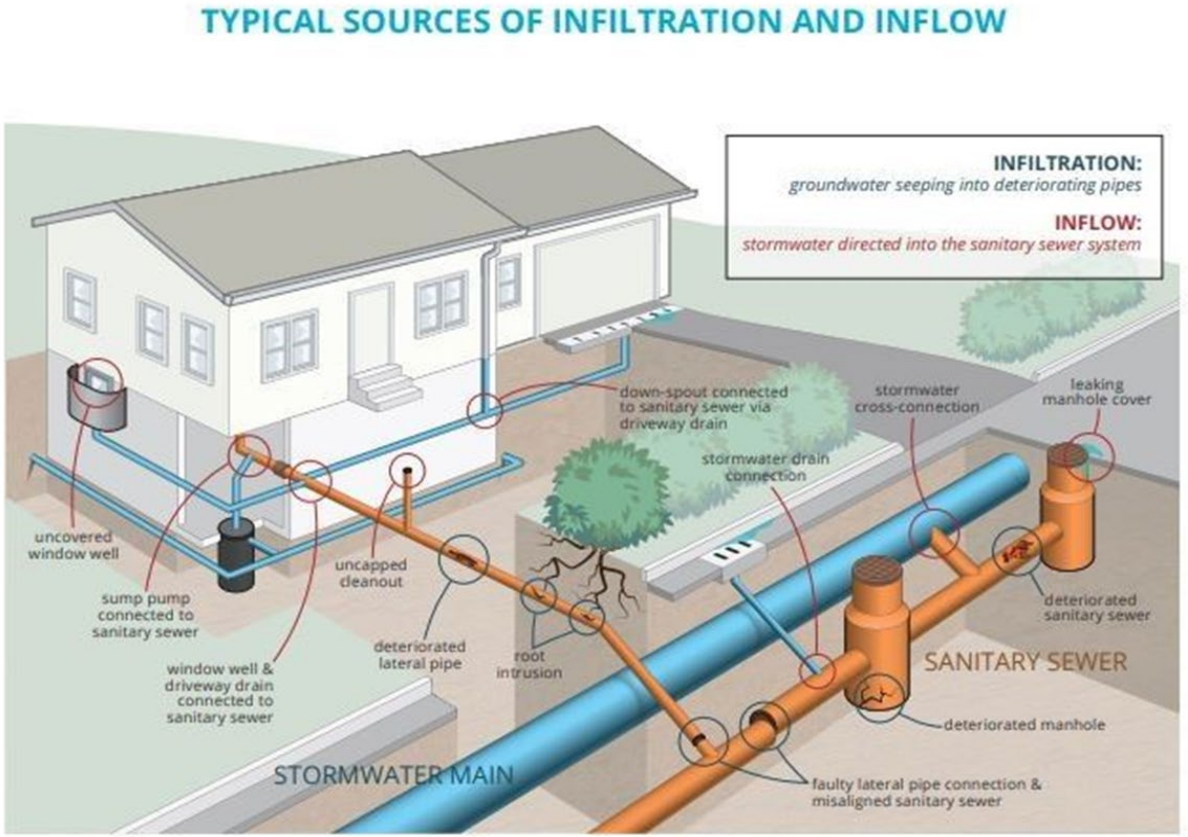
Utility Impacts - Background

Home in Tacoma Consultants provided 30-Year growth projections.

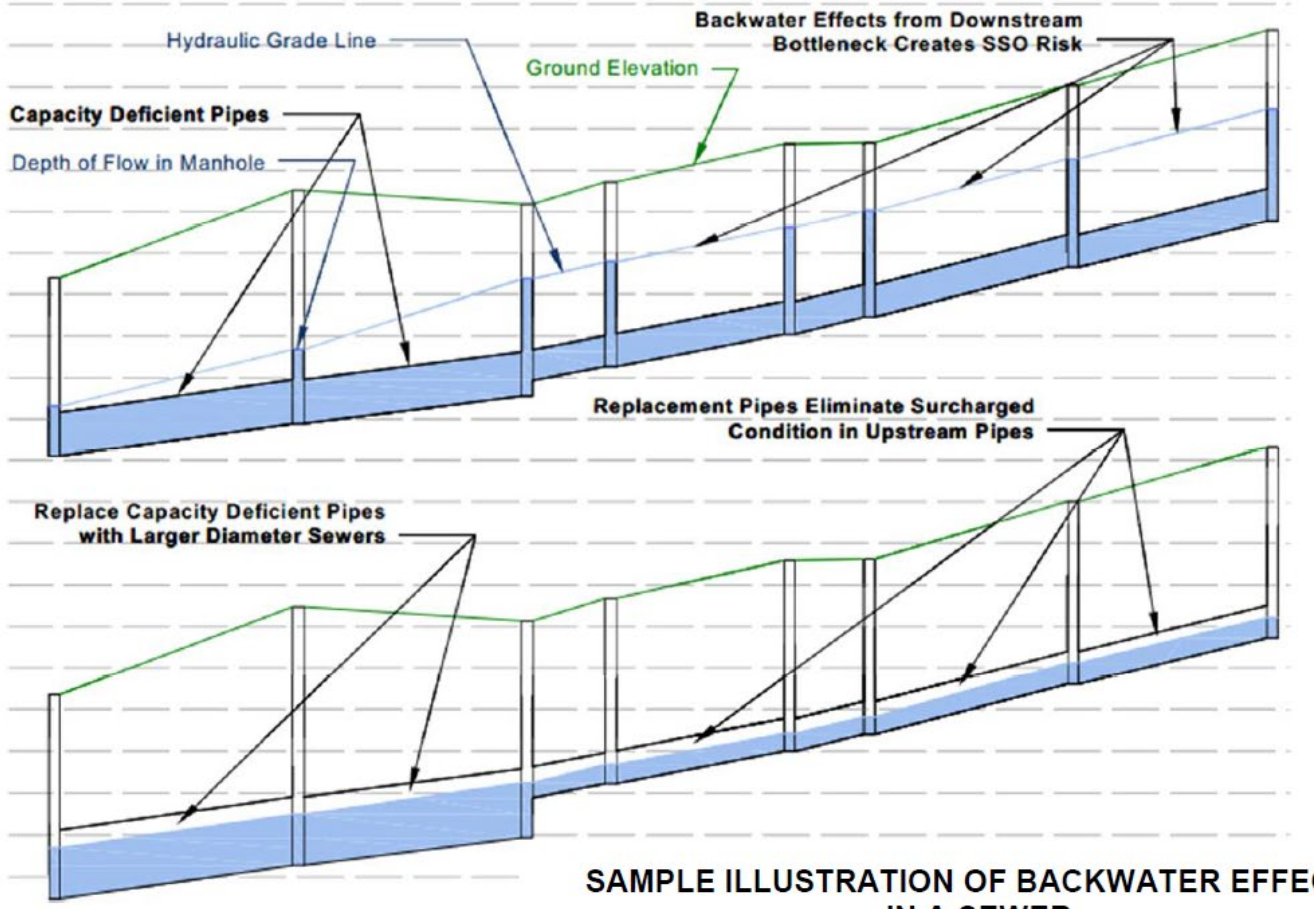
Alternative 1	Alternative 2	Alternative 3
No Changes	Lower End Density	Higher End Density
6 - 35 DU/acre	35 – 52 DU/acre	70 – 87 DU/acre

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

carollo

Wastewater Collection Impacts

30-year Growth	Alterative 1	Alterative 2	Alterative 3
Deficiencies	% of System	% of System	% of System
Gravity Trunk (LF)	36.30%	40.57%	41.78%
Gravity Conveyance (LF)	9.67%	10.48%	10.68%
Pump stations (Each)	42.00%	48.00%	48.00%

100-year Growth	Alterative 1	Alterative 2	Alterative 3
Deficiencies	% of System	% of System	% of System
Gravity Trunk (LF)	40.25%	42.68%	47.12%
Gravity Conveyance (LF)	10.56%	10.83%	11.59%
Pump stations (Each)	46.00%	48.00%	54.00%

Full Build-Out	Alterative 1	Alterative 2	Alterative 3
Deficiencies	% of System	% of System	% of System
Gravity Trunk (LF)	Trunks are all upsized to eliminate a backup in the system		
Gravity Conveyance (LF)	4.96%	6.62%	8.10%
Pump stations (Each)	54.00%	62.00%	66.00%

Wastewater Treatment

Methodology

WW Comp Plan 2040 Growth Projections

↓

Updated to 2050 Projections

↓

Added Home in Tacoma Scenarios

Wastewater Treatment Impacts

Scenario 30yr	Central Treatment Plant			
	Permit	Alternative 1	Alternative 2	Alternative 3
Average flow for the maximum month (mgd)	60	< 85%	< 85%	> 85%
BOD influent loading for maximum month (lb/d)	127,000	< 85%	< 85%	< 85%
TSS influent loading for maximum month (lb/d)	114,000	> 85%	> 85%	> 85%

Scenario 30yr	North End Treatment Plant			
	Proposed Re-Rate	Alternative 1	Alternative 2	Alternative 3
Average flow for the maximum month (mgd)	11.6	< 85%	< 85%	< 85%
BOD influent loading for maximum month (lb/d)	19,030	< 85%	< 85%	< 85%
TSS influent loading for maximum month (lb/d)	23,010	< 85%	< 85%	< 85%

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?