Agenda

- Wastewater Comprehensive Plan Update
- Stormwater Comprehensive Plan Update

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Wastewater Comprehensive Plan Update

City of Tacoma | Environmental Services Department

Infrastructure, Planning, and Sustainability
January 22, 2025
Teresa Peterson, P.E.

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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
  - One Tacoma Plan

Note: Not a regulatory required step at this time.

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WW Comprehensive Plan Approach

Step 1 // Determine Boundaries → Step 2 // Develop and Assess Solutions → Step 3 // Prioritize and Implement Framework

Multi Year Effort

- Establish Baseline Boundary Conditions

- Develop Alternatives that use Boundary Conditions
- Quantify Risks and Benefits

- Develop Framework
- Prioritize Projects
- Reevaluate

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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

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Stakeholder Interview Themes

- 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

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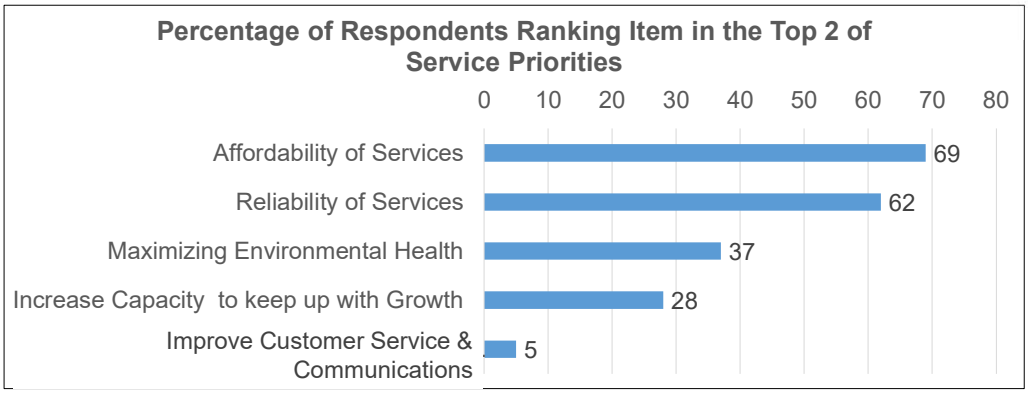
Community Feedback

Top Priorities for Wastewater:

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



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Next Steps – Community Expectations

Community Expectations

- Additional 1:1 interviews
- Community Survey

Communications

- Community Education Strategy
- Community Outreach

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Regulations

National Pollutant Elimination Discharge Permit

- North End Treatment Plant
- Central Treatment Plant

Puget Sound Nutrient General Permit

- Nutrient Reduction Evaluation
- Potential Future Effluent Limits for Nitrogen

Contaminants of Emerging Concern

- Example: PFAS/PFOA
  - Source Monitoring
  - No current limits

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Population Growth

Puget Sound Regional Council Vision 2050

By 2050, the Central Puget Sound Region will grow by another 1.6 M people.

Home in Tacoma

Increased Zoning Density

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Next Steps – External Drivers

Regulations

- Complete Nutrient Reduction Evaluation Report
- Complete PFAS Pilot Project

Population Growth

- Update models every five years with new population projections
- Update Interlocal Agreements

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Existing Infrastructure

- 700 Miles of Wastewater Sewer Pipes
- 44 Wastewater Pump Stations
- 2 Wastewater Treatment Plants
  - Central Treatment Plant
    - Built: 1952
    - Upgrade Phases: 1979, 1988, 2008
  - North End Treatment Plant
    - Built: 1968
    - Upgrade: 1998

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Asset Evaluation

Balancing Risks and Evaluating Performance:

Capacity Evaluation

- Modeling:
  - Piping
  - Pumps
- Flow and Loads:
  - Treatment Processes

Condition Assessment

- Age
- Inspections
- Data Evaluation
- Video

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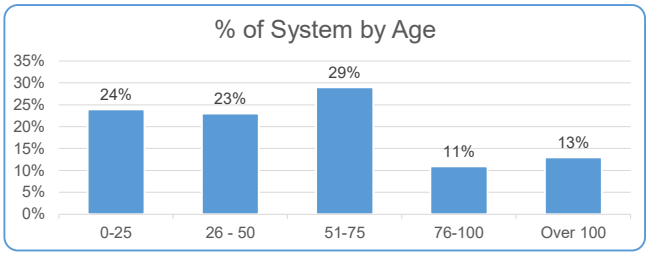
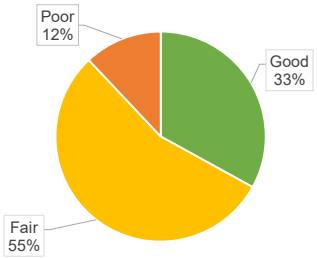
Collection System

- Aging Infrastructure
- Service Life is Material Based (50-100 years)
- Ongoing Inspection Program: 8-10 year cycle to clean and inspect entire system
- Some lines require more frequent cleaning
- 98% of the entire system has been inspected





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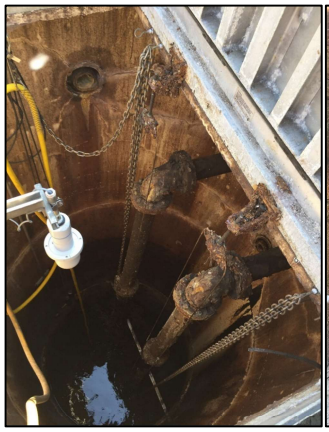
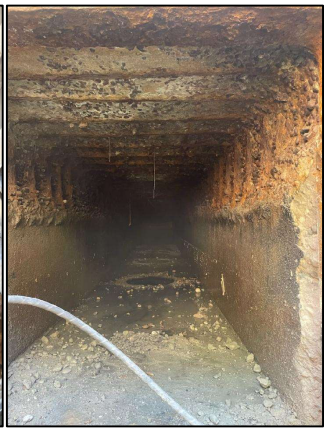
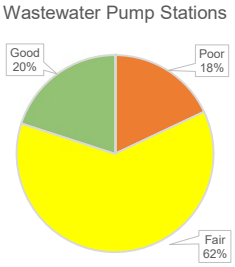
Pump Stations



Pick's Cove Pump Station Wet Well



South Tacoma Pump Station Effluent Channel



- Aging Infrastructure
- Population Growth Impacts for Capacity
- Internal Maintenance for Smaller Upgrades
- Capital Improvement Plan for Larger Upgrades

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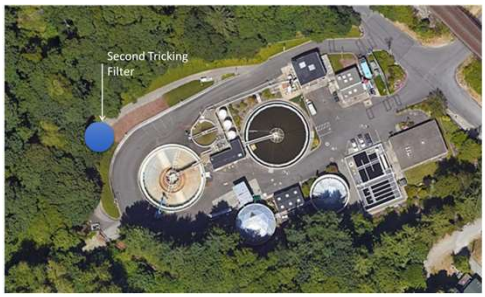
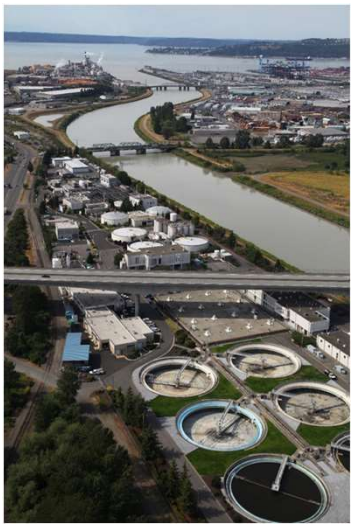
Treatment Plants

- Thousands of Assets at Treatment Plants
- Developing Condition Assessments
- Evaluate Capacity: Hydraulic and Treatment
- Recently Completed:
  - Flow and Loads Evaluations
  - Solids Assessment for Expanding Capacity
- Solids from NETP are taken to CTP for processing





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Next Steps – Asset Performance

Collection System
- Continue to Conduct TV Assessments of Collection System
- Modeling of Collection System to understand impacts of growth

Pump Stations
- Continue routine inspections
- Included in Modeling to understand impacts of growth

Treatment Plants
- Planning Level Evaluation for Solids Assessment Project
- Re-evaluating Flows and Loads every 5 years
- Condition Assessments of Aging Infrastructure

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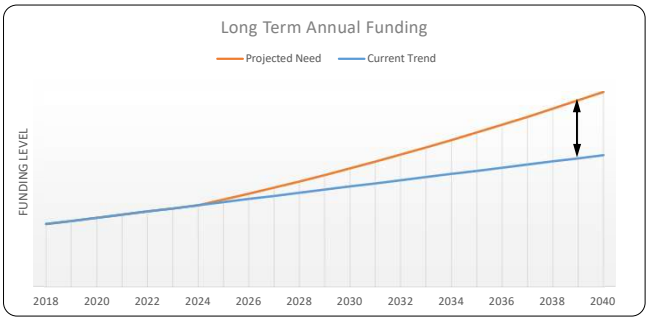
Long Range Funding Needs

What we know:
- Thousands of Existing Assets
- Aging Infrastructure
- Construction Costs Increasing

Questions:
- How do we know if we are adequately funding the renewal/replacement of our existing assets now and into the future?
- What risk is there to the utility?
- What steps can we take now to better position the utilities to address future needs?



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Next Steps – Financial Capacity

Two Funding Needs:

- **Maintain Existing System:**
  - Develop models to evaluate long term funding needs for the renewal and replacement of existing assets
  - Develop strategies to increase rates in small incremental steps over time to reduce impact to rate payers
- **Addressing Growth Impacts:**
  - Evaluate New Sources of Revenue
    - System Development Charges for New Development and Redevelopment (Capacity)

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WW Comprehensive Plan Approach

Step 1 // Determine Boundaries → Step 2 // Develop and Assess Solutions → Step 3 // Prioritize and Implement Framework

Multi Year Effort

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- Develop Alternatives that use Boundary Conditions
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- Develop Framework
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- Reevaluate

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Thank you

Questions?

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Stormwater Comprehensive Plan Update

City of Tacoma | Environmental Services Department

Infrastructure, Planning, and Sustainability
January 22, 2025
Dana DeLeon, P.E.

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Stormwater Comprehensive Plan

Why we need a Plan:

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

Note: Not a regulatory required step at this time

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SW Comprehensive Plan Approach

Step 1 // Gather Current Program Information	Step 2 // Develop & Assess Solutions	Step 3 // Implement Plan & Recommendations
NPDES Staff Workshops SW Management & Urban Watersheds Protection Plans 2024-2029 NPDES Permit Climate Change Storm Analysis 2025-2026 Budget	2024-2029 NPDES Permit Requirements Climate Change Designs FTEs, Equipment, Funding Home-In-Tacoma	Stormwater Comp Plan Stormwater Management Plan CIP Projects Prioritization Urban Watershed Protection Plan
2024	**2025**	**Late 2025 – 2029+**
• Current stormwater systems & management plans.	• NPDES compliance: staffing, equipment, & funding • Climate change actions: sea level rise & increased storm intensities	• Meet NPDES requirements • Prioritize projects • Reevaluate

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Key Stakeholders - External

- Department of Ecology
- Environmental Protection Agency
- Puget Sound Partnership
- Port of Tacoma
- Tacoma/Pierce County Health Depart.
- Metro Parks Tacoma
- Tacoma School District
- Communities for a Healthy Bay
- Tacoma Tree Foundation
- Foster's Creative Ground to Sound Film Festive
- NPDES Phase 1 & 2 Permittees
- Puyallup River & Chambers-Clover Creek Watershed Councils
- 8 Tacoma One Workshops in 2024
- Golden Bamboo
- Eastside Collaborative
- East Tacoma Community Leaders
- Hilltop Action Coalition
- Korean Women's Association

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Key Stakeholders and Tribal Nations

Internal

- City Council
- Infrastructure, Planning and Sustainability Committee
- Environmental Services Commission
- Sustainable Tacoma Commission
- Planning Commission
- Tacoma Public Utilities
- Environmental Services Department
- Planning and Development Services Department
- Public Works
- Community and Economic Development
- Home-In-Tacoma Planning
- South Tacoma Groundwater Protection District Code Update

Tribal Nations

- Puyallup Tribe

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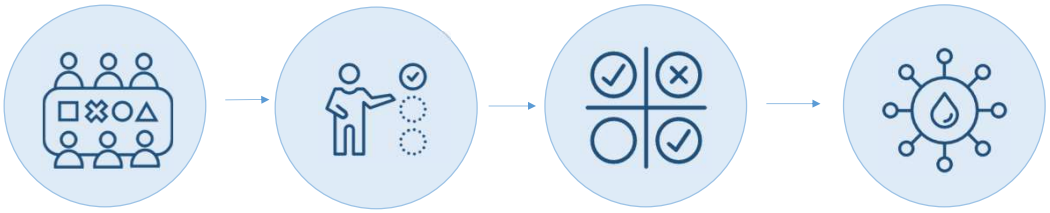
Community Shapes Priorities



2021 & 2025	2021, ‘24 & ‘25	2022, ‘24 & ‘25	2026 & Ongoing
Community workshops & Partner discussions	Online priorities survey and comment map	Feedback informed ranking matrix for prioritization tool	Input on neighborhood specific projects or programs

Outcome: Align stormwater solutions ➔ neighborhood needs 27

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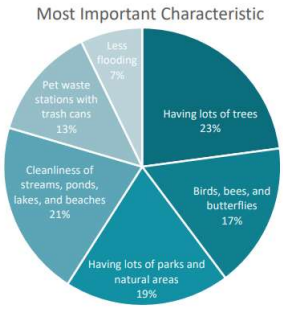
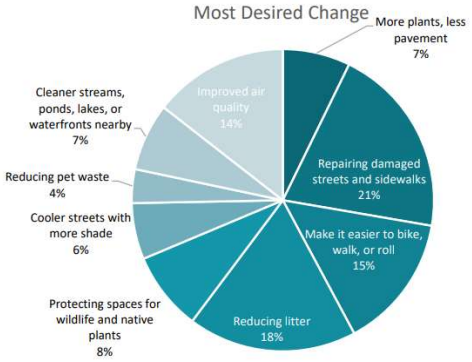
Community Feedback

- Characteristics important to communities:
  - Cleanliness of streams, ponds, lakes, beaches – 87%
  - Having lots of trees – 80%



- Desired Watershed Changes:
  - Repair damaged streets & sidewalks– 87%
  - Reduce Litter– 77%
  - Improve air quality – 66%



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Community Workshops & Online Survey

- Concerns:
  - Human activities & development impacts on Tacoma's natural spaces & Puget Sound
  - Reduced biodiversity & marine life
  - Lack of Mature Trees
- Improvements wanted:
  - Better litter & pet waste management
  - Road-related infrastructure: More walk- & bike-ability

Residents highest level of dissatisfaction were from predominately, moderate, low or very low opportunity zones: Foss Waterway, Lower Puyallup & lesser extent Flett Creek Watersheds

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Regulations & TMC Drivers

National Pollutant Elimination Discharge Permit

- 2024-2029 Municipal Phase 1 Stormwater NPDES Permit
- Draft EPA/Tribal Waters NPDES Permit (Targeted Issuance: June '25)
- Contaminants of Emerging Concern
- 6PPDQ (tire wear particles), PCBs & PFAS/PFOA

Tacoma Municipal Code – Home-In-Tacoma

- Increase Zoning Density
- Drives Conveyance Protection Strategies

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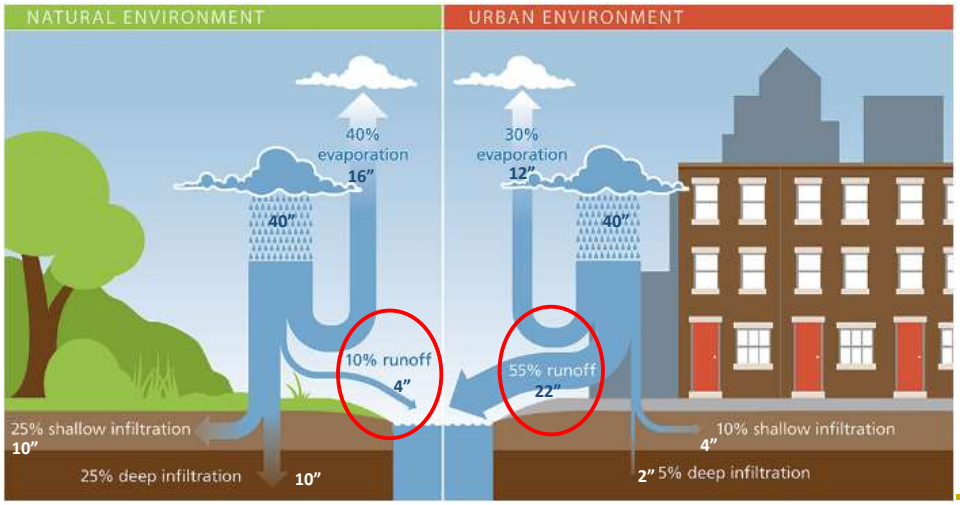
Water Cycle Urbanization & Growth



Ref: The Nature Conservancy in Washington, https://www.washingtonnature.org/fieldnotes/smart-stormwater-infrastructure 31

Stormwater => *precipitation (rain, snow, sleet) that does not soak into the ground. Stormwater runoff travels over surfaces such as lawns, pavement, sidewalks, vegetated areas and roofs.*

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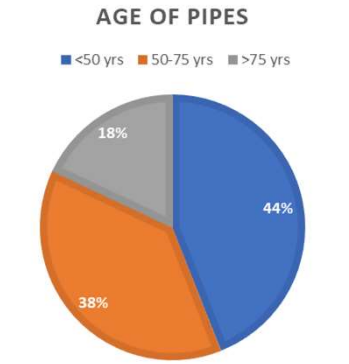
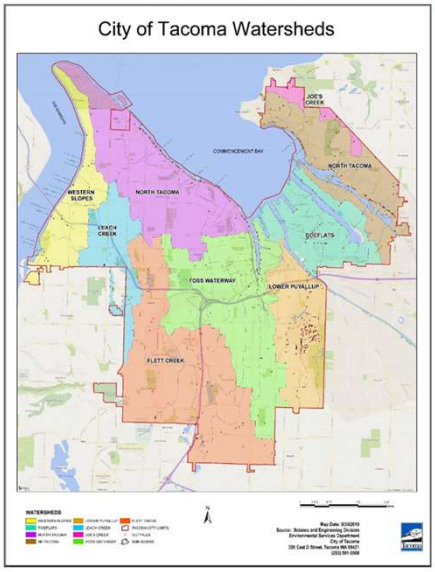
Stormwater Existing Infrastructure

- 562 miles of Stormwater Sewer Collection Pipe
- 18,840 Catch Basins
- 4 Pump Stations
- 4 Holding Basins
- 362 treatment devices
- ~ 10% of stormwater is treated





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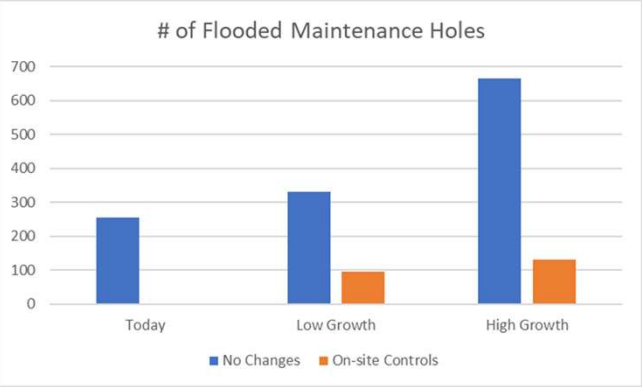
Stormwater Collection Impacts - HIT

- Foss OF237A/B Basin calibrated model
- Represents Tacoma's Zoning throughout the City
- Used HIT growth per parcel



Flooding Mitigation is needed to prevent impacts from projected growth

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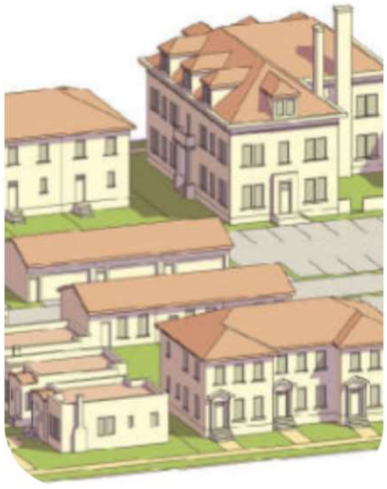
SW Manual Updates - Not Permit Mandated



To mitigate increased density (e.g. Home in Tacoma)

May include combinations of:

- Update design storms for climate change (pipe sizing & flow control design)
- Require on-site management (green stormwater features/detention vaults) to maintain existing runoff levels
- Expand fee-in-lieu program, more regional facilities for treatment & flow control
- System development charges, storm pipe upgrades or permeable pavement where no pipes exist

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Long Range Funding Needs

What we know:

- Climate Change Design Requirements
- Thousands of Aging Assets
- Construction Costs
- NPDES Stormwater Management for Existing Development (SMED) Requirements
- Impervious Surfaces & Stormwater Volumes

Questions:

- How do we know if we are adequately funding?
  - Renewal and replacement of existing assets
  - New stormwater treatment & flow control facilities
- What risk is there to the utility?
- What steps can we take now to better position the utilities to address future needs?

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Next Steps – Financial Capacity

Two Funding Needs:

- **Maintain Existing System:**
  - Develop models to evaluate long term funding needs for the renewal and replacement of existing assets (including increasing operation and maintenance costs for stormwater facilities)
  - Develop strategies to increase rates in small incremental steps over time to reduce impact to rate payers
- **Addressing Growth Impacts:**
  - Evaluate New Sources of Revenue:
    - System Development Charges for New Development and Redevelopment
    - Expand In-Lieu-of Program for stormwater facilities construction and, operation and maintenance.

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Thank you

Questions?

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