Re-envisioning Treatment and Flow Control in Tacoma — the Regional Approach

Washington State Municipal Stormwater Conference
November 6, 2014

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City of Tacoma
Environmental Services Department
Today’s Presentation

- Background
- Problem Statement
- Tacoma’s Revised Approach
- Existing and Planned Regional Facilities
- Next Steps
Background
Economy

- Incorporated in 1875
- Population 202,000 (2012)
  - 10 year growth 2.5% (2010)
  - Seattle area 13%
- Median income $48,000 (WA avg. $57,000)
- Unemployment 8.7%
- Typical commercial rental $20/sf
  - Vacancy 9.8% (13.1% before State Farm)
Hydrology

- 50 square miles
- 46% impervious
- 72% drains to flow control exempt receiving waters
- 500 miles of pipe
Foss Superfund Cleanup!!
Current Requirements

Phase I Municipal Stormwater Permit

National Pollutant Discharge Elimination System and
State Water Discharge Control Permit
for Decorative Fives
Large and Medium Municipal Separate Stormwater Systems

State of Washington
Department of Ecology
Olympia, Washington 98504

In compliance with the provisions of
The City of Tacoma, Storm Water Pollution Control
Chapter 9.06-80 Water Code of Washington
and The Federal Water Pollution Control Act
(40 United States Code) 1325 et seq.

Title 39 United States Code, Section 1325 et seq.

Grant D. Carter
Qualification Program Manager
Department of Ecology
Problem Statement

- **Current** - SWM Manual and on-site development / redevelopment requirements for flow control and treatment

- **Need** -
  - Treatment at levels that positively impact water quality in Tacoma’s most sensitive receiving waters
  - Flow reduction in two systems that are flood prone
Bigger will be “Better”
(lower unit cost)

- The economy of scale
- Cost advantages due to size or scale of operation
Regional Facilities can be Located and Sized to Create Positive Impact
Consider the Redevelopment Community

- Generally more complex to develop in highly urbanized areas
  - Limited space
  - Demolition costs
  - Aging infrastructure
- Rents are low in Tacoma compared to other urban areas
- Ease of development or more lucrative rents can drive development elsewhere
The Vision

- Using Economy of Scale to get best unit price
- Using regional locations to get best improvement to receiving waters
  - Location
  - Operation and maintenance
- Leverage development dollars by creating a credit system for MR #6 and #7 to sell to developers
  - Use $$ to build the next targeted BMP
TREATMENT MR#6

SWM Manual – On-site development / redevelopment requirements

**Added** – Build regional treatment for Tacoma’s most sensitive receiving waters

- Leverage regional treatment capacity to support development and redevelopment
- Collect developer “pay-in” to build subsequent regional facilities
FLOW CONTROL/REDUCTION MR#7

SWM Manual – On-site LID and detention ponds

**Added** – Reduce flows through retrofit projects

- Residential Rain Garden Program
- Converting to permeable surfaces
- Expand existing holding basin capacity
- Re-launch the “fee-in-lieu-of-detention” program to leverage development $$
Program Status

- Treatment Facilities are complete for projects tributary to Commencement Bay
- Flow Control and treatment projects are complete in Flett and another flow control project is under design.
- Identified opportunity for flow control in Leach Creek watershed.
- Awaiting Ecology comment prior to formal launch.
Future Project Prioritization

- Three “watersheds” (2 freshwater and 1 large saltwater).
- Urbanized – limited opportunities for facilities
  - Feasibility Analysis on potential sites
  - Project Prioritization of feasible sites
Feasibility Analysis

- Retrofit existing facilities (capacity, flow control, water quality)
- Site and Drainage Area Characteristics
- Size and Type of BMP feasible
- Social/Community Factors
- Other Factors:
  - Located in priority development area
  - Known capacity/source control issues
# Project Prioritization

<table>
<thead>
<tr>
<th>Factors</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic/cost Factors:</strong></td>
<td></td>
</tr>
<tr>
<td>Capital Cost</td>
<td>High -1, Medium -2, Low -3</td>
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<tr>
<td>Operation and maintenance costs</td>
<td>High -1, Medium -2, Low -3</td>
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<tr>
<td>Potential to replicate/leverage</td>
<td>Low -1, Medium -2, High -3</td>
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<tr>
<td>Hazards/risks to existing infrastructure</td>
<td>High -1, Medium -2, Low -3</td>
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<tr>
<td>Potential for multiple funding sources (City Surface Water fund and others, grants, other city funds, in-lieu of fees, partnerships)</td>
<td>Low -1, Medium -2, High -3</td>
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<tr>
<td><strong>Social/Community Factors:</strong></td>
<td></td>
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<tr>
<td>Multiple benefits potential (walkways, parking, parks, bike trails, other CIP projects)</td>
<td>Low -1, Medium -2, High -3</td>
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<tr>
<td>Conflicting uses (parking in ROW, etc.)</td>
<td>High -1, Medium -2, Low -3</td>
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<tr>
<td>Supports Community Goals or other plans (e.g., First Creek, Wapato, other Neighborhood groups, Metro Parks, etc.)</td>
<td>Low -1, Medium -2, High -3</td>
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<tr>
<td>Visibility &amp; Education Value</td>
<td>Low -1, Medium -2, High -3</td>
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<tr>
<td>Supports Health and Safety</td>
<td>Low -1, Medium -2, High -3</td>
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<tr>
<td><strong>Other Factors to consider:</strong></td>
<td></td>
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<tr>
<td>Fish bearing Stream</td>
<td>No -1, Yes -3</td>
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<tr>
<td>Tacoma Ground Water Protection District</td>
<td>No -1, Yes -3</td>
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<tr>
<td>Protection of cleanup sites (Thea Foss Waterway, Hylebos Waterway, ASARCO, South Tacoma Field)</td>
<td>No -1, Yes -3</td>
</tr>
<tr>
<td>303(d) listed waterbodies</td>
<td>No -1, Yes -3</td>
</tr>
<tr>
<td>Locally identified capacity or pollution problems</td>
<td>No -1, Yes -3</td>
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<tr>
<td>Located in a priority area (redevelopment plans, mixed use centers, watershed where other public and private projects are or will be constructed)</td>
<td>No -1, Yes -3</td>
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Regional Projects in Tacoma
Cheney Stadium

- Total 10 acres treated and infiltrated
- Tacoma’s first Greenroad – Clay Huntington Way
- Includes 360 trees and bioinfiltration
- $2.8 million construction cost
Expansion of Regional Detention

- $3 million grant funding received
- Add 30 ac-ft detention capacity to Flett Watershed
- Capacity will be sold and provide funding for the next facility expansion
Treatment Vault – 23rd and Ferry Streets

- Treatment retrofit for 50 acres of Foss Watershed
  - 226 canisters
  - $800k construction cost
  - Completed 2010
Pacific Avenue Streetscape

- Treatment retrofit for 5 acres of busy arterial street
  - 14 Rain Gardens + Silva Cells
  - $2.4 million construction cost
  - Artist included in design team to enrich the rain garden appearance
Hood Street Regional Treatment

- Treatment retrofit for 42 acres of Foss Watershed
  - Filterra media basin
  - $1.5 million construction cost
  - Completed 2014