

# Terminal 18 Stormwater Outfall Renewal and Replacement

## Marine Stormwater Utility



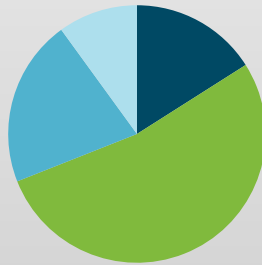
# Highlights

- **Marine Stormwater Utility formed in 2014 to protect water quality of the Puget Sound**
  - Won AAPA Comprehensive Environmental Management Award
  - Tenant fees about 15% lower compared to City's Utility fees
- **System assessment & rehabilitation**
  - Obtain baseline conditions of entire system, due to be completed end of 2019
  - A dozen urgent repairs completed preventing safety & operational hazard
- **Investments in the stormwater system**
  - Green Stormwater Infrastructure such as oyster shell barrels & rain garden
  - Installation of tide gates
- **Tenants expressed positive feedback on our efforts**

Highlights of work accomplished

# Utility Revenue & Goals

## Utility Revenue Breakdown



- NWSA
- NWSA tenants
- Port
- Port tenants

- Collected \$4.96 million in 2017, \$5.33 million in 2018

- Assess all 78 miles of infrastructure by 2019
- Invest in asset rehabilitation to improve water quality

Provide triple bottom line benefits

# Terminal 18 Stormwater

- Drainage area roughly 175 acres (nearly 9 Safeco Fields)
- Most site drainage enters Duwamish East Waterway through 13 Port-owned outfalls
- Outfalls were installed ~50 years ago



Largest active container terminal

# T-18 Stormwater System



East Waterway Outfall Locations



# Existing Outfall Conditions



Broken Pipes



Ponded water in the pipes



Missing tide gates

Visible conditions under the dock

# Current Assessment / Scope of Work

- Focus from last manhole to end of pipe
- Repair broken and cracked pipe
- Realign pipe grade or slope
- Install new tide gate valves



New tide gate installation

Current Conditions and Repair

# Project Schedule

- Commission Authorizations
  - Design & partial construction authorization - Q2 2017
  - Full Construction authorization - Q1 2018
- Construction Activities
  - Non-disruptive activities postponed until 2018
  - Repair and replacement construction phased between 2018 and 2020

Schedule phased over 4 years