



Stormwater Parks

Regional Retrofit Planning, Design, and Construction

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Paul Fendt, PE

Theo Prince, PE

Parametrix

PRESENTATION OVERVIEW

- 1 Why Stormwater Parks and Regional Facilities?
- 2 Standards and Approvals
- 3 Placemaking Case Studies
- 4 Design Case Study – Marysville
- 5 Design and Construction Challenges
- 6 Summary



WHY STORMWATER PARKS AND REGIONAL FACILITIES?

- **All-in-one stormwater retrofitting**
 - Provides treatment coverage for large areas in one action
- **Improve performance and maintenance**
 - Owned and operated by (usually) funded professionals
- **Facilitate redevelopment**
 - Attract development to growth and planning hubs
 - Reduces footprints and provides more infill space
- **Coordinated funding and resources**



STORMWATER MANAGEMENT AND PLACEMAKING

- Making spaces or working with existing open spaces
- Gaining community support for stormwater management
- Making usable and attractive spaces
- **Other objectives are met**
 - Growth management or transit-oriented redevelopment
 - Open space and parks plans



STANDARDS AND APPROVALS – POTENTIAL HEADWINDS

- **Retrofitting and Future Land Use**

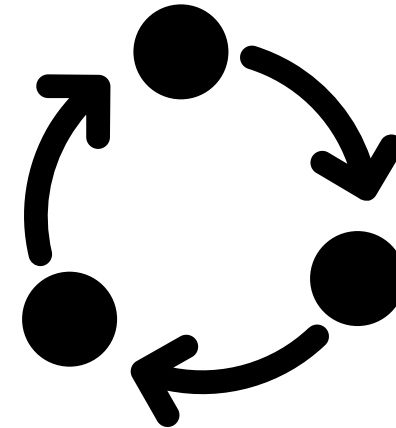
- Funding issues – Ecology grants can't pay for new development, so can it be used for redevelopment and infill retrofitting?

- **Grandfathering Performance**

- What happens if standards change?

- **Prospective Facilities**

- Up-front costs borne by community
- Buy-in requirements, funding, timing



STORMWATER MANAGEMENT AND PLACEMAKING CASE STUDIES



Manchester Park

Kitsap County, WA

PLACEMAKING CASE STUDIES - NEEDS



Manchester Park

SW Retrofitting
Community Gathering
Parking

PLACEMAKING CASE STUDIES - DESTINATION APPEAL



Manchester Park

Spiral Rain Garden

PLACEMAKING CASE STUDIES - AESTHETICS



Manchester Park

Seating and Lighting



PLACEMAKING CASE STUDIES – PART OF THE NEIGHBORHOOD



Whispering Firs

Silverdale, WA

PLACEMAKING CASE STUDIES



Whispering Firs

Passive Uses

Facilities as Amenities



PLACEMAKING CASE STUDIES



Whispering Firs
Educational Signage

SCALE: COMPARING SERVICE AND TREATMENT AREA

Point Defiance

325 ACRES | 12,800 SF



Manchester

100 ACRES | 6,800 SF



Marysville Downtown Stormwater Project

463 ACRES | 7,700 SF



Whispering Firs

113 ACRES | 14,200 SF



DESIGN CASE STUDY



Downtown Stormwater Treatment Project

Marysville, WA

DESIGN CASE STUDY



Marysville

Drainage Basin (460
Acres) and
Project Area

DESIGN CASE STUDY



Marysville

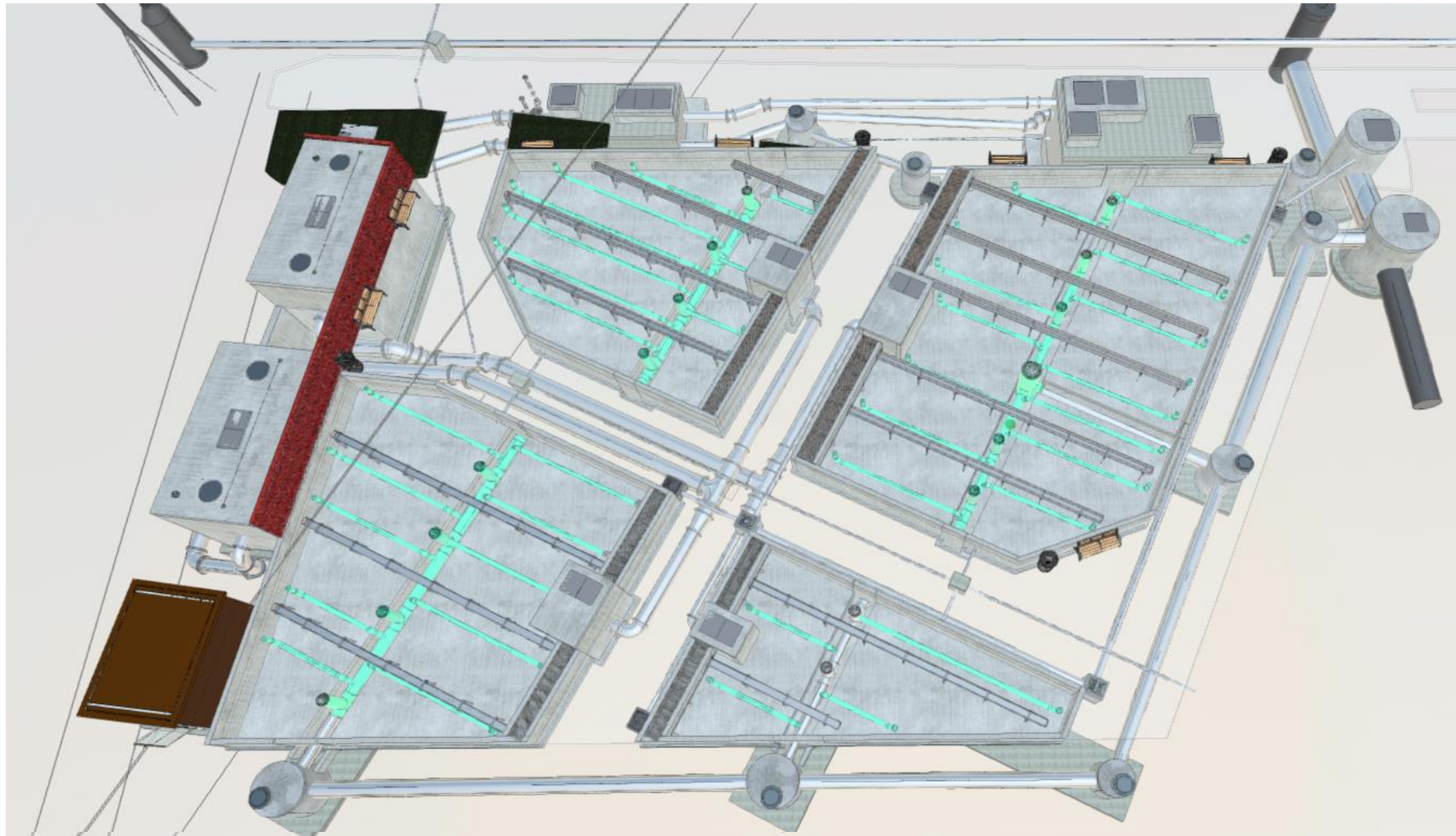
Design Concepts
Initiated in 2016

DESIGN CASE STUDY



Marysville Project Overview

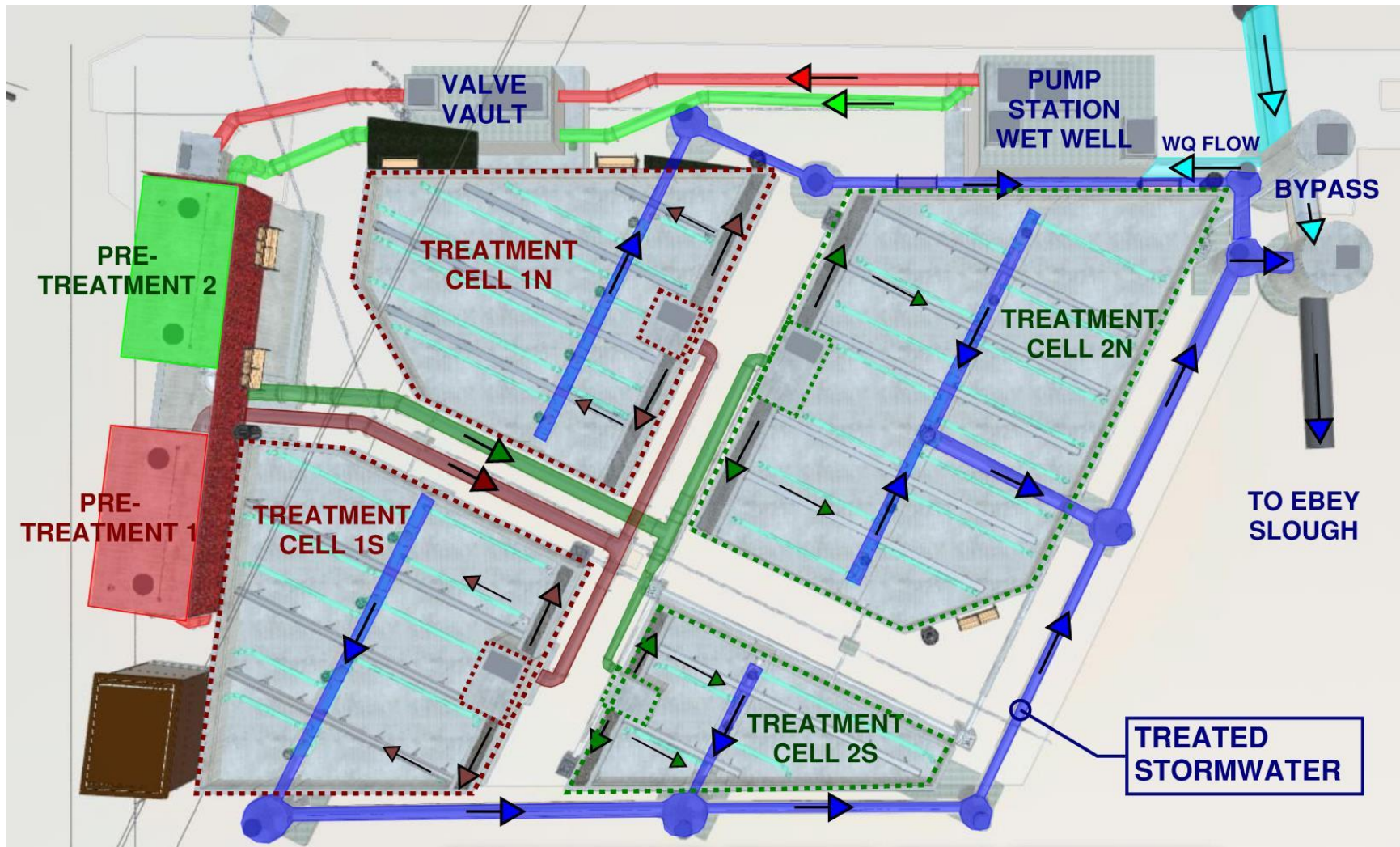
DESIGN CASE STUDY



Marysville
Project Overview



DESIGN CASE STUDY



Marysville
Project Overview

DESIGN CASE STUDY –CHALLENGES



- **Geotechnical – Preload to Piles**

- Preloaded site with 5 to 12-foot fill
- Settlement monitoring, 13-16 inches over 3 months
- Switch to pile supported, 154 steel piles

Marysville

Project Overview



CONSTRUCTION –CHALLENGES



- **Record Tides**
- King Tide with storm surge, December 27, 2022

Marysville
Project Overview



CONSTRUCTION – NEAR COMPLETION



- **Operational System**
- Fine-tuning

Marysville
Project Overview



CONSTRUCTION – NEAR COMPLETION



- **Site Finishes**
- Lighting, Cladding, Benches



Marysville
Project Overview

SUMMARY

- **Regional stormwater design considerations:**
 - Understand and communicate your project risks
 - Plan for maintenance
 - Media optimization and fouling
 - Allow for adjustments in hydraulics



SUMMARY

- **Regional stormwater facility construction**
- Understand and communicate your project risks
- Communicate concerns with owner and contractor early and often
- Involve vendor



SUMMARY

- **Retrofitting requirements are a reality.**
- **Retrofitting legacy stormwater in stormwater parks provides multi-use areas that optimize publicly-owned land.**
- **Good approach to directing and encouraging redevelopment and infill.**
- **Stormwater parks can enhance community support for stormwater management funds.**

QUESTIONS?



Paul Fendt, PE.

206-394-3677

PFendt@parametrix.com



Theo Prince, PE.

206-838-3971

TPrince@parametrix.com

Parametrix