# Combined Sewer Overflow Control Program Expert Review Panel – Summary of Georgetown Wet Weather Treatment Facility Review

*Presented to the*
*Metropolitan Water Pollution*
*Abatement Advisory Committee (MWPAAC) -*
*Engineering and Planning Subcommittee*
*November 5, 2015*

King County
Protecting Our Waters
*Doing our part on rainy days*

# Agenda

- Expert Review Panel Purpose and Qualifications
- Georgetown Wet Weather Treatment Station (GWWTS) Project Status Update
- Expert Review Panel's Approach to Review
- Recommendations
- Conclusions

# Purpose of Expert Review Panel

- Response to Section 110, Proviso P3 of King County 2015/2016 Biennial Budget

- Review and make technical recommendations on:
  - Optimization of Georgetown Wet Weather Treatment Station (GWWTS) Project
  - CSO Long Term Control Plan Update (Next task to be completed in 2015-16)

# Expert Review Panel Members

Selected for:

- National Expertise
- Local Experience
- Diverse Specializations

## Expert Panel

**Mark Graham, PE, PMP**

*Large water/wastewater infrastructure design & project management*

**Jeff Schmidt, PE, PMP**

*Design & PM of wet weather, CSO and conveyance projects*

**Art Hamid, PE**

*CSO/SSO program management*

**Adrienne Nemura, PE**

*CSO program development and regulatory strategies*

**Andre Tolme, PE**

*Construction planning and cost estimating*

**Bill Pisano, PhD, PE**

*CSO control technologies and CSO program management*

**Shannon Conway, PE**

*Wet weather hydraulic modeling and planning*

## Additional Reviewers

**Shasta McKinley**

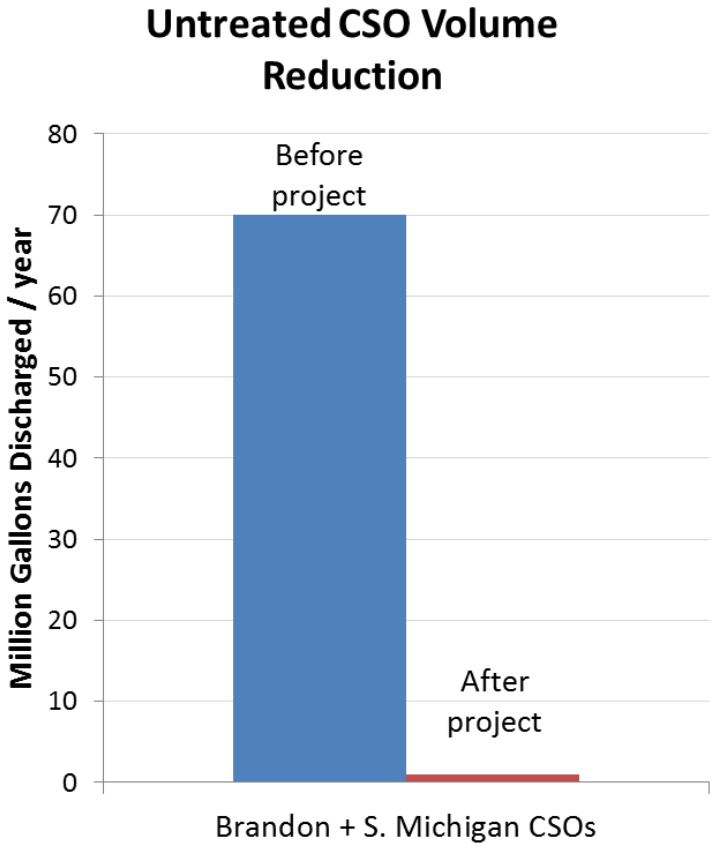
*Local permitting and regulatory compliance*

**Joan Hawley, PE**

*Operation & maintenance of stormwater & wastewater facilities*

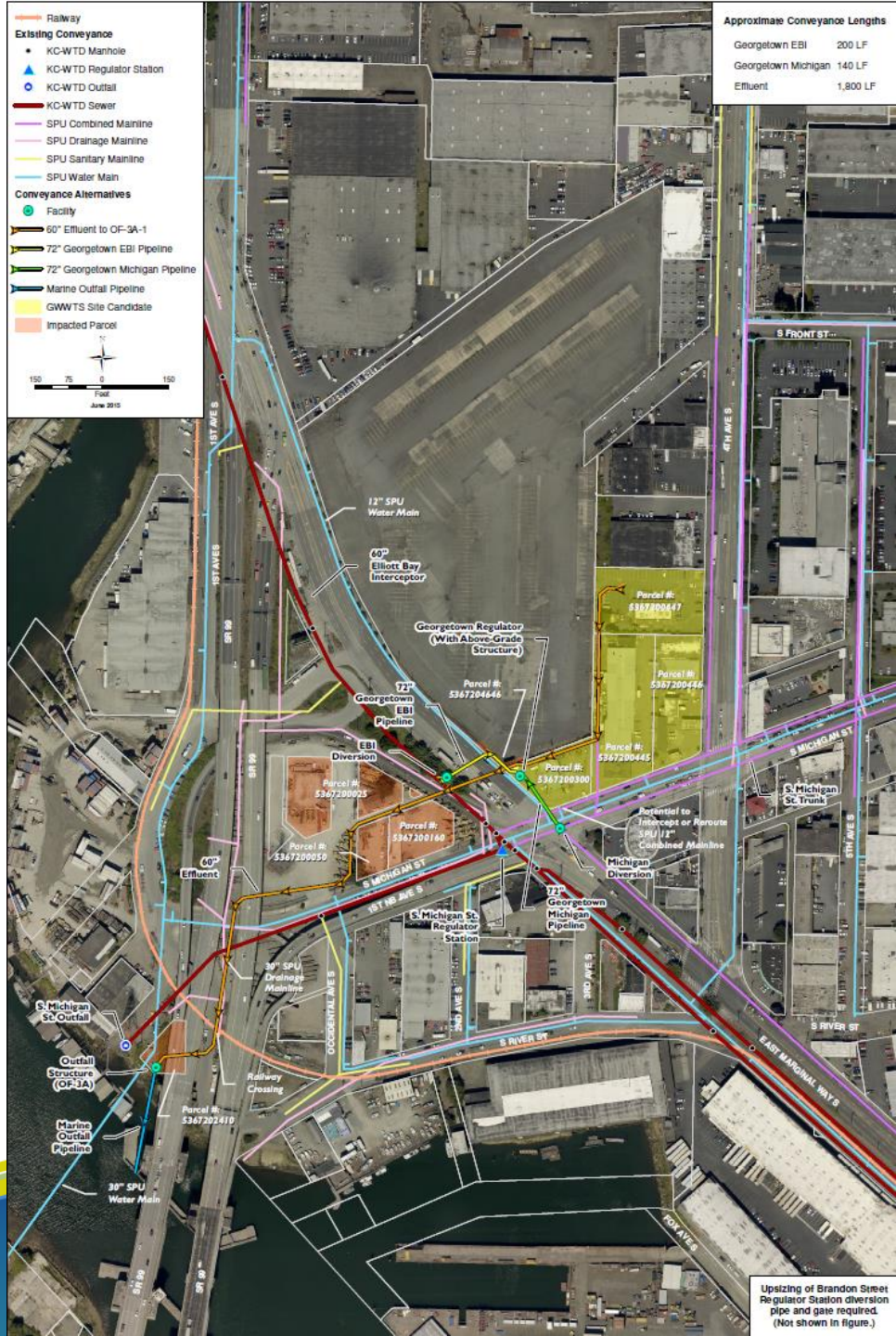
# GWWTS Project Objective

- "Control of Brandon and South Michigan Street CSO Outfalls in accordance with WAC 173-245-020(22)"
- WAC defines control as "no more than one event per year over a twenty year average" or treatment that is at least equal to primary treatment standards
- Achieve all Consent Decree requirements




Brandon
South Michigan
Elliott Bay
Brandon
South Michigan

# Proposed System Alternative



# Treatment Station Elements

- Influent conveyance
- Flow equalization
- Influent pump station
- Screening
- High rate clarification system
  - Ballasted sedimentation
- Ultra-violet disinfection
- Ancillary facilities including odor control, redundant electrical supplies, chemical storage
- Effluent conveyance
- Outfall structure

# Existing Outfalls

Brandon Outfall

Michigan Outfall

# GWWTS Project Status

- Facility Plan submitted to Ecology/EPA - November 2, 2015
- 30% design completion - March 2016
- Consent Decree requires Completion of Bidding by December 31, 2017
- Construction Completion by December 31, 2022

# First Task for Expert Review Panel: GWWTS Review

- Basis of Review:
  - Carollo Alternatives Analysis Report
  - Basis of Design Report
  - Draft Facility Plan
- Review and Recommendations for GWWTS focused on:
  - Optimization
  - Cost Control
  - Risk Management
  - Risk Mitigation

# Summary of Recommendations

- Proceed with current design
- Continue efforts to optimize design around operational efficiency and performance
- Incorporate flexibility to adapt to future climate change uncertainty
- Use procurement process to control costs and manage risks
- Minimize residual risk after 30% design

# Proceed with Current Design

- Treatment process (ballasted sedimentation, UV disinfection) is appropriate technology
- No less-expensive alternatives to comply with Consent Decree
- Stakeholder coordination has been effective – no significant barriers to design

# Optimize Design around Operational Efficiency and Performance

- Continue to engage O&M staff in specific discussions of trade-offs between capital costs and O&M effort
- Evaluate level of redundancy based on reliability, level of service requirements, and community and environmental impacts

# Incorporate Flexibility for Climate Change Adaptation

- Prepare for uncertainties of climate change
  - Rainfall patterns
  - Sea level rise
- Document provisions in current design to accommodate uncertain climate change impacts
- Opportunities for future facility modifications
  - Preserve flexibility to add effluent pumps in future
  - Add in-system storage in future, if needed

# Use Procurement Process to Control Costs and Manage Risks

*Cost control and risk management and mitigation are closely connected*

- Consider additional ways to improve negotiating position in equipment procurement
  - Ballasted sedimentation
  - UV disinfection equipment
- Consider separate construction package for earthwork if geotechnical risks cannot be adequately identified and mitigated

# Risk Management

- County has implemented a robust risk management and mitigation process; small number of high-significance risks remain
- As approach 30% design, any remaining risks will be incorporated into schedule
  - Timeframe for permit acquisition is tight
  - High potential for soil contamination and discovery of cultural resources
  - Siting of outfall structure

# Conclusions

- Continue with project design as described in Basis of Design Report and Facility Plan
  - Cost control measures are appropriate
  - Schedule can be achieved
  - Planned facilities will comply with Consent Decree and meet regulatory requirements
- Continue focus on optimization opportunities, cost control, risk management and mitigation

# Expert Review Panel Next Steps

Review and make technical recommendations during CSO Long Term Control Plan Update (occurring now – 2017) on:

- Potential redefinition/refinement of CSO basin boundaries
- Feasibility of isolating or separating sanitary sewer from combined sewer and upstream diversion of stormwater
- Optimization of CSO treatment and storage facility use
- Optimization, cost control, risk management, and risk mitigation options during CSO Plan update

# Questions?

For more information, please contact:

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Department of Natural Resources and Parks

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