



King County

Barton, Murray, Magnolia, and North Beach



CSO Facilities

**North Beach CSO Beach Project
Blue Ridge Community Club
November 16, 2009**

carollo
Engineers...Working Wonders With Water™

Project staff

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- Karl Hadler, North Beach Basin Lead, Carollo Engineering

Today's Presentation

- Update on project activities
- The problem we need to solve in North Beach
- Reminder about general approaches we're considering as we develop project alternatives
- Public involvement:
 - What we heard from North Beach
 - When and how you can be involved in the alternatives selection process

Why We're Here Today

- King County is required by the Washington Department of Ecology to control Combined Sewer Overflows at all permitted facilities by 2030
- The North Beach basin is one of four listed as high priority because of its location near popular beaches
- We're entering alternatives selection for a CSO Control Project in North Beach and we want the public informed and engaged

What We've Been Doing

- Team collected more flow data and refined models to “right size” facilities in each basin
- Project team is developing alternatives for each CSO project basin
- We're working to get communities up to speed and prepared to comment on alternatives in early 2010
- Public comment from 2007 onward will be used to inform alternatives selection process

North Beach Basin Description

- 633 acres
- Basin mostly separated
- Partially developed storm drainage system
 - Includes ditch & culvert
- 3.4 mgd Pump Station conveys flow to Carkeek
 - Dry weather flow pumped to West Point
 - CSO treatment for peaks



North Beach Basin CSO History

- Flows greater than 3.4 mgd overflow to Puget Sound
- 10 overflows per year on average
- 2 million gal per year, 7-yr average



Tool Kit for CSO Control

- Traditional Methods
 - **Conveyance** Improvements
 - **Storage** and Transfer to Secondary Plants
 - On-site **Treatment**
- Stormwater flow reduction (Demand Management)
 - **Inflow Control**
 - Roof-leader Disconnection
 - Rehabilitation of sewer pipelines
 - **“Green”** Stormwater Infrastructure

Approach decided on **project-by-project basis**:
most effective for least cost & least disruption

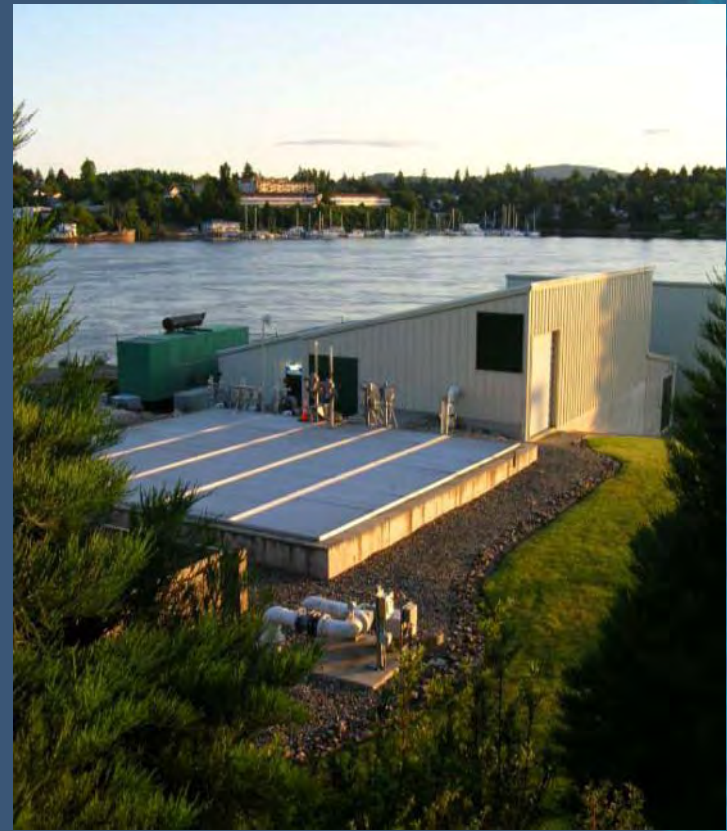
Peak flow storage is a very common “traditional” approach

- May be “centralized” or distributed within basin
- Majority of facility is typically below grade
- Peak flows diverted into storage during wet weather
- Stored flow drained back to collection system following wet weather



End-of-pipe treatment

- “High-rate” treatment facilities located near the CSO point
- Portions of facility can be constructed below grade
- Peak flows are treated and discharged
- Facilities operate only during wet weather events



Green Stormwater Infrastructure may help mitigate these impacts

- Rain gardens, bio-swales offer several potential advantages
 - Detain or retain storm flows during peaks
 - Provide stormwater treatment prior to discharge

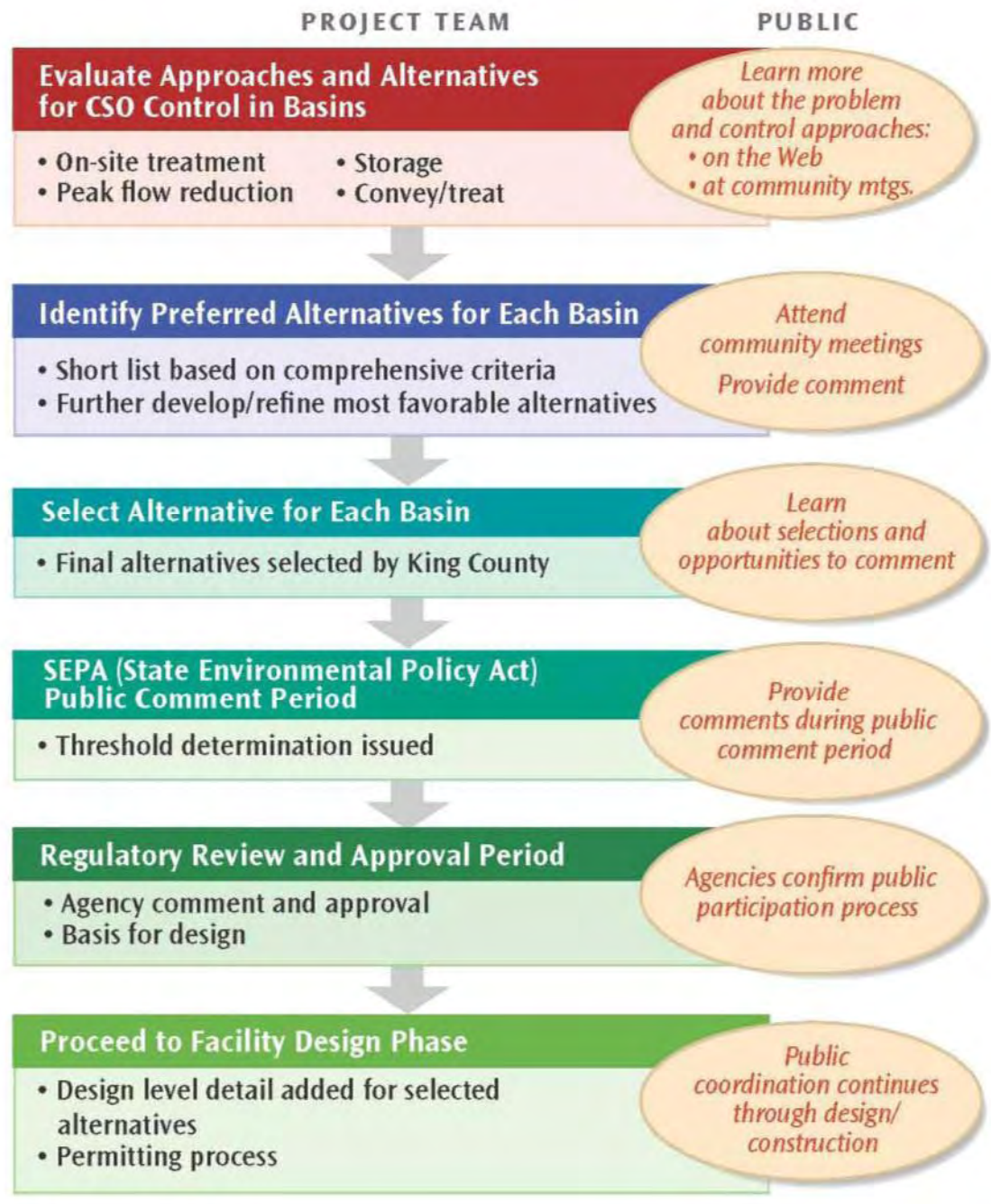


CSO Control Approach Summary

- All approaches present challenges in the project areas
- Multiple approaches are on the table
 - Traditional “bottom of basin” approaches
 - Opportunities to reduce stormwater flow
- Basin-specific advantages and constraints will be considered
- Sites will be identified to fit each CSO control approach
- A range of alternatives for each basin will be evaluated

What We Heard in 2007 from the North Beach Basin

- Concerns about water quality and effects of CSOs on public health and aquatic resources
- Questions about the role of infiltration and inflow in the CSO problem and priority for solving
- Concerns about
 - Effects of removing stormwater from sewer system on environment, drainage, flooding
 - Scope and impacts of construction on community/environment
 - Slope stability in relation to facilities siting
 - Type of facility built and long term community impacts
- Request to keep community informed and involved



Public Involvement Goals

- Working proactively to identify target audiences
- Engaging stakeholders in basins in 2009
- Providing information to assist in public understanding of the problems and possible solutions
- Providing opportunities for public input and feedback

How and When You Can Help

- Spread the word about the upcoming alternatives selection process through community groups and organizations, email listserv, newsletters, etc.
- Ongoing – Contact us with questions, concerns, information
- Attend public meetings early, 2010

Resources

- Web- www.kingcounty.gov/csobeachprojects
 - Sign up for email alerts on Web updates, meeting dates, and meeting summaries
 - Get information about the CSO Beach Projects and activities in each basin
 - Check the public meeting calendar
- Contact us with questions and concerns, to request hard copies of information by mail, and to provide comment:
 - Email – CSOBeachProjects@kingcounty.gov
 - Phone- 206-263-7301 (Monica Van der Vieren)



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