



KING COUNTY
FLOOD CONTROL
DISTRICT



King County

Advisory Committee Meeting

February 25, 2010

Protecting public safety, the regional economy and critical infrastructure.

2010 Proposed Capital Program Reallocation

Presentation Overview

- Background and Context
- 2010 Budget Needs
- 2010 Budget Available
- Impacts on the 6-Year CIP list
- Advisory Committee Discussion

Background

- January 2009 Presidentially-Declared Flood Disaster
- May 2009 Budget reallocation - \$7.1M for flood response
- October 2009 Emergency Levee Raising - \$8.4M
- 2010 Budget – \$2M in Jan 2009 flood repairs, Budget Contra of \$8.4M
 - ‘Deference’ to projects adversely impacted by January 2009 flood response
 - Consider full scale of flood response impacts (\$17M)
 - Request Advisory Committee recommendations by March 31 2010



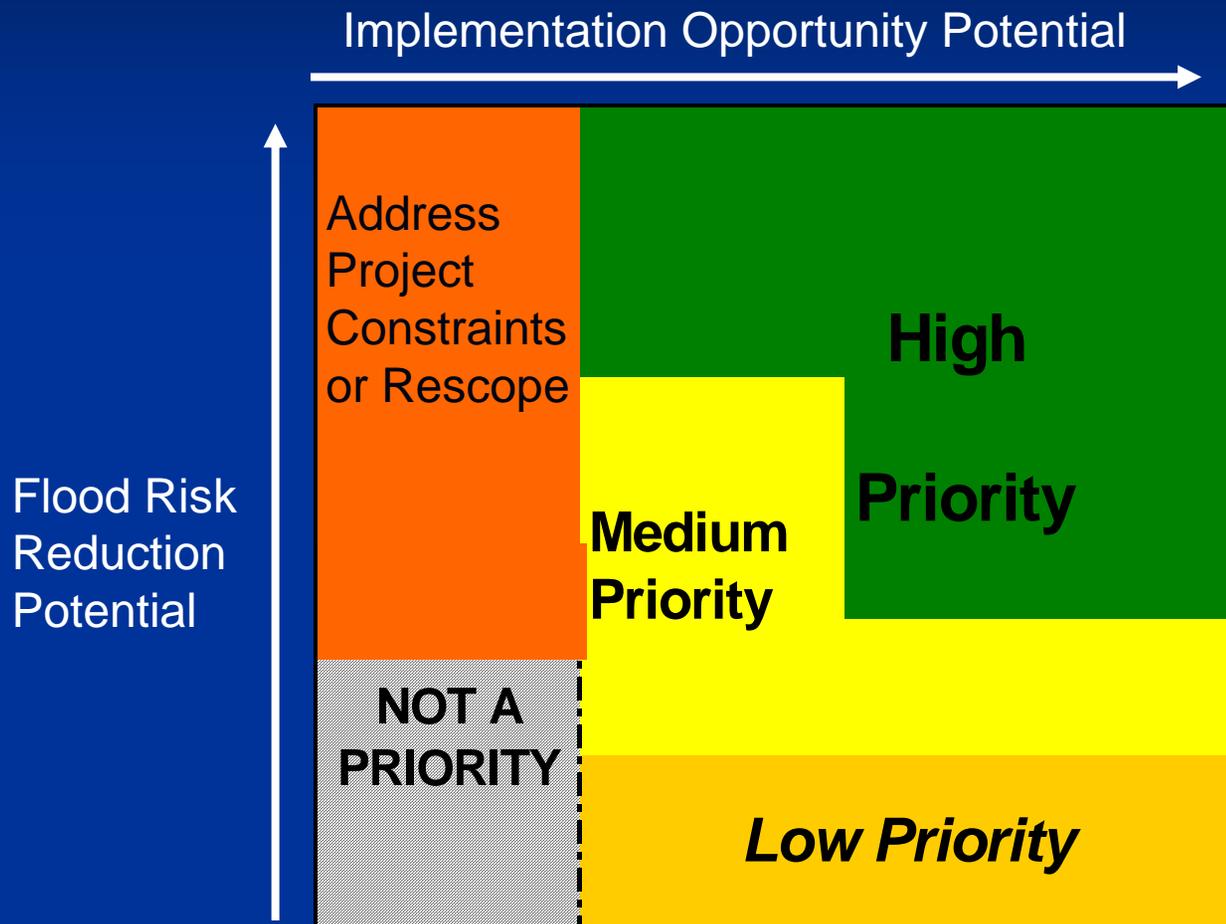
Flood Risk Reduction Potential

- Consequences: What would happen if no action were taken?
 - Types of land use impacted; Regional Economic Benefit
- Severity: How serious is the impact?
 - Human injury or death *vs* little or no damage
- Extent of Impact: What is the scale of the problem?
 - Impacts beyond the area of flooding *vs* localized
- Urgency: How soon will the impacts occur?
 - Next high flow event *vs* Risks are not rapidly increasing

Implementation Potential

- Project Readiness
- Partnerships / Leverages Funds
- Supports multiple objectives
- Long-Term Maintenance Costs
- Programmatic Activities
 - Community Rating System
 - Meet or exceed NFIP
 - Active CIP program
 - Active O&M program

Evaluation Criteria: Project Evaluation Approach



NOTE: This is a conceptual diagram and is not intended to imply clear and distinct thresholds between these categories.

Guidance for Reallocating Funds – November 2009

Funds Available:

- Fund balance for completed projects
- Existing 2010 Fund Balance (\$3.557M)
- Adopted projects that will not be moving forward in 2010 due to implementation constraints
 - Partnerships and Coordination
 - Land Owner Willingness
 - Grants and Leveraging

Funds Not Available:

- Flood Risk Score > 75%
- Significant investment to date
- Partnership or leveraging in place
- Contractual obligations

#1: Green River Levee Raising \$8.4M

- Response to USACE Howard Hanson Dam reduced storage capacity
- Implemented fall 2009



#2: White-Greenwater Acquisition

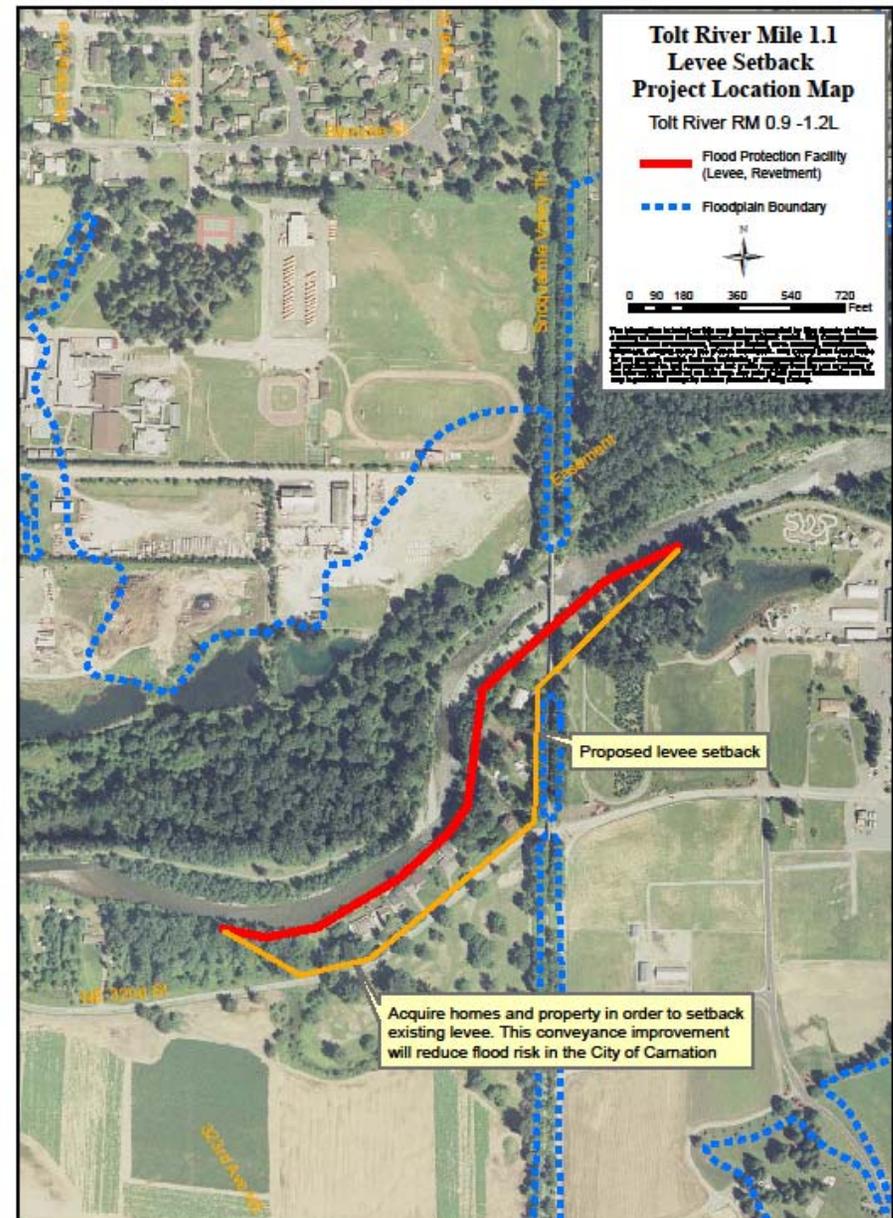
\$800,000

- High risk of channel migration
- Recommended by Advisory Committee and Adopted by Board in 2008
- Landowner willingness changed, project shifted out to make room for Jan 2009 flood response
- Property back on market
- Opportunity to permanently remove flood risk



#3: Tolt River Mile 1.1 Levee Setback \$400,000

- Site of January 2009 levee breach
- 4 acquisitions complete to date
- Snoqualmie River Trail bridge scheduled for replacement
- Opportunity to change bridge alignment to benefit levee setback project



#4: Cedar Rapids Repair

\$700,000

- Construct repairs to levee setback project
- Design strengthened to include engineered log jams to prevent erosion on the outer edges of the project
- No FCD Funds.
- Fund source is River Improvement Fund (RIF)
- Potential FEMA partial reimbursement



Pre-Flood,
2007



Post-Flood,
2009

#5: Stoneway Lower Repair

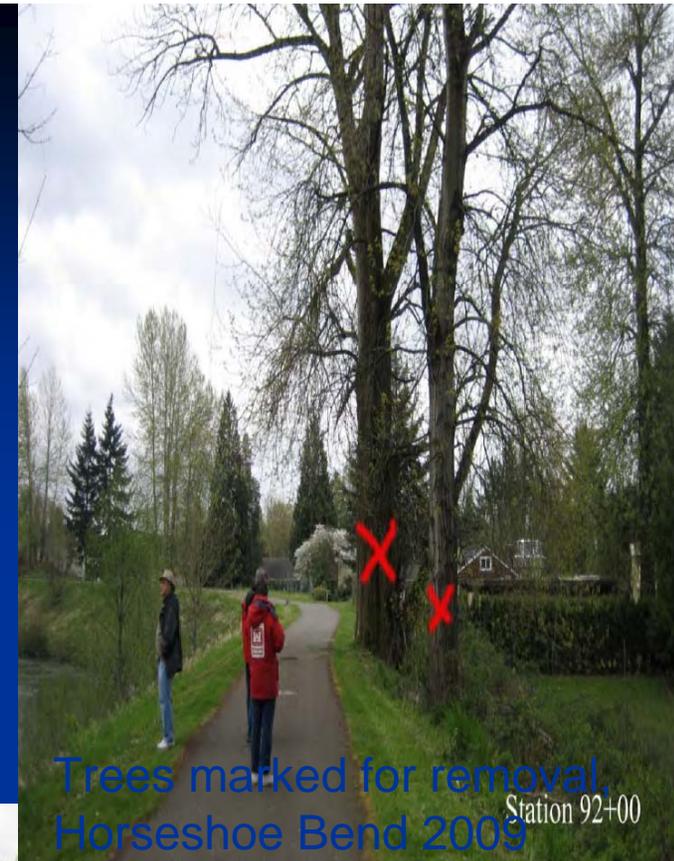
\$450,000

- January 2009 flood damage
- Threat to sewer line conveying drainage from landfill Superfund site
- Planning level estimate (\$150,000) low
- Potential FEMA reimbursement



#7: Green River PL 84-99 Mitigation Site \$2.5M

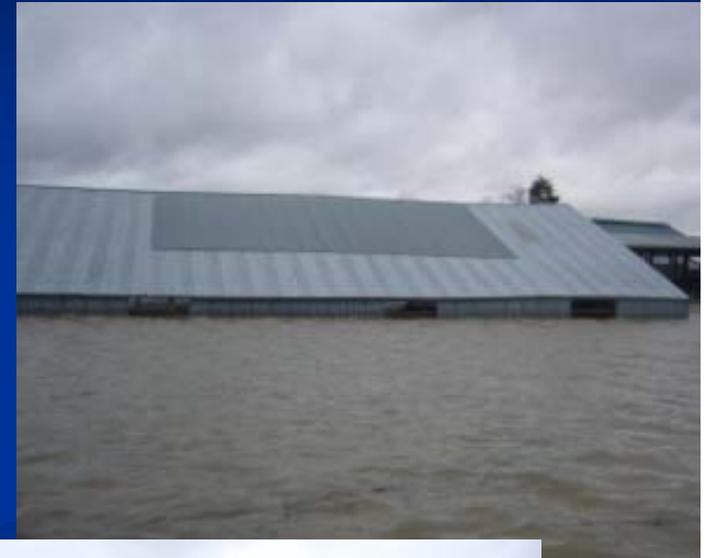
- Removal of levee vegetation required by Corps for cost-sharing under PL 84-99
- Mitigation required by state and federal resource agencies
- Mitigation plantings must be permanent – not subject to Corps cutting requirements
- Land needed to provide mitigation for multiple sites
- Seeking grant funding to reduce FCD share



#8: Lower Snoqualmie Residential Flood Mitigation Project

\$300,000

- Revenue backed by donation from Puget Sound Energy
- Matches existing adopted FCD appropriation for 2010
- Reduce flood impacts on farm buildings, potential use for farm pads



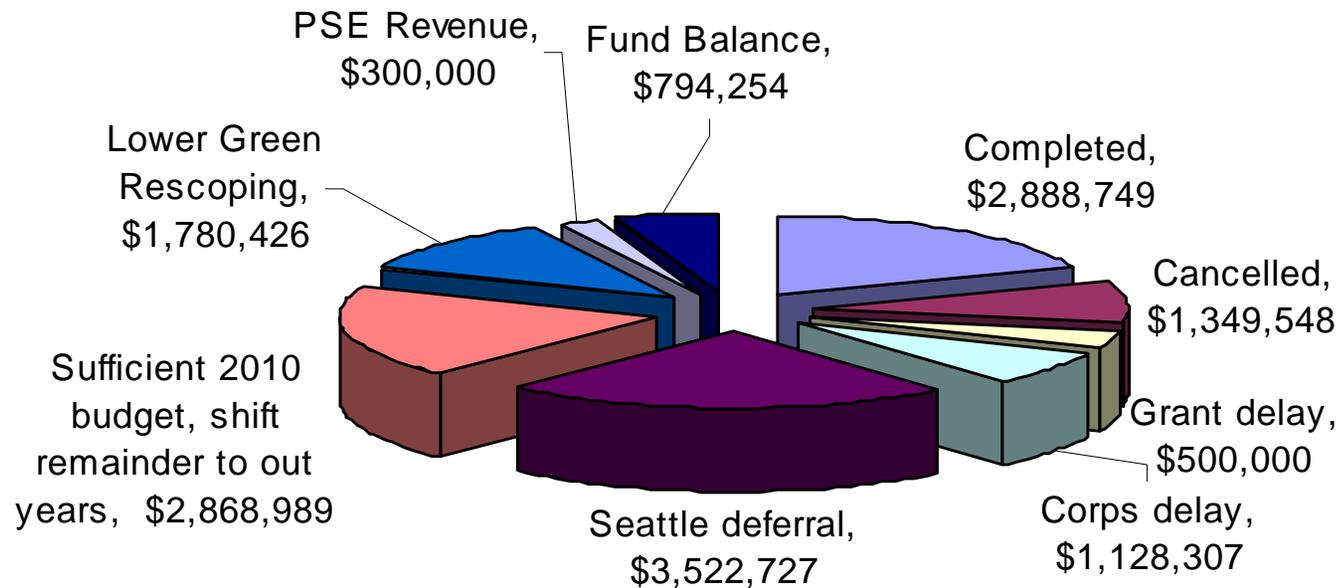
#9: Project Validation Monitoring

- Multiple large levee setbacks
- Evaluate project effectiveness, beyond permit requirements
- Inform design of future projects to streamline the permit process and timeline



2010 Potential Sources

No net change to lifetime budget for Lower Green River, Corps ERP, Seattle, or Lower Tolt Grant



Impacts beyond 2010

- Sammamish – Willowmoor Project budget reduction in 2015
- Fund balance reduced in Year 6 from \$5M to \$1M
- Shifts within 6-year window to reflect implementation factors
- Potential for revenue from FEMA, state, and grants

Advisory Committee Discussion

- Do you support the proposed 2010 reallocation?
- If not, what additional information is needed to make a recommendation to the Board?

Green River External Advisory Report

Purpose

- Expert advisory panel review of the 2006 Flood Plan strategy for the Green River in light of altered Corps dam operations
 - Capital projects
 - Sediment and Large Wood Management
 - Floodplain regulations, flood warning programs, etc
 - Emergency response measures in response to Howard Hanson Dam storage limitations

Who was on the panel?

- Licensed civil engineers with experience:
 - Designing and constructing river engineering projects
 - Assessing flood damages to levees
 - Conducting geotechnical evaluation of levees
 - Designing and constructing flood facilities within the context of Endangered Species Act listings for anadromous salmonids.
- PhD in geomorphology or geology, with experience analyzing the relationship between landscape processes, riverine processes, and the assessment of flood and/or channel migration risks.
- Certified Floodplain Managers with expertise implementing National Flood Insurance Program and Community Rating System activities in local government
- Environmental policy expertise, including familiarity with the Clean Water Act and Endangered Species Act and their application to flood risk reduction activities in the Pacific Northwest.
- Consultant team selected 8 panelists meeting these qualifications

Advisory Panel Members

- Derek Booth, PhD, PE, PG—Senior Geologist, Stillwater Sciences; Affiliate Professor, University of Washington Department of Earth and Space Sciences and Department of Civil and Environmental Engineering
- David Montgomery, PhD—Professor, University of Washington Department of Earth and Space Sciences
- Jon Kusler, PhD, JD—Associate Director, Association of State Wetland Managers
- Larry Larson, PE, CFM—Executive Director, Association of State Floodplain Managers
- Tony Melone, PhD, PE, CFM—Water Resources Program Manager, Tetra Tech
- Greg Fischer, PhD, PE—Senior Geotechnical Engineer, Shannon & Wilson
- Rob Flaner, CFM—Hazard Mitigation Specialist, Tetra Tech
- Mike Harvey, PhD, PG—Senior Geomorphologist, Tetra Tech
- Cynthia Carlstad, LHG—Senior Project Manager, Tetra Tech

Future Planning Recommendation: Floodplain Management Should Consider a Wider Flood Corridor

- The review panel believes that a long-term strategy (20-50 years) needs to be more aggressive in identifying a plan to create a much wider river corridor (e.g. 500 feet). Moving levees farther from the channel would provide many advantages over the current, more constraining levee network, such as reduced flood elevations and flow velocities.

Future Planning Recommendation: Future Management Should Use a Risk- Based Approach

- The review panel supports King County's continued use of a risk-based approach to identifying and prioritizing floodplain management projects. A risk-based approach to floodplain management should clearly measure the pre-project and post-project risk, so that the net risk reduction of one project can be compared to another for prioritization.

Future Planning Recommendation: Future Management Should Be Multi- Objective

- Future management strategies should simultaneously address environmental concerns and flood risks. Local government wetland, floodplain, and other critical area and open space plans should be supported.

Future Planning Recommendation: Regulatory Authority Must Be Adapted for Floodplain Management

Currently, there is no consistency in the scope of floodplain management regulations among the jurisdictions. The panel recommends that King County consider the following:

- Strengthen the definition of “regional consistency” in the 2006 Flood Plan to include regionally acceptable/applicable higher regulatory standards.
- Establish ramifications for the lack of consistency under the 2006 Flood Plan.
- Establish incentives for municipalities to adopt the 2006 Flood Plan or regional policies consistent with those in the plan.
- Consider expanding the regulatory scope of the King County floodplain management program into areas with identified exposure to residual risk.

Levee Design Considerations and Need for Ongoing Monitoring

Some of King County's levee design approaches for the Green River differ from design approaches implemented by the Corps of Engineers. Because of these differences, the review panel believes that monitoring of levee performance is needed. A monitoring program would provide a more formalized process under which observation of results can lead to changes in a management approach.

2011 Budget and Work Program Preview

Advisory Committee Timeline

- February 26 - 'Call for Proposals' due
- March - Preliminary Recommendations from BTCs
- April – BTC review/response based on Advisory Committee direction
- April – Advisory Committee Recommendations
- May – 2011 County budget development
- August – Advisory Committee report to the Board
- November – Board adopts budget and work program for 2011

2006 Flood Plan Update

- Required by January 2012 (5 years after adoption)
- Board to determine scope of update
- Potential issues during plan update
 - Levee vegetation
 - Levee certification and FEMA map accreditation
 - Sediment management
 - Geographic scope of plan (e.g. small streams, coastal areas)

FYI

- Draft letter in support of immunity for Flood District
- Draft letter re: proposed Corps levee vegetation management policy
- Upcoming Public Meeting on FCD Hazard Plan necessary for FEMA grant eligibility
- *Seattle Times* Op-Ed: Mayor Cooke and Mayor McBride