

2006 King County Flood Hazard Management Plan



**Presentation to:
Metropolitan King
County Council
Growth Management
& Natural Resources
Committee
September 12, 2006**

Presentation Overview

- Timeline and Process
- Flood Management Risks
- Flood Hazard Mapping
- Key Flood Plan Topics:
 - Recommended Projects
 - Current Approach To Projects
 - Additional Public Benefits from Projects
- Conclusion and next steps

Timeline and Process

- Flood Hazard Management Plan
 - FCZD Intent Ordinance
 - FCZD Formation Ordinance
- July 11 Committee Briefing
- City Briefings
- BRB Process
- Ongoing outreach and briefings
- District formation
- Capital projects approval and funding

Flood Management Risks

- \$7 billion in assessed valuation
- 37,000 acres of floodplain
- Major regional employers:
 - Boeing, Paccar, Southcenter
- Critical public infrastructure:
 - Seattle's Tolt Water Supply Pipeline – 30% of Seattle's water
 - SR 169 – over 51,000 vehicles per day

Flood Management Risks



Flood Management Risks



Flood Management Risks



2006 King County Flood Hazard Management Plan

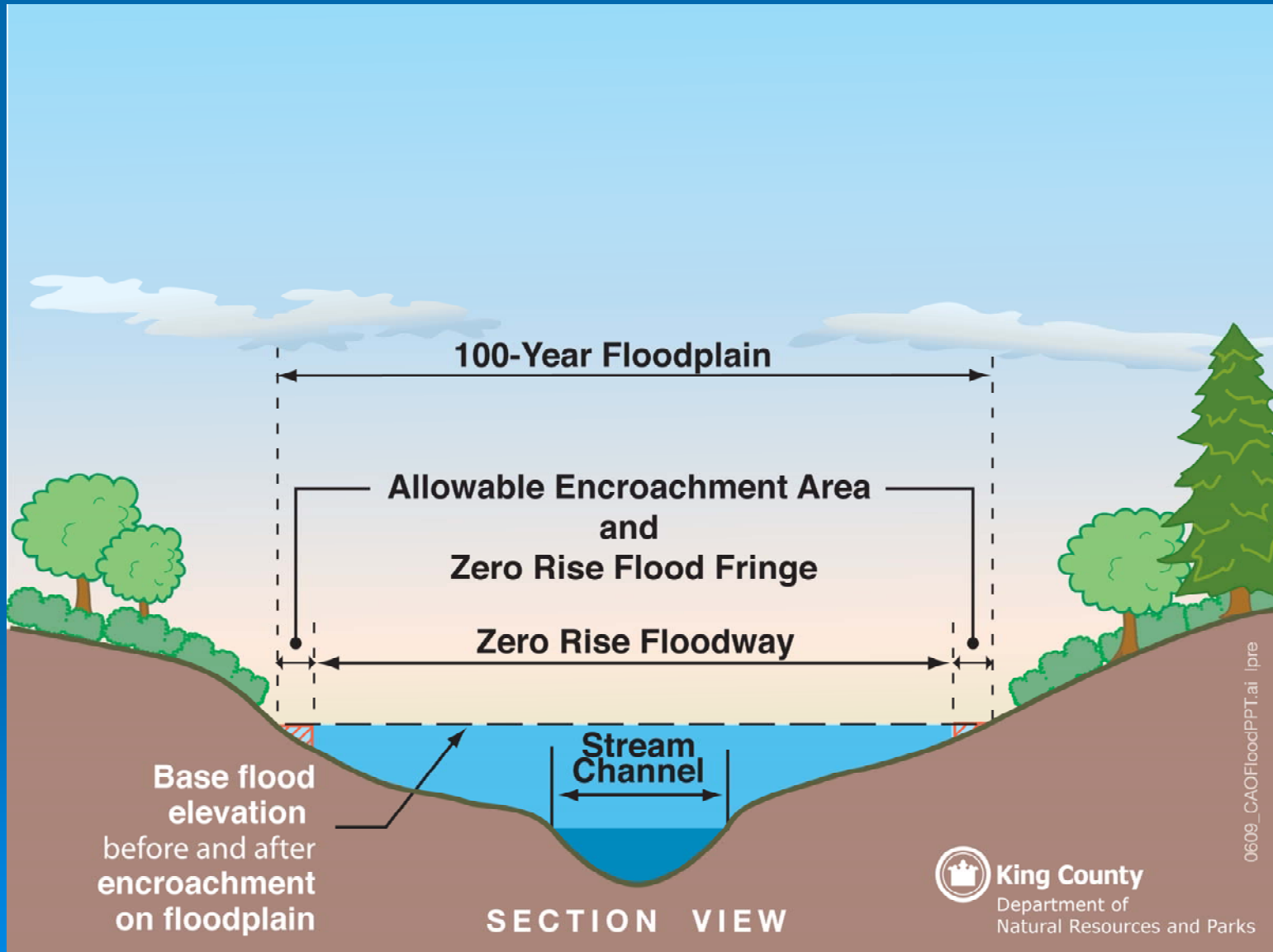
Capital improvement projects

- Levee and revetment repair and replacement
- Home elevations
- Acquisition of repetitive loss properties

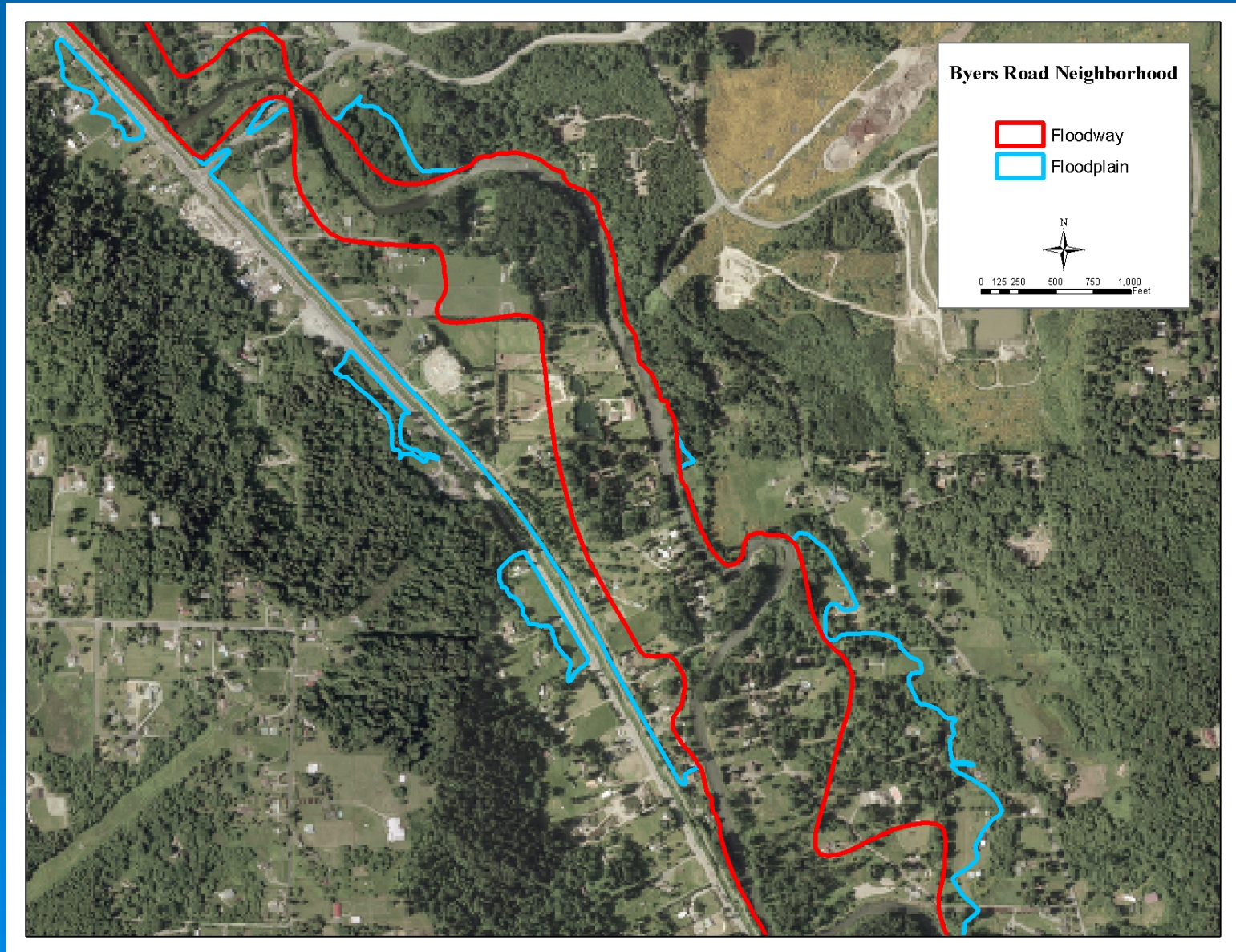
Floodplain management programs

- Flood Warning Center and emergency response
- Public education and outreach
- Mapping and technical studies
- Citizen inquiries and public response
- Partnerships with state and federal agencies

Flood Hazard Mapping

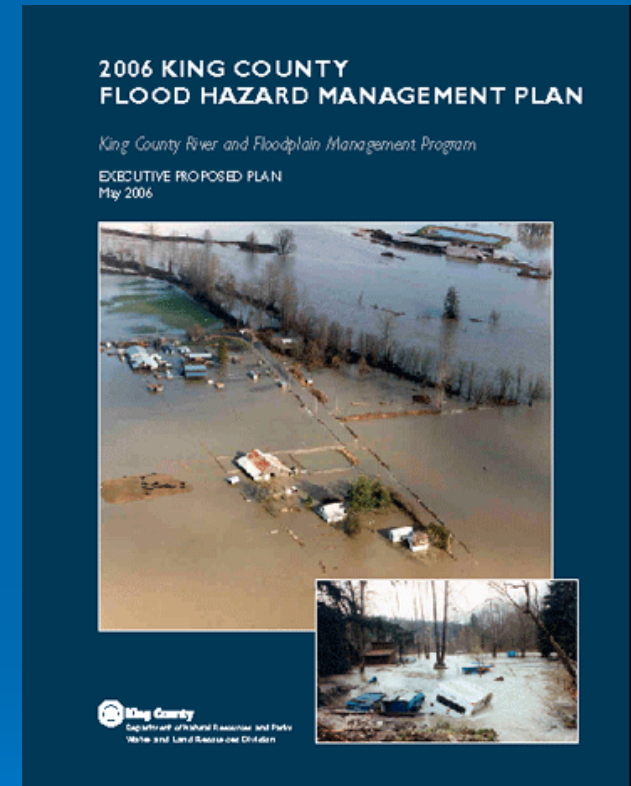


Flood Hazard Mapping



Recommended Capital Projects

- Protect the Tolt Pipeline
- Repair Lower Green River Levees to protect Southcenter and regional economic resources
- Repair South Fork and North Fork Snoqualmie Levees
- Complete Willowmoor Floodplain restoration
- Mitigate FEMA listed Repetitive Loss Properties and other chronically flooded residences



Recommended Capital Projects

CIP Category	Phase 1 (\$179 M)	Phase 2 (\$156 M)	Total (\$335 M)
Acquisitions + Elevations (includes easements)	179 \$50 M	150 \$60 M	329 \$110 M
Levee + Channel Capacity Improvement Projects	35 \$100 M	43 \$96 M	78 \$196 M

Property Acquisition

	Non-levee related (# parcels)	Levee related (# parcels)	Totals
Easements in support of facility CIPs	5	15	20
Acquisitions + Elevations	121	58	179

- Property acquisition is always fair market value
- Property acquisition or elevation to protect people in repetitively flooded homes
- Easements are sometimes needed to repair levees and stabilize the shoreline

Criteria for Project Selection

- Flood Plan projects on main stems of rivers
- Projects selected based upon:
 - Consequences – public safety/property loss
 - Urgency
 - Legal liability
 - Funding and partnerships
- Annual legislative approval of final project lists
- Other projects may meet criteria

Flood Hazard Management

HISTORIC APPROACH

- Artificially confines river to a narrow channel
- Hardened shorelines
- Limited effectiveness
- Environmental damage
- Costly



Lower Green River levees

Flood Hazard Management

CURRENT APPROACH

- Manage rivers for multiple public purposes
- Flood risk reduction
- Environmental benefits
- Cost effective



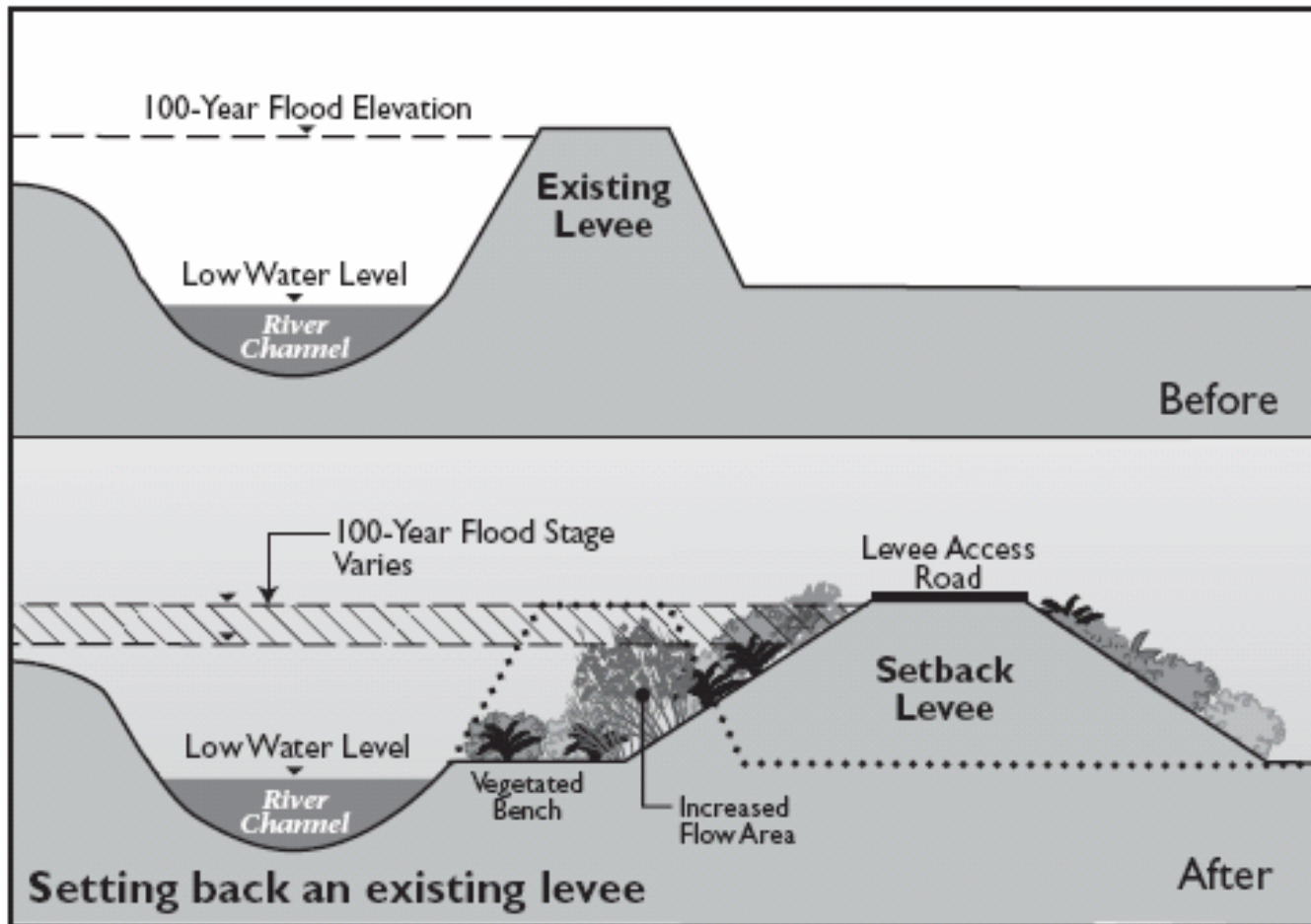
Bio-engineered levee setback - Lower Green River

CURRENT APPROACH

Bioengineered Repairs for Flood Protection Facilities

LEVEE SETBACK PROJECTS

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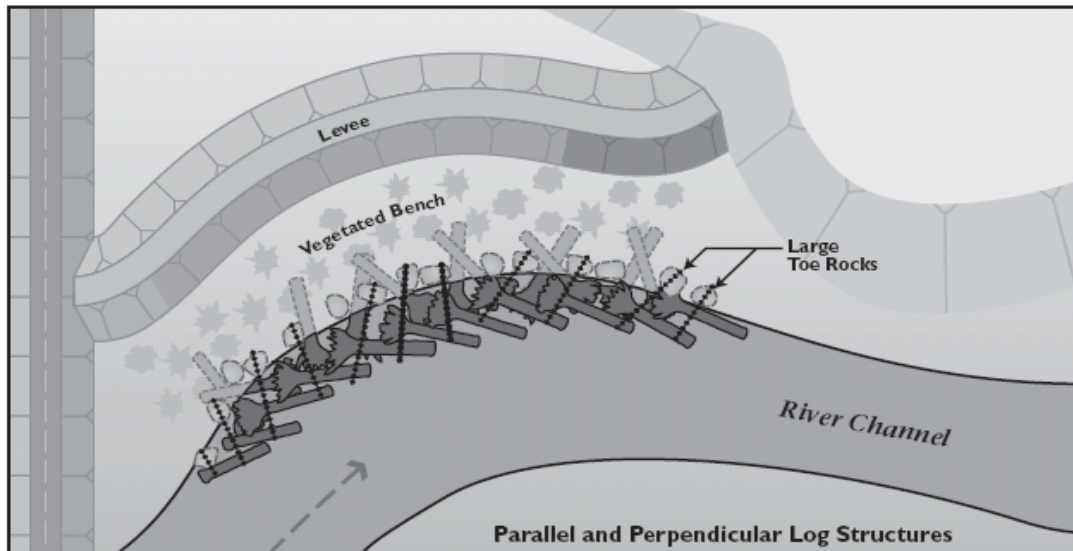
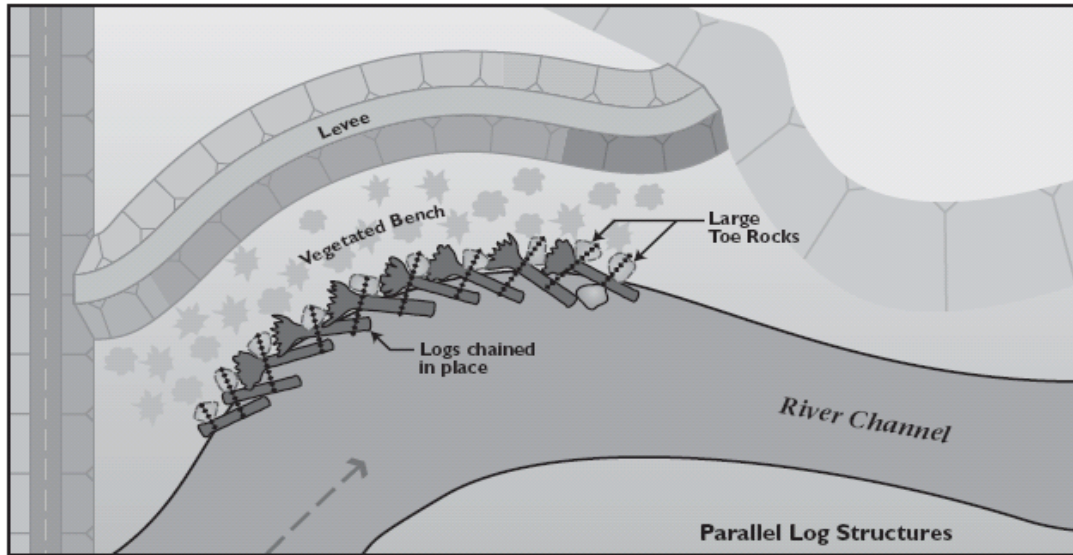
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CURRENT APPROACH

Bioengineered Repairs for Flood Protection Facilities

BIOSTABILIZED RIVERBANK WITH LOG STRUCTURES

2006 KING COUNTY FLOOD HAZARD MANAGEMENT PLAN



Reasons for Current Approaches

- Better flood protection
- River is dynamic
- Permitting requirements
- Environmental benefits
- Cost effective



Salmon Recovery Benefits Gained From New Flood Projects

WRIA	Phase 1 (\$179 M) Salmon recovery needs addressed	Phase 2 (\$156 M) Salmon recovery needs addressed	Total (\$335 M)
7	7% \$2 M	43% \$23 M	50% \$25 M
8	7% \$14 M	48% \$39 M	55% \$53 M
9	4% \$3 M	19% \$77 M	23% \$80 M

- Phase 1 Flood Plan implementation will address \$13.5 M of salmon recovery priorities within King County's portion of WRIA 10

Additional Water Quality Benefits Gained from Flood Projects

- Vegetation provides shade and filters contaminants
- Reduction in sediment that enters rivers
- More consistent water temperature



Conclusion

- Significant benefits
 - Protect life and property
 - Regional economy
 - Ancillary environmental and public benefits
- Affordable cost
- Significant public support



Next Steps

- Additional briefings/outreach
- District formation
- Governance, project funding and identification
- Commence projects to enhance flood protection