

# King County Flood District Advisory Committee

2009 Proposed Work Program

May 28<sup>th</sup> 2008

# Presentation Overview

- Capital Project Evaluation Approach
- Basin-Specific Strategies for Capital Project Implementation
- Preliminary 2009 Work Program

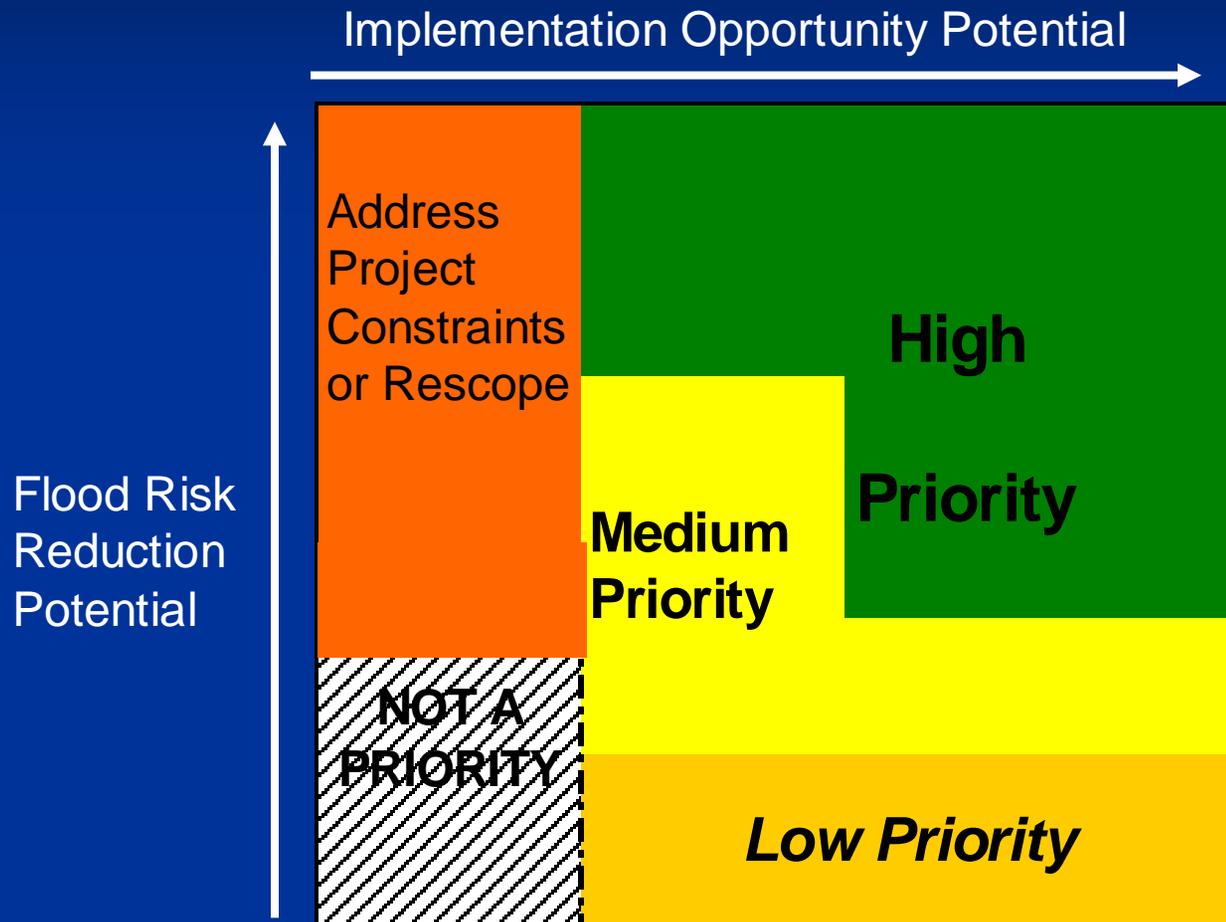
# Flood Risk Reduction Potential

- 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

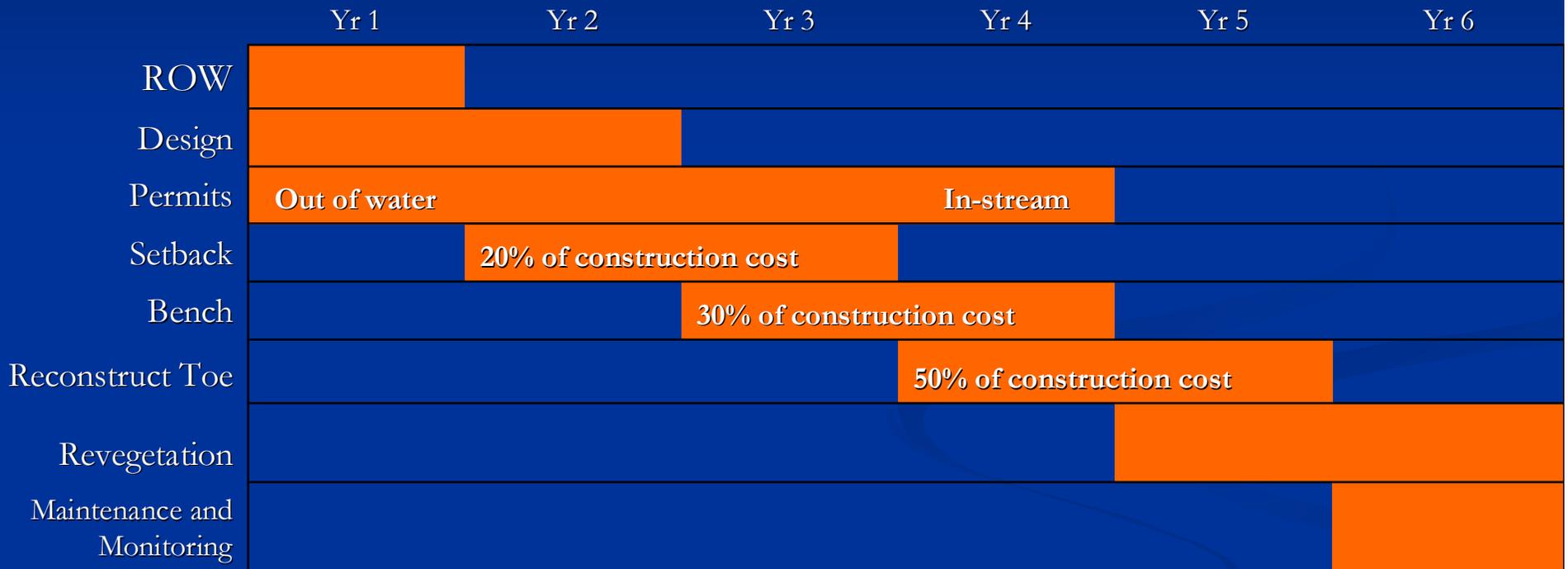


NOTE: This is a conceptual diagram and is not intended to imply clear and distinct thresholds between these categories.

# Green River Strategy

- Rehabilitate levees to protect critical public infrastructure and regional distribution centers
- Flood Risk Reduction Potential:
- Implementation Constraints: Right-of-way issues may influence implementation potential
- 2009 Work Program:
  - Briscoe 1-3, 5-8; Desimone 1-4, Segale 2-4
  - Negotiate ROW – Lower Green projects may shift due to landowner willingness in 2009-2010
  - Initiate design using Briscoe #4 template
  - South Park, Reddington/Riverside
  - Phased implementation

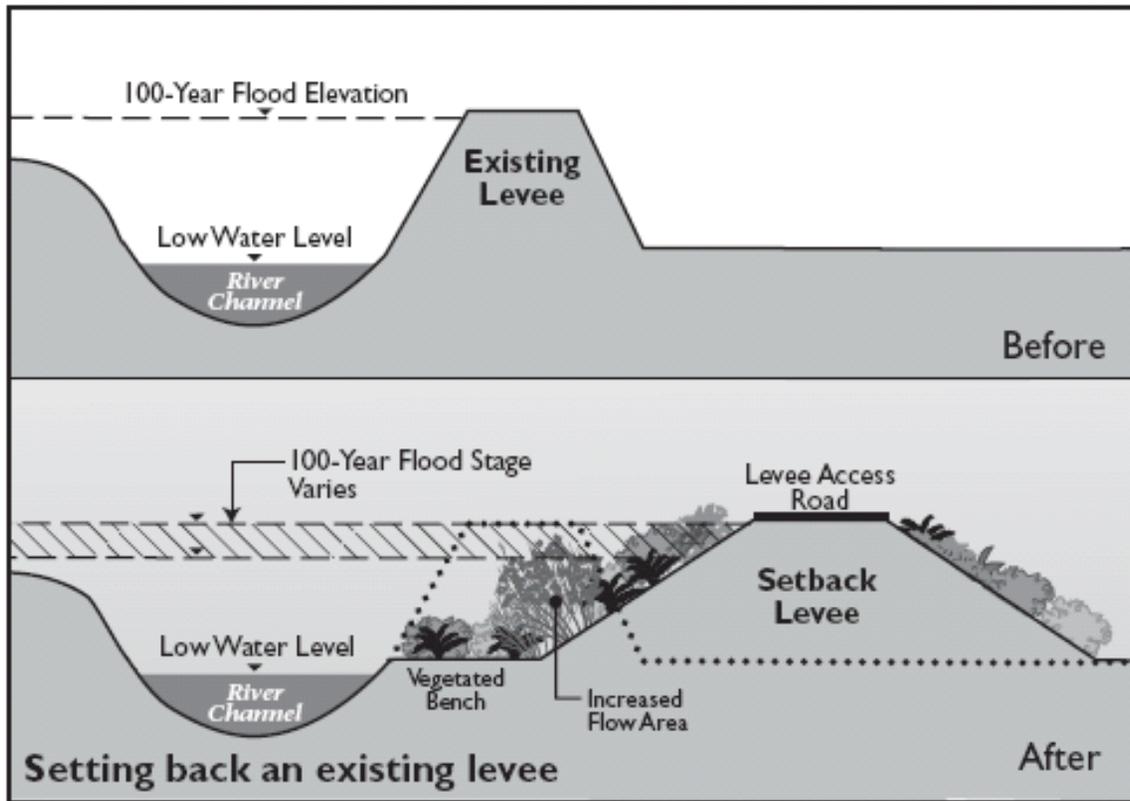
# Addressing Constraints: Capital Project Phasing



# Addressing Constraints: Capital Project Phasing

## LEVEE SETBACK PROJECTS

2006 KING COUNTY FLOOD HAZARD MANAGEMENT PLAN

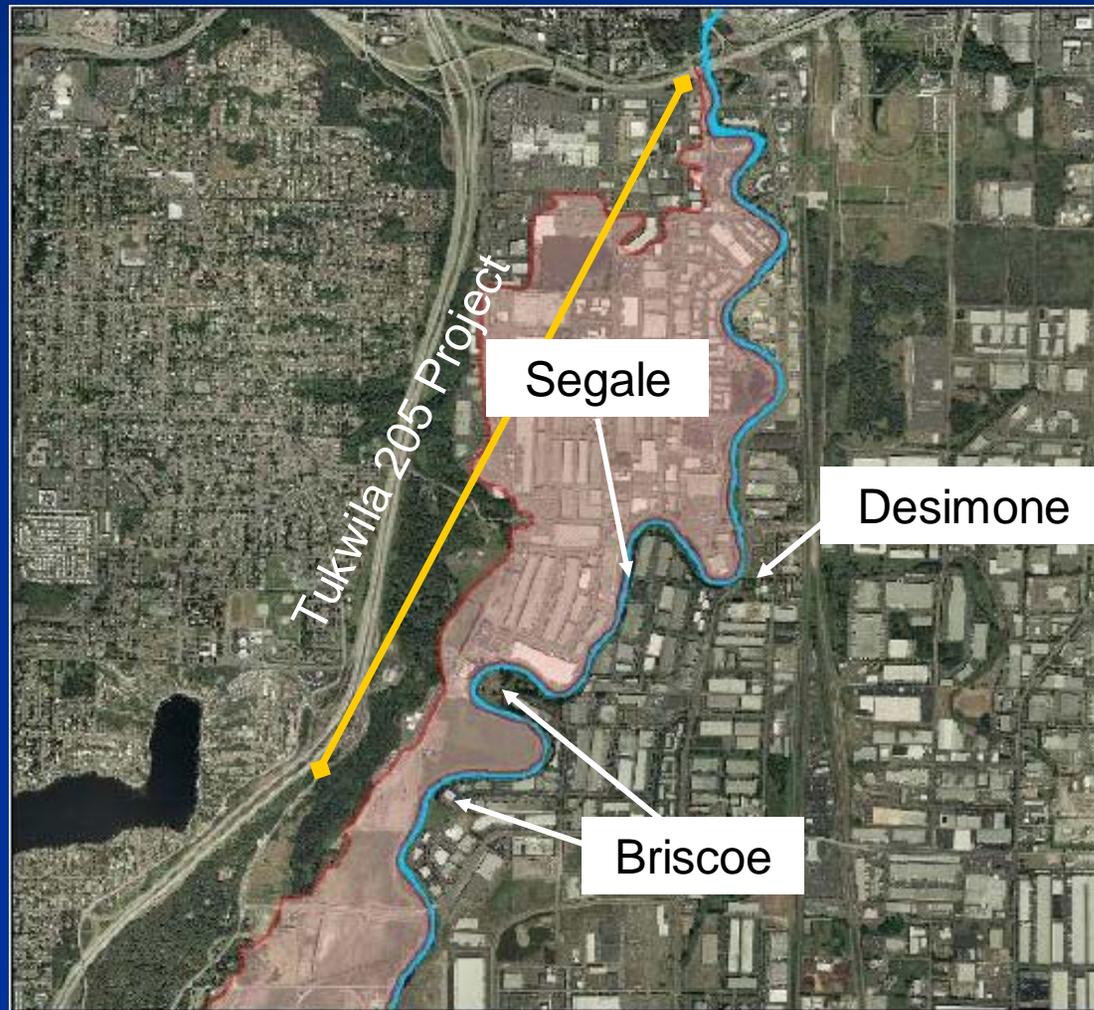
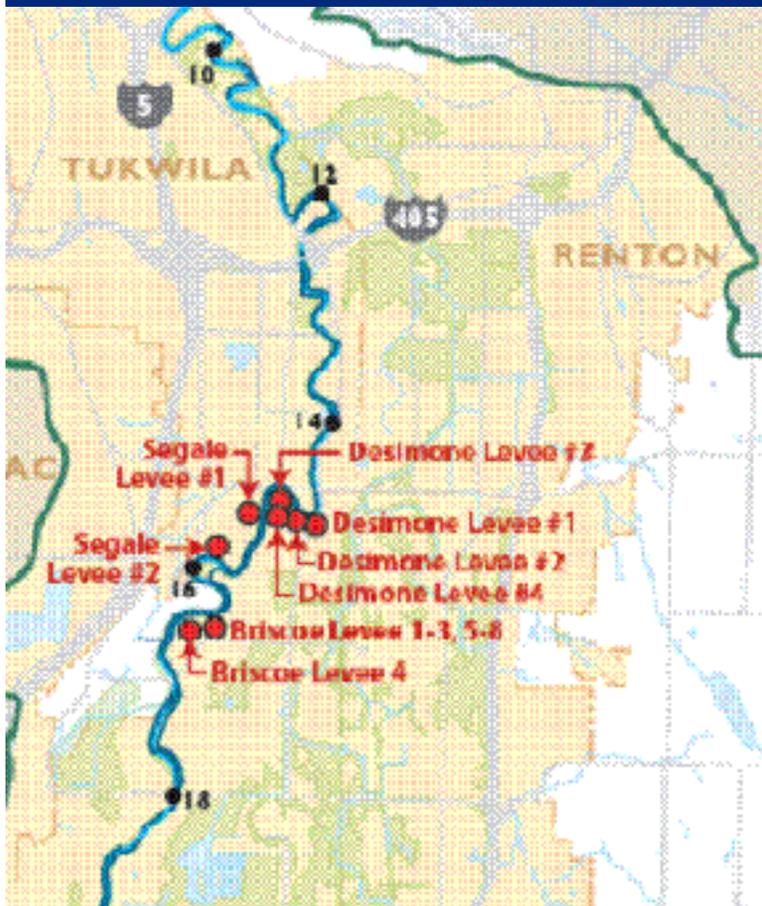


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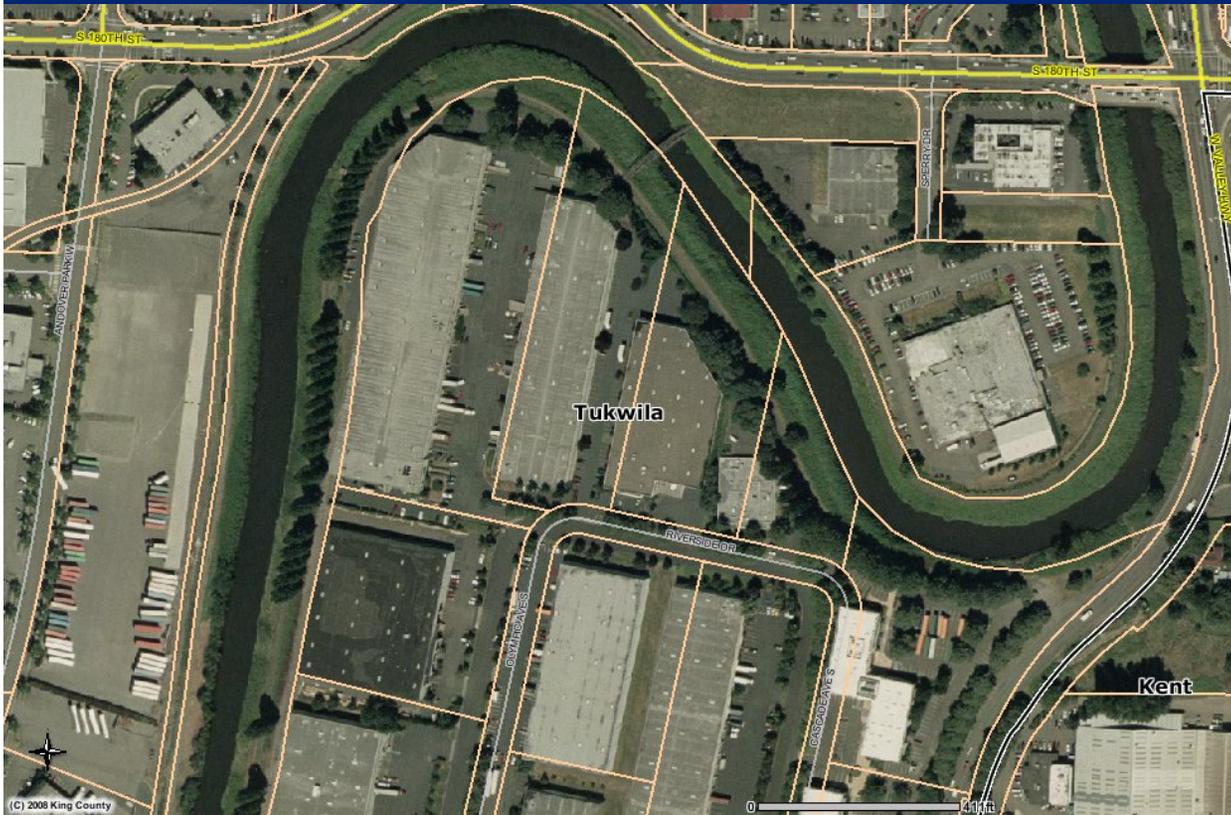
Bio-engineered levee setback - Lower Green River

# Lower Green River: 2009 Proposed Projects





# Desimone 1-4 (\$7.5M)



# Riverside Estates/Reddington (\$2.9M)



# South Park Duwamish Industrial Area Tidal Inundation

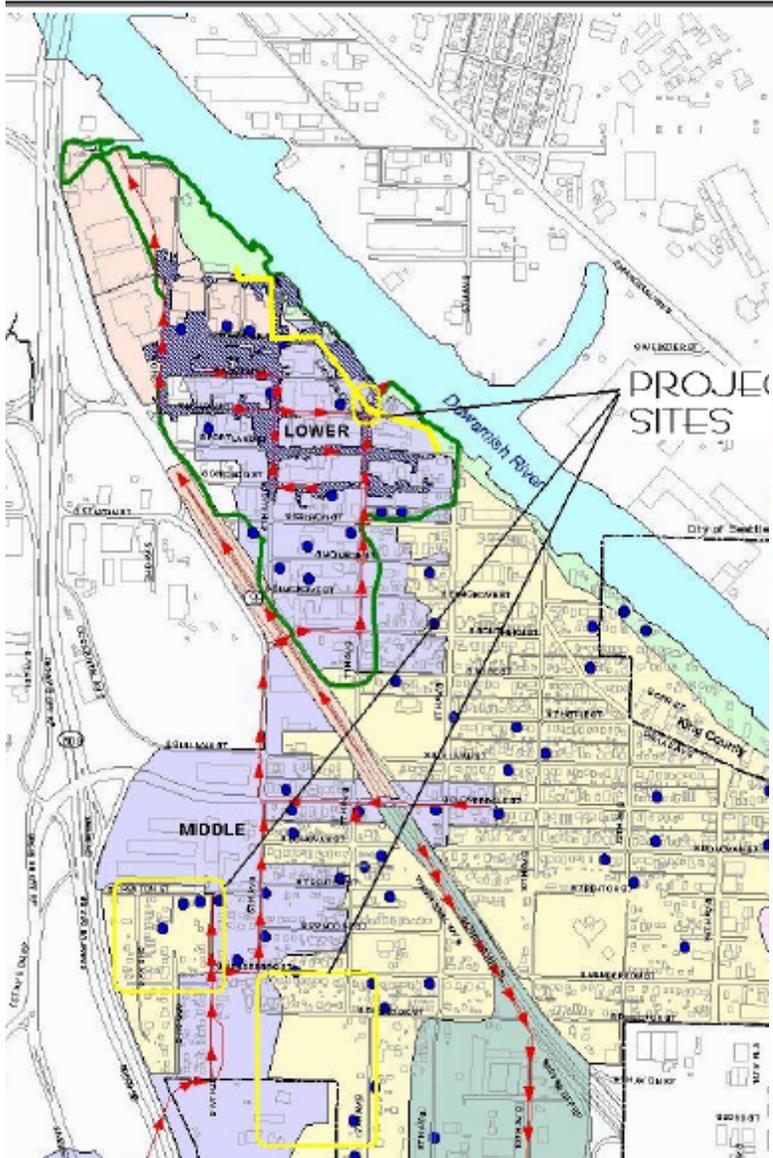


Figure 5 - Site of a Local Business close to the Duwamish River (11-18-2003)

# Cedar-Sammamish Strategy

- Reduce flood velocities and volumes that threaten critical public infrastructure, residential dwellings, and block sole-access roads
- Reduce public safety risks associated with neighborhood-scale flooding and channel migration
- 2009 Work Program
  - Implement levee setbacks where buyouts are not necessary
  - Work with landowners to acquire property necessary for levee setbacks in subsequent years
  - Evaluate options for large scale neighborhood flood and channel migration risks

# Cedar Grove Buyout and Relocation and Rainbow Bend Levee Setback (2008)

- Multiple landowners
- Multiple partnerships
- Multiple fund sources (12 separate grants)
- Multiple years to complete
- Acquisition of river bend allows setback or removal of levee to increase storage and conveyance



# Jan Road Levee Setback (\$1.1M)

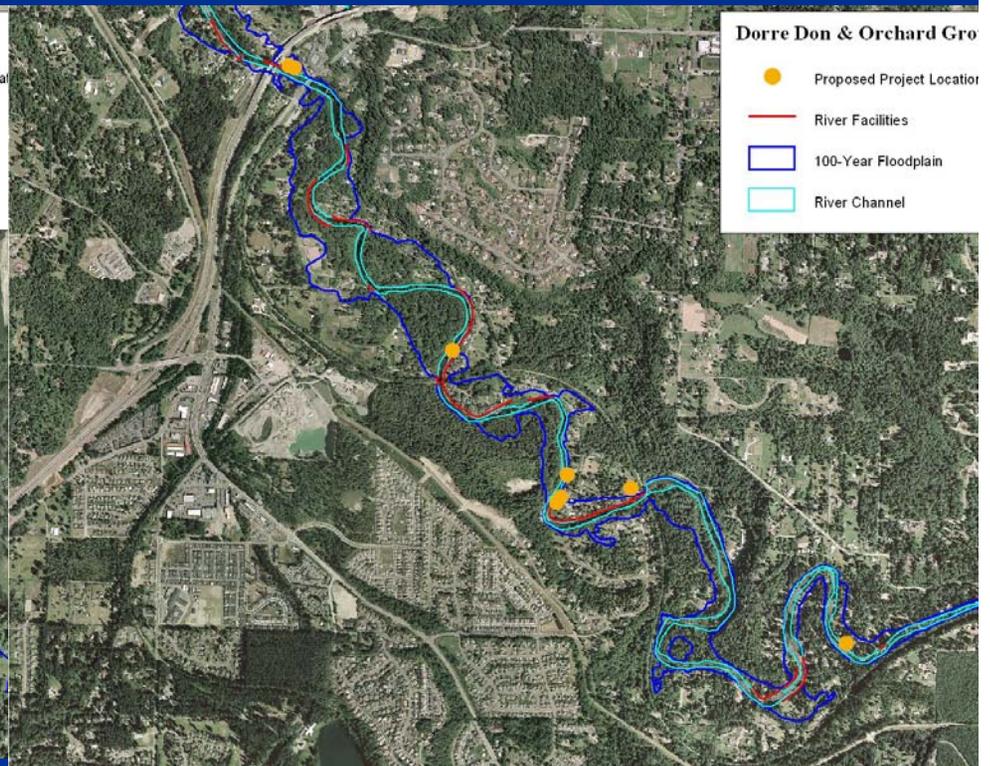
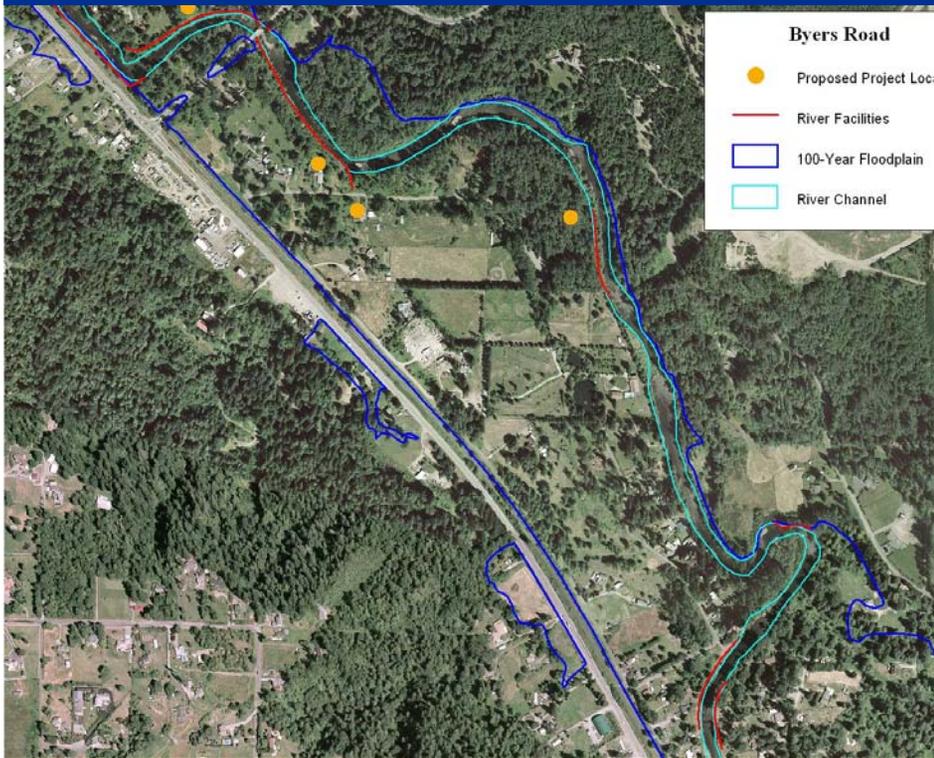




# Cedar River: Herzman Levee Setback (\$1.2M)



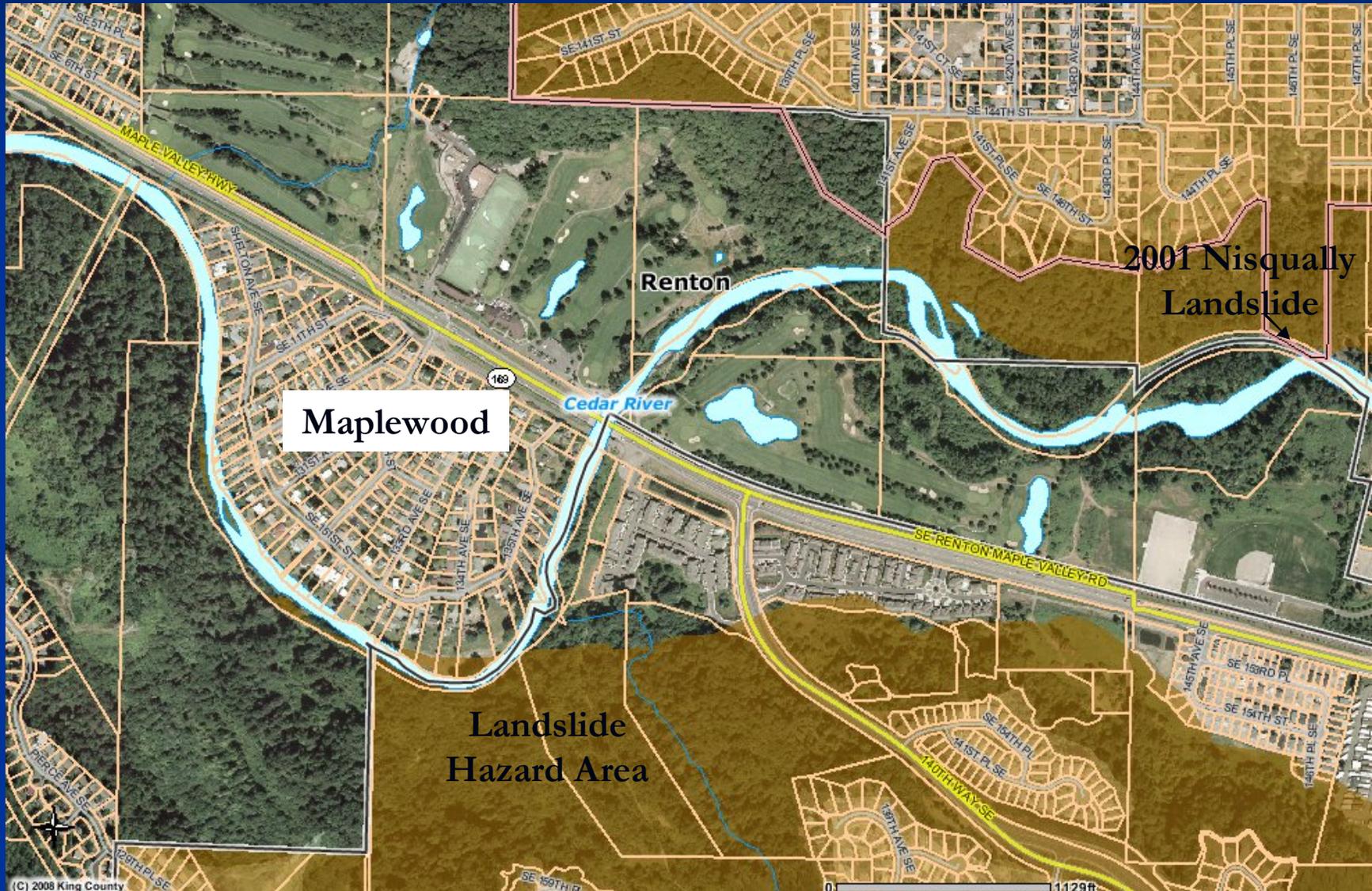
# Cedar River: Dorre Don and Byers Bend Hazard Mitigation Study (\$230,000)







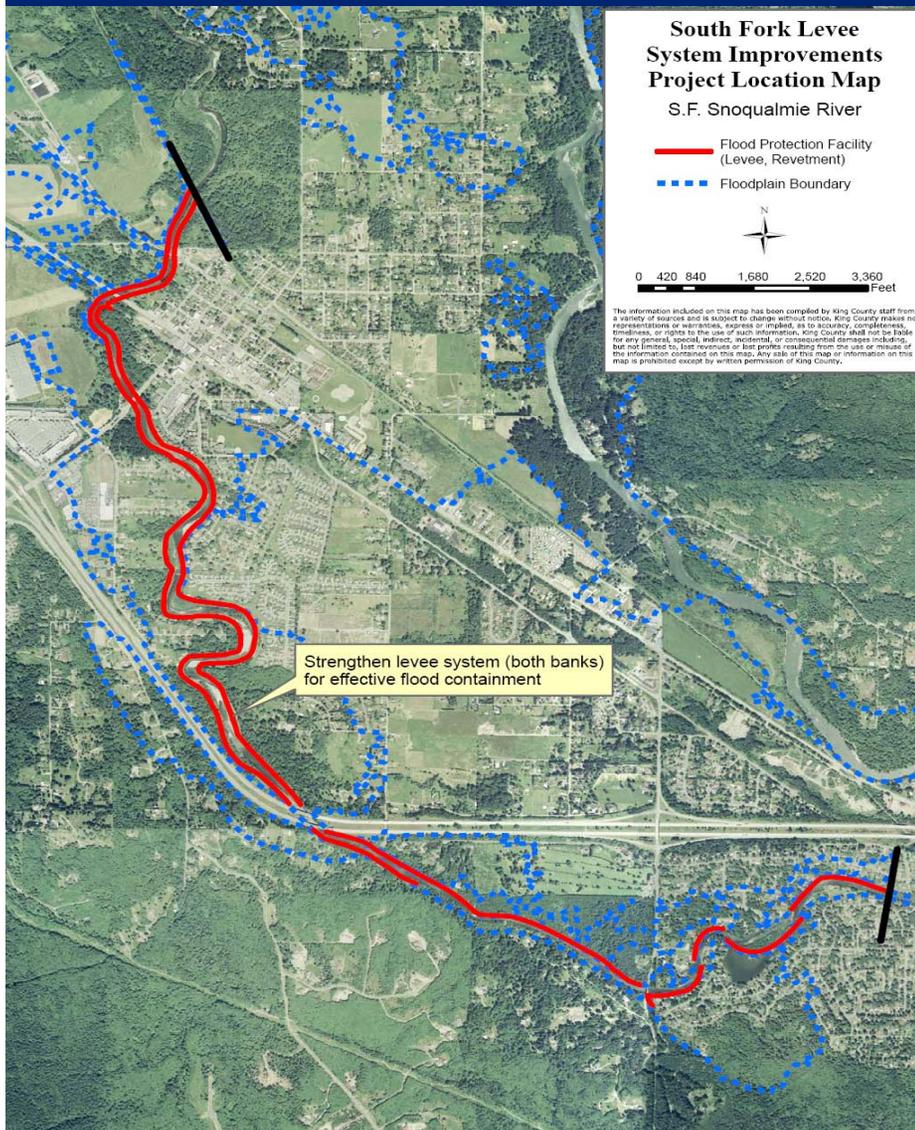
# Cedar River: Maplewood Neighborhood Hazard Mitigation Study (\$115,000)



# Snoqualmie and SF Skykomish Strategy

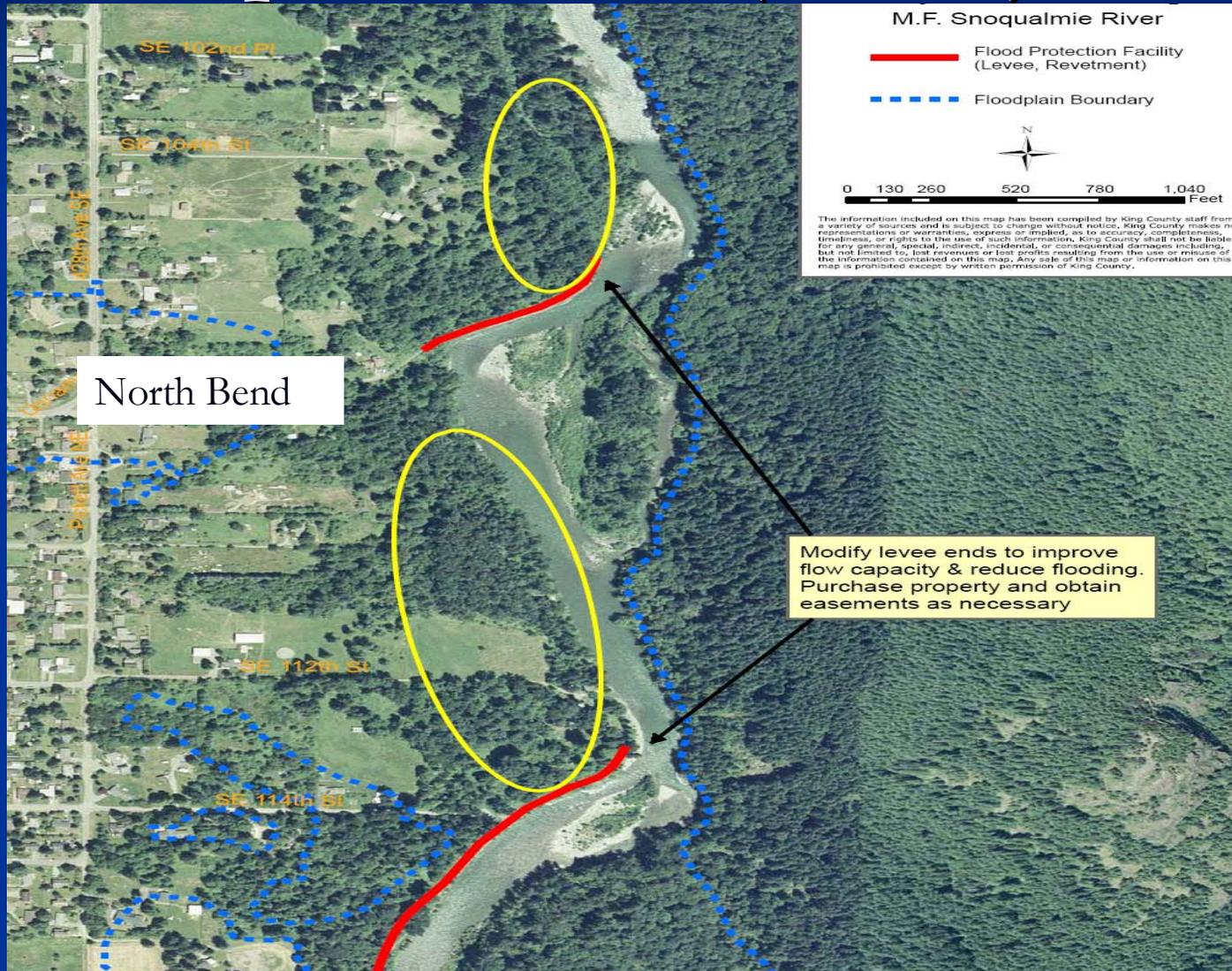
- Strengthen and rehabilitate flood containment facilities
- Buyout or elevate at-risk structures

# South Fork Snoqualmie Levee Improvements (2008)



- Geotechnical studies of levee materials and structural stability - scoping
- Repair sinkholes this summer
- Levee rehabilitations in out years

# Snoqualmie: Middle Fork Capacity Improvements (\$3.6M)





# City of Snoqualmie Acquisition (\$236,000)

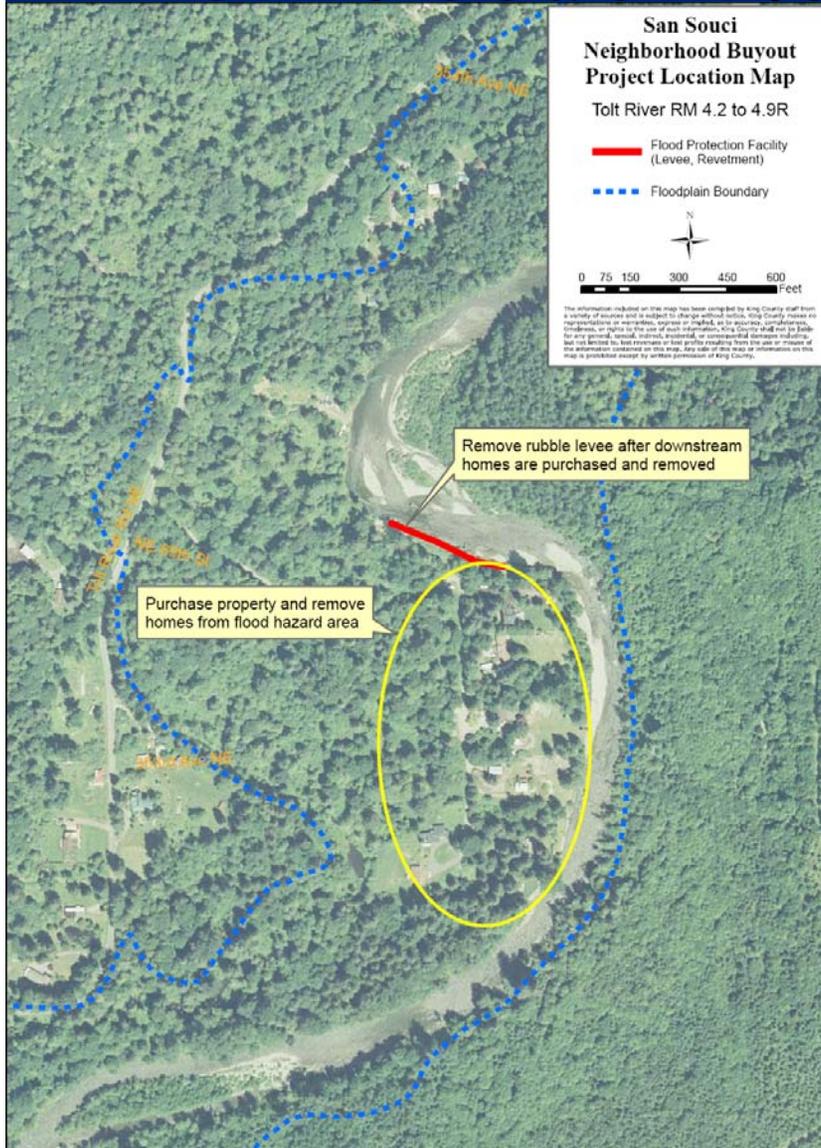


- Leverage City and Grant funds
- Complete section of Railroad Avenue buyouts
- Future project in 2014 with City of Snoqualmie to focus on Park Street

# Snoqualmie Tributaries: Alpine Manor MHP Buyout and Relocations (\$7M)

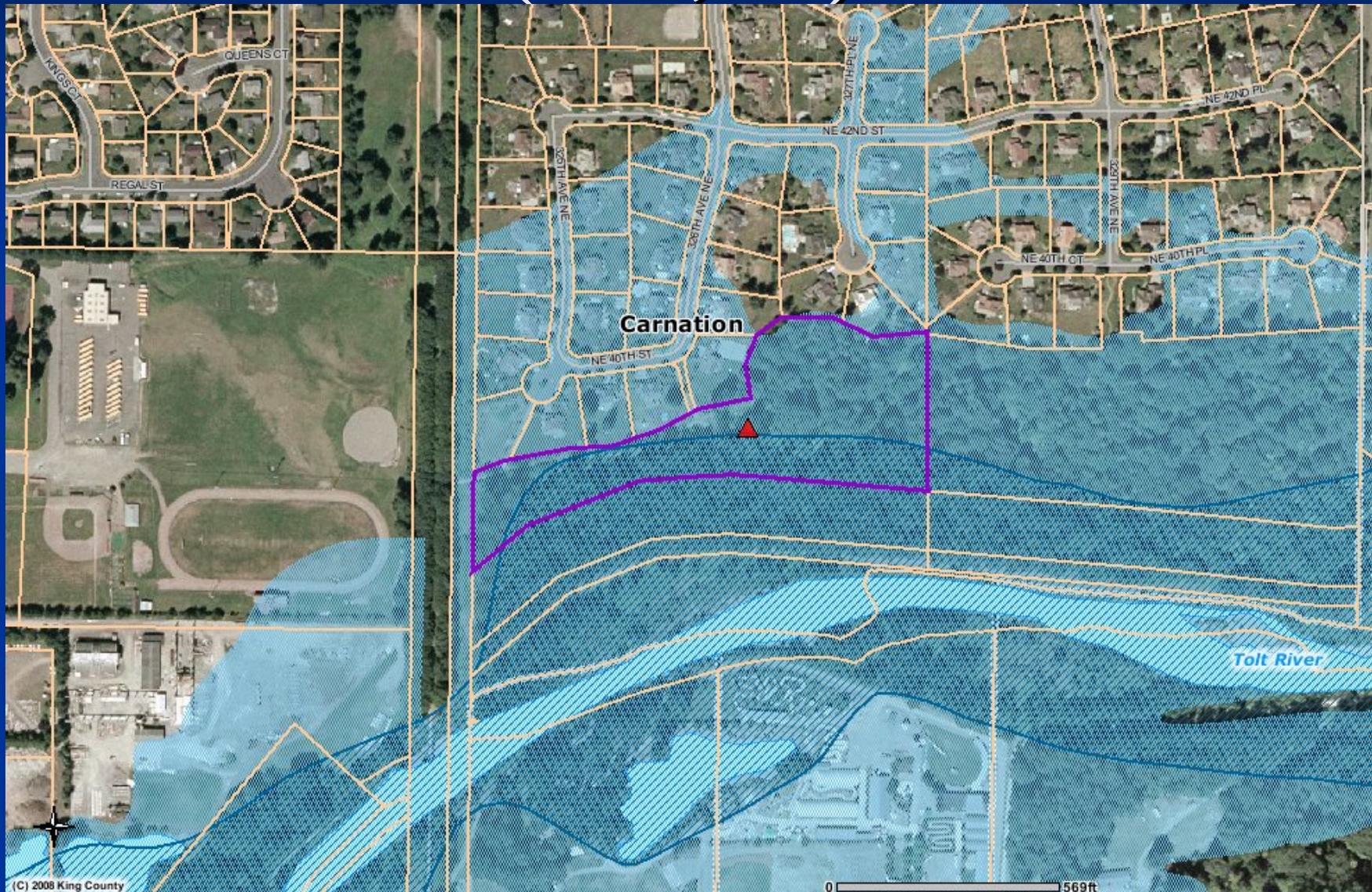


# Tolt River: Sans Souci Neighborhood (\$2.5M)



- Deep, fast floodwaters throughout neighborhood
- Residents isolated, first responder access limited
- Revetment removal following buyouts
- Coordination with Seattle City Light

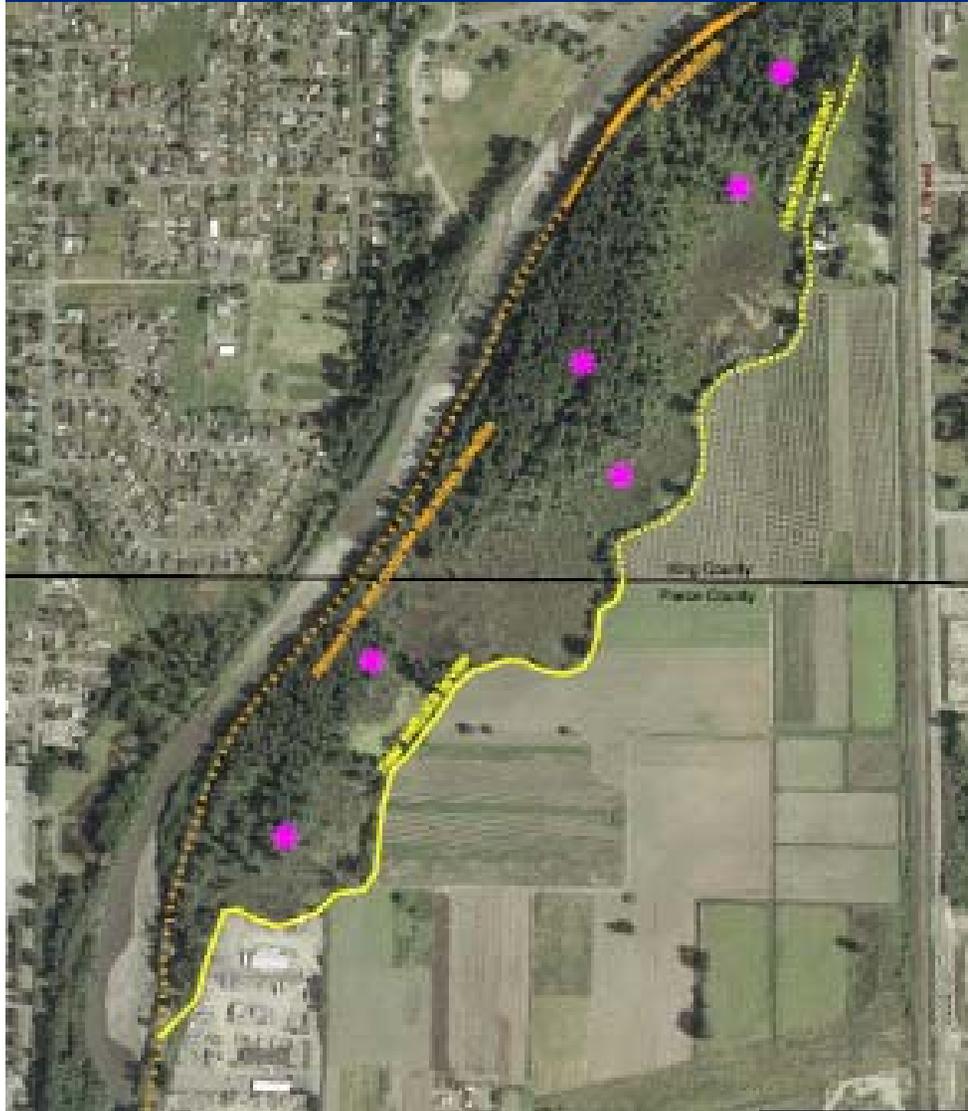
# Tolt River: Lower Tolt Acquisition (\$892,000)



# White River Strategy

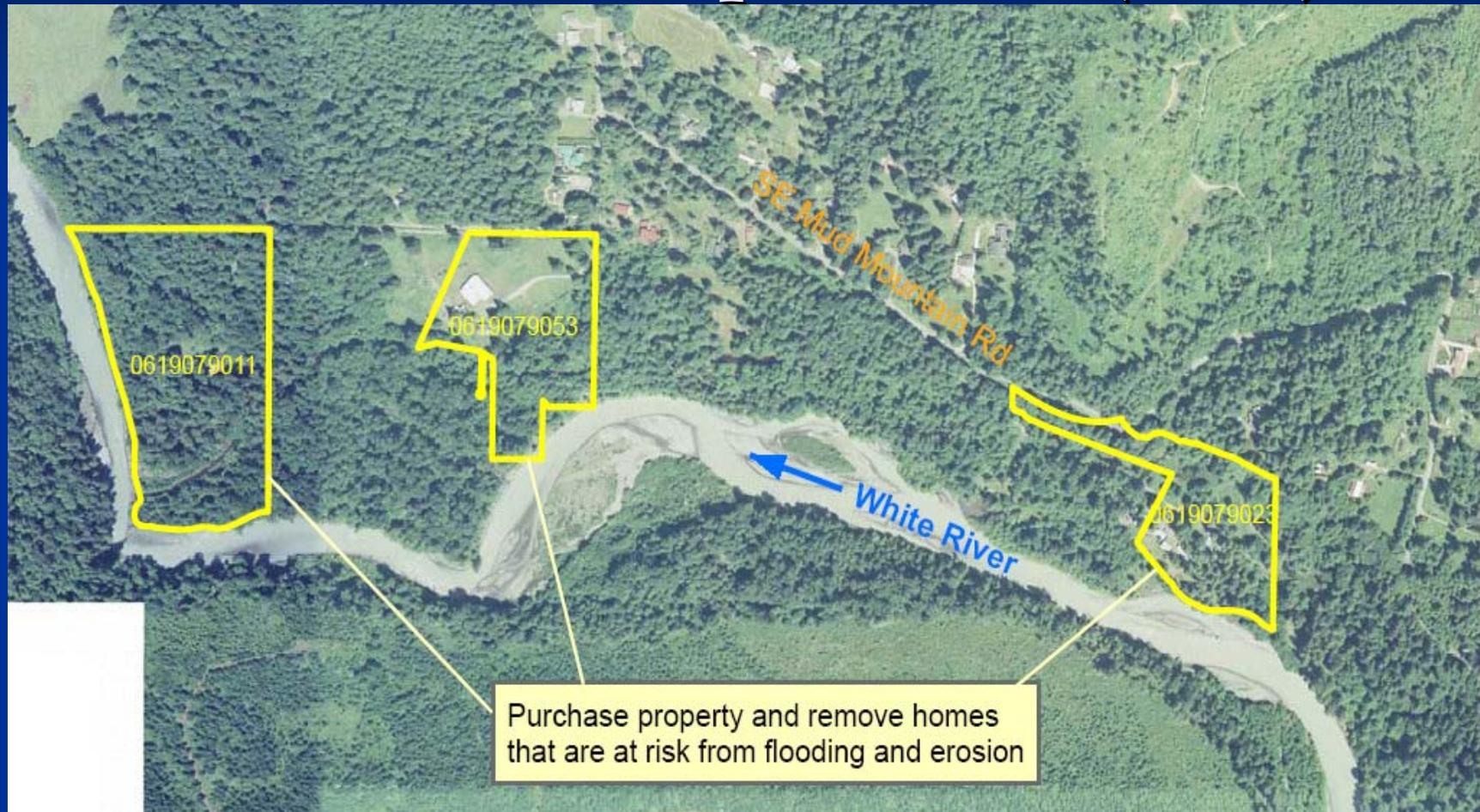
- Reduce risks to public safety by setting back levees to increase flood storage and conveyance capacity
- Buyout residential structures at risk of flooding and rapid channel migration
- No new projects in 2009

# White River: Countyline to A Street (2008)



- Design underway
- Landowner negotiations underway
- Developing inter-local agreement with Pierce County
- Construction scheduled for 2010

# White River: Red Creek Acquisitions (2008)

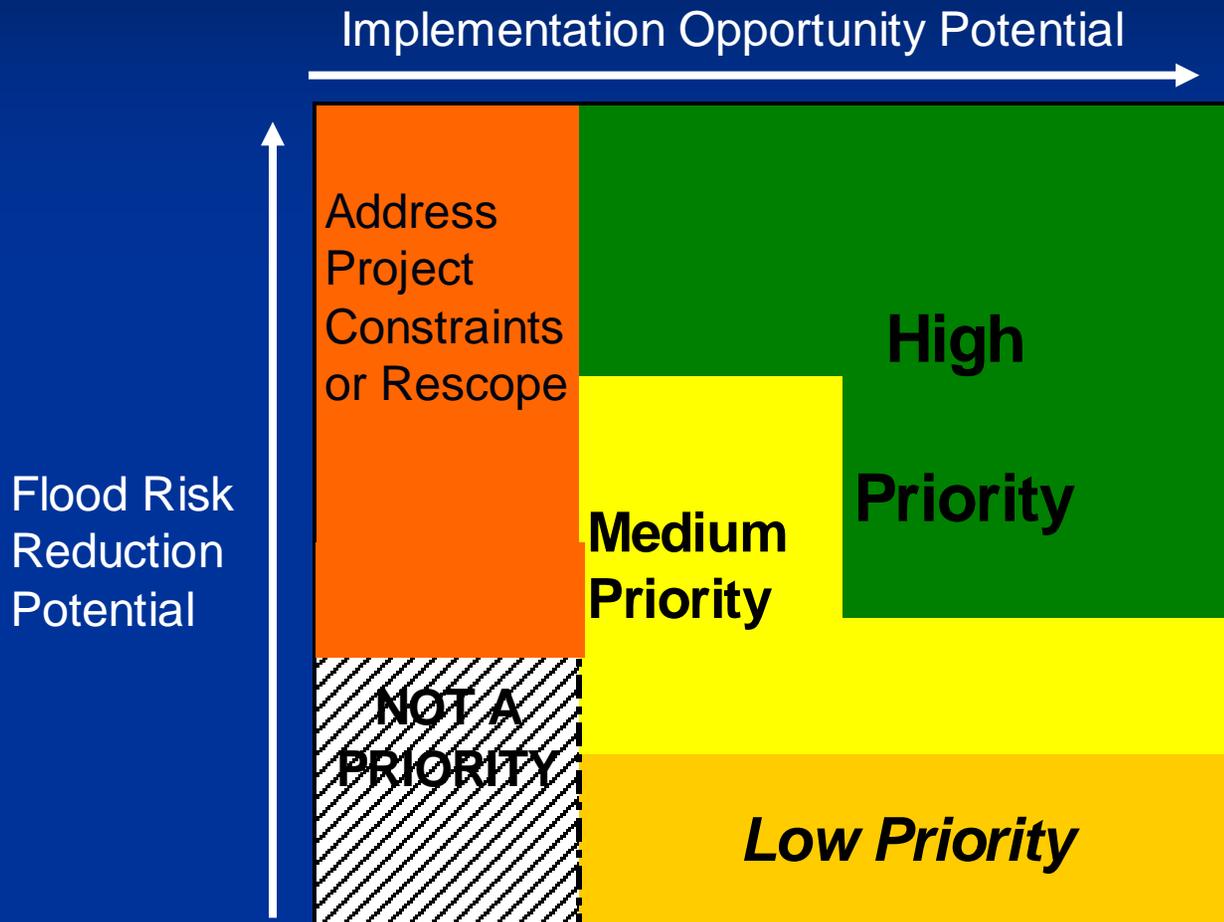


# High Flood Risk Reduction Projects not Implemented in 2009

## ■ Projects Not Implemented in 2009

- Boeing Levee Setback – 150' setback complete, bench and levee toe work still needed, potential to partner with Army Corps ERP and WRIA 9 to complete this work
- Abandoned Bridge Revetment – removal of bridge abutment should follow completion of Alpine Manor flood buyouts to avoid increased flood risks to residents
- Tolt Pipeline – resequenced based on engineers report, monitor closely for any sign of increased erosion
- Snoqualmie Residential Flooding – obtain FEMA grant support and partner with the City in 2013-2014

# Moderate Flood Benefit; High Implementation Potential



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

# Moderate Flood Benefit; High Implementation Potential

- Recommendations:
  - Set minimum leveraging requirement (2:1)
  - Cap for District contribution (\$500,000)
  - Cap for cumulative District contribution within overall budget (5-10%)
  - Minimum threshold (10-year list cutoff was 52%)
  - Consider impacts on higher-scoring projects and fund balance
  - For 2009, focus on projects in the top third of the flood risk priorities

# Moderate Flood Benefit; High Implementation – Middle Green Acquisition

- Severe channel migration hazard
- \$2M total costs for one home and 3 parcels; grants pending for \$1.5 million
- \$500,000 request
- Landowner willing
- Flood risk score of 58%



# Moderate Benefit; High Implementation

- Tolt Mouth to SR-203 Reconnection
  - Project outside of 10-yr CIP based on flood risk score
  - \$700,000 Proposal
  - 10% of project cost
  - Ready for construction



# 2009 Preliminary Capital New Starts

## ■ Green River

- Briscoe 1-3, 5-8
- Desimone 1
- Desimone 2
- Desimone 3
- Desimone 4
- Riverside / Reddington
- Segale 2
- Segale 3
- Segale 4
- South Park

## ■ Cedar-Sammamish

- Jan Road Levee Setback
- Herzman Levee Setback
- Dorre Don/Byers Hazard Evaluation
- Maplewood Hazard Evaluation

## ■ Snoqualmie and Tribs

- Middle Fork
- Sans Souci
- Lower Tolt Acquisition
- City of Snoqualmie Acquisition

# 2009 Draft Capital Work Program

- 18 Proposed New starts
- \$59M in lifetime project costs (real dollars)
- Median flood risk reduction = 80%
- 63% of lifetime project costs are above mean
- 80% of lifetime project costs are above 75 percentile
- 100% of lifetime project costs are above 68%

# Cost Model Assumptions

- Cost Estimate Assumptions
  - Past King County experience: 185 capital projects since 1993; over 100 acquisitions
- Cost Allocation over Project Life
  - Projects range from 1-6 years
  - Acquisition front-loaded to enable landowner negotiations
- Inflation of Project Costs
  - Based on King County Office of Management and Budget Financial Forecasting
  - Property values: 8.9% in 2008, 7.6% in 2009, 6.8% 2010-2014
  - Construction costs: 5.6% in 2008, 2.8% in 2009-2014

# 2009 Proposed Budget

- Capital = \$34.66M (85%)
- Operating = \$6.15M (15%)
  - Flood Preparation, Flood Warning Center, Post-Flood Activities (\$250,000 or 0.6%)
  - Annual Facility Maintenance and Assessments (\$1,060,000 or 2.6%)
  - Flood Hazard Studies, Mapping, and Technical Services (\$1,140,000 or 2.8%)
  - Flood Hazard Planning, Community Rating System, Grants, Outreach, and Repetitive Loss Mitigation (\$400,000 or 1%)
  - Program Implementation (\$1,060,000 or 2.6%)
  - Program Management, Supervision, and Budget (\$810,000 or 2%)
  - Central Costs (\$1,400,000 or 3.5%)
- 2009 Total Expenditures: \$40.8M

# 2009 Staffing Assumptions

- River Basin and Countywide Teams
  - Engineers
  - Environmental Scientists
  - Program Managers
  - Public Outreach
  - Financial and Administrative Support
  - 34 FTEs: 21 Capital, 13 Operating
  - 85% Capital Expenditures; 15% Operating