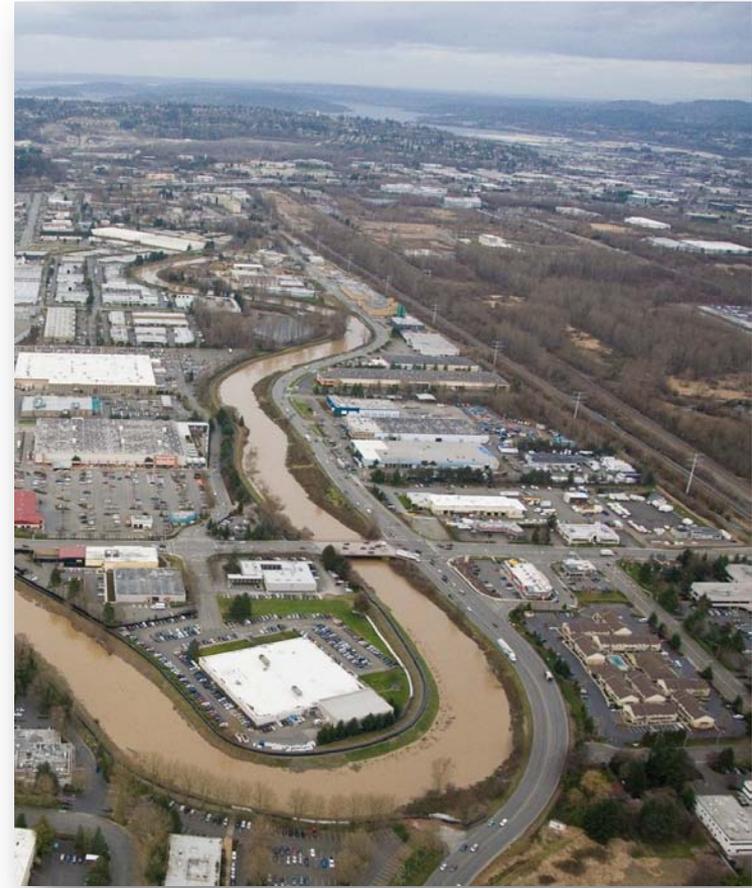


Green River System-Wide Improvement Framework (SWIF)

King County Flood Control District
Advisory Committee

May 30, 2013



Protecting public safety, the regional economy and critical infrastructure.

What is the Green River SWIF?

- 2-year planning process until February 2015
- Key issues:
 - Levels of protection
 - Risk-based levee improvements
 - Public outreach
 - Vegetation management
 - Long-term maintenance costs
 - Habitat/water quality
- Identify problems, recommend improvements, and prioritize solutions based on flood risks

Major Tasks

- Stakeholder Committee process
- Agreed upon goals and objectives, vision, and strategy
- Public outreach
- Evaluate flood risks and level of protection alternatives
- Assess habitat restoration opportunities and vegetation management
- Develop capital projects and financing plan

Tasks and Timeline

Green River SWIF Tasks and Timeline



◆ Key Decision Points

1. Decision on SWIF scope
2. Agree on G&O, vision, strategy
3. Horseshoe Bend effort – decision on next steps
4. Review Deficiencies Plan
5. Level of Protection direction
6. Risks/damages – residual risks
7. Direction on vegetation management alternatives
8. Screening criteria
9. Alternatives analysis – select final alternative
10. Implementation/financing plan
11. SWIF review/approval of submittal

Task 1 – Convene Stakeholder Committee (SC) and Conduct Public Outreach

Why are we doing this task?

- Advise Flood District on policy issues and capital improvements
- Seek broad stakeholder support

Products and Timeline:

- Stakeholder Committee – July 2013
- SC Work Plan – July 2013

Estimated Cost:

- Consultant Costs: \$75,000; Staff time: 870 hours

Task 1 – Convene Stakeholder Committee (SC) and Conduct Public Outreach

Why are we doing this task?

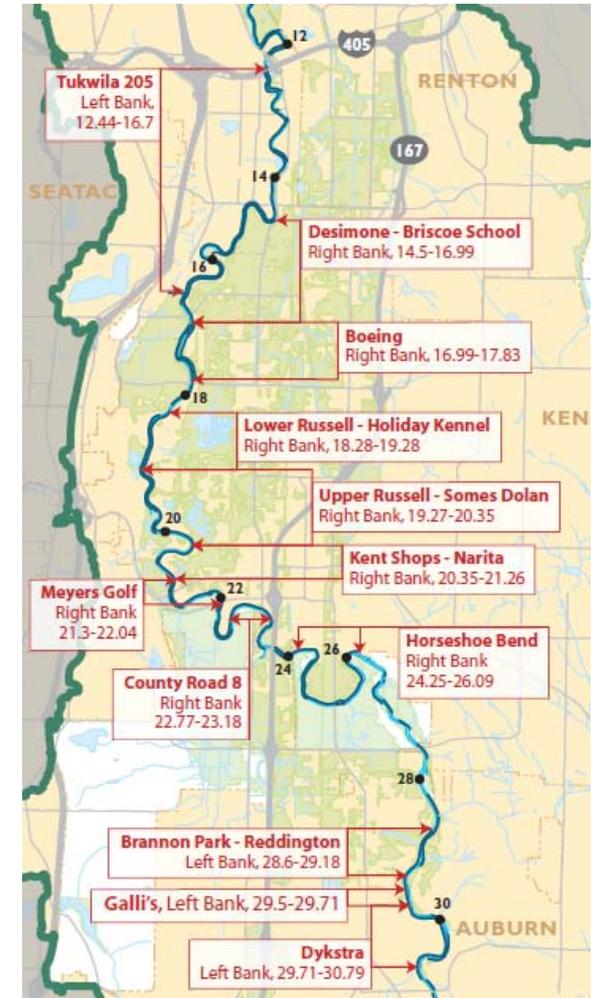
- Provide input on investment strategy
- Awareness of residual risks

Products and Timeline:

- Public Outreach plan – at least 2 public meetings (Q413, Q314)
- Communication strategy (deficiencies/risk) – Oct. 2013

Estimated Cost:

- Staff time: 250 hours



Task 2 – Goals & Objectives, Vision and Strategy

Why are we doing this task?

- Sets direction for desired future conditions and alternative approaches
- Establishes clarity for the participants

Products and Timeline:

- Goals: Level of protection; Enable accreditation – Aug 2013
- Vegetation goals – Aug. 2013
- Refined Scope of Work – Aug. 2013

Estimated Cost:

- Consultant Costs: \$0; Staff time: 220 hours

Task 3 – Vegetation Assessment and Retrospective, focused on PL 84-99 facilities

Why are we doing this task?

- ESA listing and water temperature
- Corps of Engineers concerned about vegetation on levees
- Document conditions/problems to inform decision making

Products and Timeline:

- Map existing vegetation
- Impacts on levee integrity/stability
- Vegetation Assessment Report –
Dec. 2013

Estimated Cost:

- Consultant Costs: \$30,000; Staff time: 1040 hours



Task 4 – Existing Conditions, Facilities, Infrastructure, Land use, HH Dam

Why are we doing this task?

- Inform decisions on deficiencies and future improvements
- Target problem areas and compare risks
- HHD constraints and opportunities

Products and Timeline:

- Tech memos on discipline topics - ongoing
- Plan for corrective actions for levee deficiencies – Dec. 2013
- Existing Conditions Report – March 2014

Estimated Cost:

- Consultant Costs: \$300,000; Staff time: 2800 hours



Task 4 – Existing Conditions, Facilities, Infrastructure, Land use, HH Dam

Elements of Existing Conditions Report:

- River channel – sediment, migration, scour depths
- Hydrology/hydraulics – Conveyance capacity, water levels
- Levee problems – Where, how bad?
- Land use – critical facilities, infrastructure, development trends, economic impacts
- Aquatic Resources
- Howard Hanson Dam – structural or operational changes to increase capacity

Design Flood Hydrographs for the Green River Basin

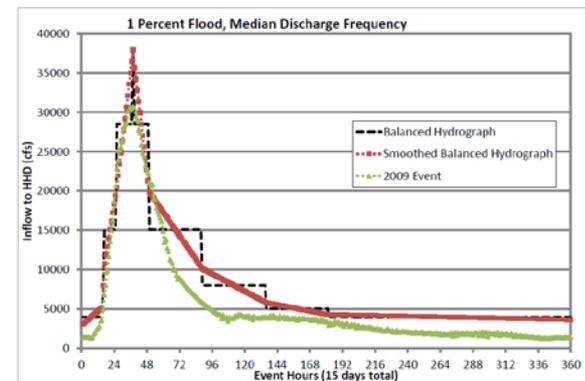


Figure 1 – Example balanced hydrograph, with shape and timing based on January 2009 flood event



Task 4.2 – Collect new data to fill critical data gaps

Why are we doing this task?

- Fill critical data gaps needed to assess risks

Products and Timeline:

- Collect/assess new data (within time/budget constraints) – June 2014
 - Geotechnical analysis of existing levees
 - Geomorphic analysis – channel migration and bed scour
 - Levee geometry – identify freeboard deficits between levee elevations and level of protection alternatives

Estimated Cost:

- Included in task 4 budget above

Task 5 – Evaluate Flood Risks and Analyze “Level of Service” Alternatives

Why are we doing this task?

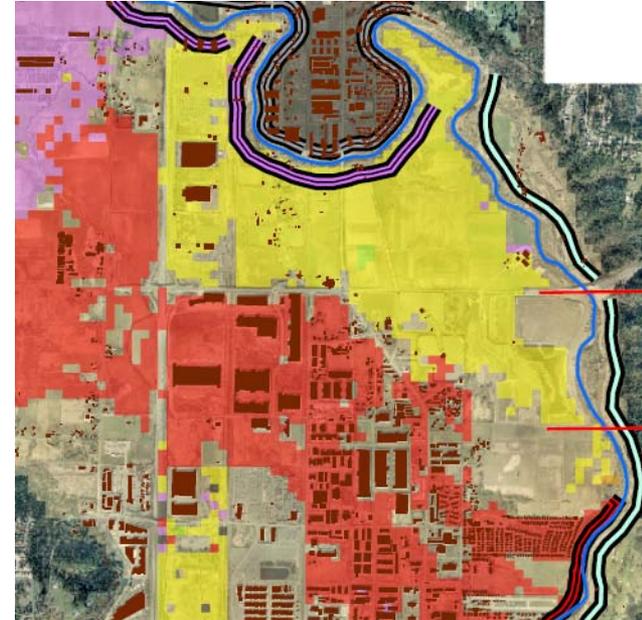
- Levee improvements decisions require info on risks/damages to assess future capital needs

Products and Timeline:

- Report on flood risks/damages by levee reach (May 2014)
- LOS tech memo – evaluation of alternatives and recommendations (Dec. 2013)

Estimated Cost:

- Consultant Costs: \$150,000; Staff time: 1250 hours



Task 6 – Assess Habitat Restoration Opportunities and Develop Vegetation Management Alternatives

Why are we doing this task?

- Vegetation constraints result in regulatory conflicts with ESA and Clean Water Act for habitat and water temperature
- Water temperature exceeds standards (TMDL)

Products and Timeline:

- Green River salmon habitat projects – March 2014
- Develop and evaluate vegetation management alternatives – Aug. 2014

Estimated Cost:

- Consultant Costs: \$80,000; Staff time: 1810 hours



Task 7 – Capital Project Development

Why are we doing this task?

- Identify alternatives to achieve level of protection, long-term maintenance, and habitat needs
- Evaluate and select final alternative
- Planning-level designs for capital projects
- Priorities and financing



Products and Timeline:

- Alternatives Analysis Report – July 2014
- Capital project conceptual designs – Dec. 2014
- Implementation and Financing Plan – March 2015

Estimated Cost:

- Consultant Costs: \$220,000; Staff time: 2040 hours

Task 8 – Develop Interim Risk Reduction Measures

Why are we doing this task?

- Need interim plan to reduce inundation risks while longer-term solutions are planned and implemented

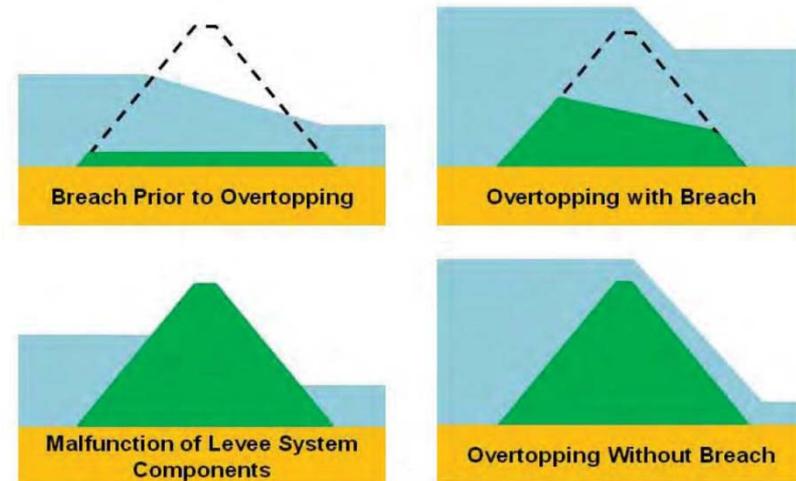
Products and Timeline:

- IRRM Plan (non-structural and structural components)
- Submit draft plan – Sept. 2014

Estimated Cost:

- Costs included in Task 4 and 7

Figure 1. Inundation Scenarios



Task 9 – Submit SWIF for FCD and Corps of Engineers Approval

Why are we doing this task?

- FCD is lead agency and must review/approve draft SWIF
- PL 84-99 eligibility granted for 2 years pending completion of SWIF

Products and Timeline:

- Final Reports and draft SWIF to FCD – Jan/Feb 2015
- SWIF and vegetation variance materials to ACOE – Feb/March 2015

Estimated Cost:

- Consultant Costs: \$10,000; Staff time: 100 hours