
**King County Flood Control District
Semi-Annual 2014 Performance Report
Per Flood Control District Resolution 2008-17**

October 2014



King County

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- Attachment B: 2014 April–September Operating Program Expenditures

King County Flood Control District Semi-Annual 2014 Performance Report (April–September)

I. Purpose

This report provides the King County Flood Control District's (District) Board of Supervisors with the implementation status of each element of the District's annual work program.

II. Scope of Services

The District's work program is comprised of two major components:

1. A capital improvement program to rehabilitate flood protection facilities and other projects to protect structures at high risk of flooding; and
2. Operational and programmatic activities, such as identifying flood risks, communicating those risks to the public, preparing for and responding to flood events, maintaining over 500 facilities in King County's flood protection system, and coordinating the District Advisory Committee and Basin Technical Committees (BTCs).

Capital Improvement Program Implementation

Projects proposed in the District's capital program reduce risks to public health, safety, and critical public infrastructure from flooding, erosion, and rapid channel migration. A detailed description of flood hazard management conditions and objectives for each major river system is available in the adopted 2006 King County Flood Hazard Management Plan, which serves as the District's Comprehensive Plan, as well as the 2013 King County Flood Hazard Management Plan Update and Progress Report adopted by King County. The District's capital program fulfills one or more of the following flood hazard management objectives:

- Repair, rehabilitate, and improve flood facility protection throughout major commercial, industrial and residential areas.
- Reduce hazards by removing flood, erosion, and landslide-prone residential structures.
- Improve flood water conveyance and capacity.
- Provide safe access to homes and businesses by protecting key transportation routes.

The District's 2014 revised capital program includes \$125 million in appropriations (including carryover from 2013). Of this amount, approximately \$7.3 million is backed by external grant revenue, \$13 million is dedicated to the Subregional Opportunity Fund for all 40 jurisdictions in King County, \$2.6 million is dedicated to the new Flood Reduction Grant Program, and \$9.1 million is dedicated to the Cooperative Watershed Management Grant Program to fund habitat projects proposed in the Snoqualmie, Cedar-Sammamish, White, and Green River watersheds.

Highlights of capital program implementation to date in 2014 include:

Corridor Planning – Corridor planning is underway on the Tolt, South Fork Snoqualmie, Cedar, and Green Rivers.

South Fork Snoqualmie Corridor Plan: Existing conditions work is completed and current conditions reporting is being drafted. Stakeholder engagement is underway and public meetings are planned for October 2014. South Fork Snoqualmie Corridor Planning efforts are expected to be on track for second quarter 2015 completion.

Tolt River Corridor Plan: Analysis of risks posed to humans, infrastructure, buildings, and land by flood hazards was initiated following the completion of draft final existing conditions reports. Coordination with project stakeholders continues, and an outreach plan including a public meeting and management briefings was established for the remainder of 2014. Floodplain management action alternative development and evaluation was initiated and will continue through the end of 2014 on schedule to complete the Corridor Plan in the second quarter of 2015.

Cedar River Corridor Plan: A consultant has been hired to provide planning services. A request was submitted to the U.S. National Park Service for assistance with river recreational aspects of corridor planning in that basin. The Cedar River Corridor Plan is expected to be on track for 2016 completion.

Green River System-Wide Improvement Framework (SWIF): Work continues on schedule with alternatives analysis underway. The SWIF is scheduled for completion in February 2015; however additional time may be needed depending on meeting decision timelines in the fourth quarter 2014 and early 2015.

Alaskan Way Seawall Construction – During the reporting period, the City of Seattle was reimbursed for \$17 million in engineering design expenditures related to the replacement of the Alaskan Way Seawall. The City currently anticipates construction in 2015. The project protects commercial areas of downtown Seattle, including regional transportation corridors such as the ferry terminal, SR-99, and regional rail lines.

Cedar River Gravel Removal Project – This project is a partnership between the District and the City of Renton. Between April and September 2014, a consultant team managed by the City conducted several technical studies including: hydrologic, hydraulic, geomorphic, bank stability sediment characterization, environmental/habitat and constructability. Based on results from these studies, the team has developed a 30 percent design and corresponding cost estimate, consulted with key stakeholders and regulators, and prepared permit documents. Final design, negotiation of mitigation requirements and submittal of permit applications is underway, and construction is expected to begin in summer 2015.

Lake Sammamish Willowmoor Floodplain Reconnection Project – During the reporting period, the project team conducted several technical studies including hydrologic, hydraulic, habitat (aquatic and terrestrial) and water quality. Based in part on the results, staff developed a suite of draft alternatives to reconfigure the Sammamish River Transition Zone. Staff hosted two Stakeholder Advisory Committee (SAC) meetings during the reporting period. Alternatives refinement is underway; recommendation of a preferred alternative is expected by early 2015.

Green River SWIF – Staff supported the development of key milestones, which included completion of the technical evaluation phase of the SWIF, including completion of the Lower Green River Current Conditions report that characterized the flooding, habitat, vegetation, and socio-economic dimensions of the Lower Green River and its valley. During the reporting period, the SWIF Technical Advisory Committee was formally convened five times and advisors participated in four additional SWIF work sessions. The District’s Board of Supervisors approved provisional flood protection goals for the Lower Green River; these level of protection metrics will guide the design of future flood risk reduction capital projects. Three SWIF Alternatives were defined and evaluated to inform the selection of a preferred SWIF Alternative. An evaluation of the Lower Green River shoreline was completed to identify opportunities to support increasing the number of shade trees and vegetative buffers, to achieve improved water temperature conditions.

South Fork Snoqualmie “Early Action” Project – This project is designed to reduce flood risks to a major regional transportation corridor as well as commercial and residential properties in and around North Bend. An early action project has been initiated for the South Fork Snoqualmie Corridor Plan to address I-90 flooding. The project team is in the early stages of project development with construction anticipated in summer 2016.

Sinnema Quaale Revetment, Lower Snoqualmie – This project will reconstruct approximately 800 linear feet of destabilized riverbank to support an embankment that supports the Snoqualmie Valley Trail, a regional fiber optic line, and SR 203. The project is on schedule for construction in summer 2015.

Winkelman Revetment, Lower Snoqualmie – This project will reconstruct approximately 1000 linear feet of the Winkelman (formerly RM 13.5) revetment where ongoing lateral channel migration threatens to undermine the City of Seattle’s Tolt River water supply pipeline. The project is in the preliminary technical and design alternative analysis phase and is on schedule for construction in 2016.

SE 19th Way Road Protection Revetment Repair, Lower Snoqualmie – This is a new project that was authorized as part of the 2014 capital budget adoption to repair the ongoing erosion of the SE 19th Way revetment. The project design will be initiated in the fourth quarter of 2014 with a target construction date of summer 2016.

Lower Snoqualmie Valley Needs Assessment – Staff conducted ground surveys of the Lower Snoqualmie Valley to assess mitigation needs and gain a better understanding about how flooding impacts agricultural operations in the Lower Snoqualmie Valley Agricultural Production District. A survey that gathered information from farmers in the valley is available at <https://www.surveymonkey.com/s/CFWMMFC>. Analysis on data gathered is currently being analyzed and is expected to inform the Fish Farm Flood Task Force.

Lower Russell Road Levee Setback Project – The project was in phase one during the reporting period. Accomplishments include developing and procuring a consultant team to aid in phase two pre-design work and developing a project management plan. A design charrette was held with key external stakeholders to better understand project constraints and opportunities. Acquisition efforts by the City of Kent and King County are ongoing. Alternatives selection is expected in February 2015.

City of Kent Partnership Projects – Staff coordinated with the City of Kent to review engineering designs and plans for multiple projects, including the Boeing and Hawley levees and the Briscoe floodwall funded by the State of Washington, as well as a secondary levee at the north reach of the Upper Russell levee.

Green River Flood Damage Repairs – Two levee sections were damaged from high flows in March. One site is in Auburn; the second in Tukwila. Staff is working with the U.S. Army Corps of Engineers (Corps) to update the costs for these repairs, and will update the 2015 proposal to reflect the most recent cost estimate when it is available. Both repairs will occur in 2015.

McAleer-Lyon Creek Channel Improvement Project - Lake Forest Park – Reimbursement was made to the City of Lake Forest Park for this project which will re-establish a more natural floodplain widening for Lyon Creek and upgrade undersized culverts in the project area. This expenditure is a portion of the 25 percent local share for Lake Forest Park's \$3 million Federal Emergency Management Agency (FEMA) grant.

Lower Coal Creek Flood Hazard Feasibility Study - City of Bellevue – Bellevue was reimbursed for a project which will increase the storage capacity of the regional detention pond while maintaining fish passage and increasing conveyance capacity at the five box culvert crossings.

Countyline to A Street Levee Setback - White River – During the reporting period, the Board of Supervisors authorized land acquisition, and King County submitted the remaining local permit applications and obtained a significant acquisition from the City of Sumner. This project will reduce flooding in residential neighborhoods in the City of Pacific, improve sediment storage, and enhance habitat.

City of Pacific Park Opening – The District authorized King County Roads crews to remove flood protection barriers (HESCOs) from the park driveways. This was done in collaboration with the City of Pacific and county crews completed the openings in two days (April 23 and 24). The HESCO barriers will be re-installed by mid-October 2014 to provide flood protection for city residents.

Acquisition and Elevation of At-Risk Structures – Three at-risk homes were elevated in the Snoqualmie basin during the reporting period; another 16 home elevations are underway. FEMA grants are currently pending for another two homes.

Acquisitions for Levee or Revetment Projects – During the reporting period, 20 acres were acquired on the White River for the Countyline Levee Setback project.

Sub-Regional Opportunity Fund – Payments were made to nine jurisdictions for over \$1.6 million in projects intended to improve local drainage and water quality conditions. The largest single payment was to the City of Bellevue, where over \$1.2 million funded two phases of a large stormwater retrofit project named the SE 30th Street/Sunset Creek Improvement – Phases 1 and 2.

WRIA Funding – Over \$1.4 million was paid to 17 separate non-profit or governmental agencies working on habitat conservation priorities in the Cedar-Sammamish, Green-Duwamish, and Snoqualmie watersheds.

Flood Preparedness, Regional Flood Warning Center and Post Flood Recovery Program

The District's operational work program includes a comprehensive approach to preparing and educating citizens for flood events, coordinating emergency response and regional flood warning center operations during flood events, and ensuring consistency across basins for post-flood recovery actions. Preparation for the 2014-2015 flood season was a major focus of activity during the reporting period.

Staff prepared for annual coordination meetings for internal staff and external partners that take place in October. These include:

- Interagency Flood Preparedness meeting, hosted by the King County River and Floodplain Management Section (RFMS), October 6
- Flood Warning Staff Training, hosted by King County RFMS, October 14
- Winter Weather Seminar, hosted by King County Emergency Management, October 16
- Advanced Flood Warning System Workshop, hosted by the National Hydrologic Warning Council with a presentation by King County RFMS, October 21
- Flood Warning Patrol Training, hosted by King County RFMS, October 23

New Apps and Technology

New versions of the King County Flood App for iOS and Android are in development and expected to be released in October. The first King County Flood App for the Windows phone is in development and expected to be released in October. Additional features were added to the Flood Warning website that allow users to access data and hydrographs of recent and forecasted river data. Several improvements were made to the back-end systems that manage the data used on the websites, apps and automated phone system.

Flood Hazard Studies, Mapping, and Technical Services Program

Flood Insurance Maps

Since 2010, issuance of new FEMA flood insurance maps has been on hold. FEMA is now conducting pilot projects to test new flood hazard mapping procedures at 26 sites around the nation. Until these pilots are complete and the results analyzed, flood hazard maps submitted by King County will continue to be on hold.

Landslide Mapping

The Flood District Board of Supervisors revised the 2014 budget to add technical analyses of landslide hazards that could intersect major river floodplains. A preliminary draft map of potential landslide hazard areas will be available in October.

Cedar River Inundation Area Mapping Pilot

Following a similar approach developed by the National Weather Service to display flood inundation mapping, this interactive mapping tool was completed using existing flood study information to better characterize flood hazards and inform capital project priorities along the Cedar River. The web-based tool will be available for public use in October to help increase public awareness of flood hazards on the Cedar River. The effectiveness of this tool will then be evaluated to determine whether it can be used as an effective communications tool to increase public awareness of flood hazards along other King County rivers.

Channel Migration Zone Mapping

Applying the County's adopted Channel Migration Zone (CMZ) mapping methodology, staff have initiated a technical study to prepare channel migration mapping for the Cedar and South Fork Skykomish Rivers. The technical information from these studies is being used to support river corridor planning and development of capital projects in these river basins.

Public Outreach, Flood Hazard Planning and Grants, and Repetitive Loss Mitigation

Significant outreach efforts during the reporting period include preparation for flood season, outreach about multiple construction projects, as well as outreach about floodplain planning, technical studies, and other public engagement efforts. Activities during April-September include:

1. Briscoe-Desimone Levee Improvement Project Press Event
2. Cedar River Annual Meeting Preparation
3. Cedar River Corridor Plan Outreach Planning
4. Circle River Ranch Community Meeting
5. Green River System-Wide Improvement Framework
6. Lower White River Countyline Reach Projects
7. Lower Russell Road Communications Planning
8. Lower Snoqualmie Valley Residential and Agricultural Flood Mitigation Project
9. Reddington Levee Setback and Extension Project
10. Riverbend Mobile Home and Recreational Vehicle Park Acquisition Outreach
11. South Fork Snoqualmie Levee Early Action Project Communications Planning
12. South Fork Snoqualmie River Corridor Plan Communications Planning
13. Tolt River Action Plan Communications Planning
14. Willowmoor Floodplain Restoration Project Public Meetings
15. 2014-2015 Flood Outreach/Take Winter By Storm Campaign
16. Recreational River Safety Proposal for 2015
17. Association of State Floodplain Managers Conference
18. Flood Control District Communications Protocols and Planning
19. Community Rating System Verification Documentation
20. Equity and Social Justice – Annual Report Article on the Riverbend Mobile Home Park
21. Large Wood Annual Meeting and Public Outreach Around River Hazards
22. MindMixer Civic Engagement Tool Training and Communications Planning
23. Flood Control District Sub-Regional Opportunity Fund Annual Outreach
24. Flood Control District Flood Risk Reduction Grant Fund Annual Outreach

Staff provided presentations at the annual national conference of the Association of State Floodplain Managers (ASFPM) in Seattle in June 2014. Presentations from the conference are available on the ASFPM website here: <http://www.floods.org/index.asp?menuid=801>

Community Rating System Discount

The Community Rating System (CRS) is a FEMA program that provides a discount on flood insurance if the local community implements a variety of public outreach, awareness, flood response, and floodplain management activities. King County is a Class Two community, one of the two highest rated counties in the United States. This results in a 40 percent insurance discount for policyholders in the special flood hazard area. According to the most recent data

provided by FEMA, this discount saved policyholders in unincorporated King County an average of \$578 per policy in 2012.

During the reporting period, preparations began for the CRS 2014 verification visit to maintain King County's Class Two status. Many of the materials (such as annual outreach to floodplain property owners, operations of the Flood Warning Center and Flood Alert system) also provide significant credit for other local governments in King County that participate in the program. Staff participated in trainings on the new CRS manual to ensure that King County can continue to maintain and document the Class Two rating in light of significant revisions to the program.

A regional CRS User's Group was established during the reporting period. The User's Group is comprised of all CRS communities within King County (Auburn, Bellevue, Issaquah, Kent, King County, North Bend, Renton, Snoqualmie), and the City of Redmond which is in the process of becoming a CRS participating community. The User's Group has received positive feedback from participating jurisdictions.

Leveraging External Resources through Grants and Partnerships

During the reporting period, two project proposals were submitted to the Washington State Department of Ecology for multi-purpose floodplain planning and projects. A ranked proposed project list in support of Ecology's \$50 million Floodplains by Design funding request will be considered in the FY 2015-2017 budget.

Three grant applications were also submitted to FEMA during the reporting period: elevation of 22 flood-prone homes in the Snoqualmie basin, acquisition of two at-risk homes along the Cedar River, and funding to update the District's Disaster Mitigation Act Plan. Based on preliminary information from FEMA, the planning grant has been selected for further review while the acquisition and elevation grants were rejected due to funding limitations. According to FEMA, approximately 50 percent of the funding will go to two states (Texas and Louisiana); 80 percent of the available funding will go to FEMA Regions 4 and 6 (areas that includes Texas and the southeast United States).

A FEMA grant application submitted in 2012 to elevate two homes on the Lower Snoqualmie will likely be awarded in 2015.

King County Flood Control District Implementation

During the reporting period, the Advisory Committee, with support from the Basin Technical Committees, reviewed recommendations on the 2015 budget and work program. The Advisory Committee's recommendations for 2015 were transmitted to the Board and are available online at: www.kingcounty.gov/environment/waterandland/flooding/flood-control-zone-District/governance/advisory-committee.aspx.

Staff also supported Board consideration of two separate 2014 budget reallocations: one to fund landslide hazard mapping along major river floodplains, and a second to authorize funding for maintenance, contract administration, and planning services called for in the 2014 work program. At the request of the Board, King County also executed a consultant contract to conduct an external evaluation of King County as Service Provider to the District.

Resource Management, Annual Maintenance, and Facility Assessment Program

This element of the District's work program includes maintenance of approximately 500 flood protection facilities along 119 linear miles of riverbank, approximately 820 acres of flood buyout properties, as well as pump stations and related flood protection infrastructure. Between April and September, 160 maintenance sites around the county were treated for noxious weeds, 388 knotweed infestations were treated, maintenance was performed at 125 sites and included actions such as weeding, irrigation, signage, debris cleanup, planting, and levee road mowing. Six at-risk structures were demolished and three were relocated.

The Black River Pump Station fuel system upgrade was substantially completed in this reporting period. The original single-walled diesel fuel tanks and lines were replaced with new double-walled equipment to better protect against spills.

Staff completed maintenance work to improve flood conveyance and sustain aquatic habitat in the Sammamish Transition Zone reach in Marymoor Park. This maintenance included mowing, removal of reed canarygrass and associated sediment from the upstream half of the transition zone. This work was completed as part of the commitment made in the April 2011 Lake Sammamish Flood Reduction Plan to address residential concerns around high water levels in Lake Sammamish in relation to the Transition Zone channel, and has become part of the dialogue with the Stakeholder Committee on the Willowmoor Project.

Following flooding in early March 2014, several cottonwood trees fell into the Cedar River at River Mile 7.3. While most of the spanning logs were relocated in May 2014, a remaining spanner, accumulated wood and other debris made it difficult to pass through this stretch. A temporary trail was marked with orange tape markers until large wood in the channel could be relocated and signage installed.

On May 10, 2014, a landslide occurred in the Royal Arch reach of the Cedar River that partially blocked the channel resulting in flooding of nearby properties. King County River and Floodplain Management Section staff were dispatched to the site to assess the hazards. Most of the landslide material was scoured away later that day by the river alleviating the flooding concern. Spanning trees and debris remained in the river channel that posed an extreme risk to river users. The landslide reach of the river remains closed to recreational river users due to continued presence of hazardous trees and debris.

Program Management and Supervision; Finance, Budget and General Administration

Major activities during the reporting period included preparation of two 2014 budget revisions for the Board, and 2015 budget materials for the Advisory Committee, Executive Committee and Board. Also included are time spent on Flood Control District billings, financial management and reporting, grant billings for external grants, and 26 reimbursement requests as part of the Subregional Opportunity Fund and the Cooperative Watershed Management grant programs. Finance staff provided 22 hours responding to audit questions from the District and the State Auditors Office. Contract administration staff supported the development of five new contracts, 14 work orders and seven contract amendments. New contracts and work orders issued during the reporting period total just over \$4.1 million. During this reporting period, contract administration staff also participated in five internal contract audits.