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# **King County Flood Control District Semi-Annual 2011 Performance Report**

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**October 2011**



**King County**

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**King County Flood Control District  
Semi-Annual 2011 Performance Report (April–September)**

**I. Purpose**

The purpose of this report is to provide 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. 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; and
- Provide safe access to homes and businesses by protecting key transportation routes.

The District's 2011 revised capital program includes \$26.4 million in new appropriations along with a 2010 carry forward of \$39.5 million for a total capital budget of over \$65 million, which is over 80 percent of the District's adopted budget. Of this amount, approximately \$4.8 million is backed by external grant revenue for flood mitigation and floodplain reconnection projects, and \$9 million is dedicated to the Subregional Opportunity Fund.

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The 2011 capital program included the following types of activities:

- Acquisitions to reduce flood risk;
- Elevations to minimize flood risk;
- Technical studies and design work to guide flood risk reduction projects;
- Repairs to flood facilities damaged in the January 2011 flood event; and
- Levee rehabilitation and reconstruction.

Highlights of capital program implementation during the April–September timeframe include:

- **Acquisition of At-Risk Structures:** During the 2<sup>nd</sup> and 3<sup>rd</sup> quarters of 2011, over 55 acres were acquired on 27 parcels for \$2.5 million, bringing the year-to-date totals to 100 acres on parcels at a cost of \$6.5 million. The most significant acquisition during the reporting period was the 28-acre Miller River Road property at the confluence of the Miller and South Fork Skykomish Rivers, which has been an acquisition target due to severe channel migration risk since the District's first adopted budget in 2008. The January 2011 flood caused rapid channel migration on the Miller, once again underscoring the risk at this site, and the importance of permanently removing people and structures from this high-risk location. Other acquisitions focused on the Cedar River (Rhode levee), the Tolt River (RM 1.1 Levee Setback), Lower Snoqualmie (Aldair Levee) and the Alpine Manor neighborhood along the Raging River.
- **Home Elevations:** Of the 18 currently active grant-funded elevations, 13 have been completed, two are in progress, two have not yet been initiated by the homeowner, and one has been transferred to the Severe Repetitive Loss program so that the homeowner's share of the costs could be substantially reduced. In addition to the grant-funded elevations, three additional home elevations have been completed in the Shamrock Park neighborhood by North Bend, two have been initiated in the Snoqualmie basin, and four more commitments to fund elevations have been made in the Shamrock Park neighborhood.
- **Major Levee Rehabilitation Engineering Design:** Engineering design work supporting feasibility and 30 percent design efforts at the Reddington, 180<sup>th</sup>-200<sup>th</sup>, Middle Fork Snoqualmie, McElhoe/Person, Rainbow Bend, and Belmondo flood facilities. These projects are scheduled to go to construction between 2012 and 2015.
- **Flood-Farm Task Force Implementation:** During 2011, four farm pads have been constructed and eight more are currently being modeled. Two barn elevations are now included in a pilot project and are scheduled for construction in the summer of 2012.
- **Cedar Rapids Repair, Cedar River:** The January 2011 flood caused large wood to collect on a county-constructed flood facility at Cedar Rapids. The Sheriff's Office closed this section of the Cedar River, and after a thorough evaluation, the log jam was removed over the summer construction period.

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- **Engineering and Construction Contracts:** As of September 2011, the Rivers Section of the Water and Land Resources Division (WLRD) has \$15.1 million in active contracts, and approximately \$970,000 in contract capacity that is in process.
  - **Capital Project Implementation Independent Review:** Staff participated in an independent review of project scoping and implementation practices performed by WLRD. This project is being implemented to identify potential process improvements to meet multiple objectives. The project is managed by the Department of Natural Resources and Parks (DNRP) Director's Office with independent engineering support. The review panel's report will be provided to DNRP by the end of 2011, and will be used to guide and improve project delivery practices.
  - **Sub-Regional Opportunity Fund:** The Opportunity Fund is comprised of 10 percent of the District's tax revenues collected each year, which are allocated to jurisdictions based on prorated assessed value for approved projects. The revised adopted budget for 2011 is \$9.085 million, including \$5.5 million in carry forward from 2010. During the reporting period, five jurisdictions claimed reimbursements of just over \$350,000. Total expenditures for the year are approximately \$600,000, for an overall expenditure rate of 7 percent. A request for 2012 project proposals for an additional \$3.6 million was distributed in September, and these proposals will be included in the 2012 budget proposal.

#### **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.

The focus for this period was on operational improvements, coordination and preparation for the coming flood season. The most significant flood preparation event was the announcement by the U.S. Army Corps of Engineers (USACE) that the Howard Hanson Dam will be fully operational in the coming flood season. The temporary levees will remain along the lower Green River levees through the flood season as a precaution, as the USACE improvements have not yet been tested, and the National Oceanic and Atmospheric Administration (NOAA) has issued a La Nina advisory for the coming flood season indicating that this winter will likely be cold and wet.

The Federal Emergency Management Agency's (FEMA) Emergency Management Institute held an Integrated Emergency Management Course on September 12–15, 2011 for local agencies involved in disaster response and recovery. The course included a full day exercise that simulated a major flood along the Green River. Representatives from King County participated in several topic areas.

On October 1, 2011, King County revised the flood phase thresholds for the Tolt and Cedar Rivers. Flood Warning staff observed the rivers at high flows and determined the flood phase thresholds did not accurately reflect the descriptions of the flooding impact. New phase

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thresholds were developed and additional details added to the flood impact descriptions. Consensus was reached regarding the changes with partner agencies including representatives from the City of Renton, Seattle Public Utilities and the National Weather Service.

### **Flood Hazard Studies, Mapping, and Technical Services Program**

In 2009, FEMA offered grant funding to the County to generate new coastal hazard mapping so coastal flood hazard information could be portrayed accurately and consistently for the entirety of the county shoreline. Nearly all of the existing FEMA mapping of Puget Sound shoreline is at least 30 years old and does not include estimates of flood elevations. During the reporting period staff shared technical products with the six cities along Puget Sound in King County, seeking their input and review as the study neared completion in September. As this is a technical study, each individual jurisdiction can determine if it wishes to use the information for flood risk reduction planning or actions.

During the first quarter of 2011, FEMA's administrator announced, in response to requests from several members of Congress, that FEMA would delay issuance of final flood insurance maps pending development of a new risk-based analytical approach intended to incorporate levees that are unaccredited but presumably provide some level of risk reduction. It remains unclear how FEMA will revise their "without levee" analytical approach to establishing flood insurance maps, and the timeline is similarly uncertain.

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

In an effort to better communicate the changes occurring in the Cedar River as a result of flood-risk reduction and habitat restoration and enhancement projects, King County has developed a Public Outreach Strategy for the Cedar River. The goal is to improve information sharing with Cedar River area residents and stakeholders about King County's plans for the river, the benefits to local communities, and the tradeoffs necessary to achieve them. Extensive research is being done, including a 700-person random sample telephone survey on River Management; a complementary online survey; and a Cedar River Focus Group. Survey results will be available in late October.

In preparation for the coming flood season, staff hosted the annual Public Outreach Strategy Workshop, which is a key step in coordinating interjurisdictional flood risk reduction outreach efforts and also provides floodplain communities with credits under FEMA's Community Rating System (CRS). The workshop included information on proposed changes to FEMA's CRS program that will take effect in 2012, an overview of the King County Flood Hazard Management Plan Update, and specific outreach activities that are being implemented in preparation for the 2011-2012 flood season. These include activities such as the flood awareness mailing, the October Flood Awareness Month and Take Winter by Storm campaigns, multi-language flood preparedness videos, and a new Facebook page.

#### *Leveraging External Resources through Grants and Partnerships*

The Rivers Section of WLRD currently administers ten FEMA grants to acquire or elevate floodprone structures. During the reporting period, work on the Riverside Mobile Home Park in the City of Snoqualmie was substantially complete. Residents were relocated earlier this year and demolition and site restoration are now complete. Additional grant-funded work includes acquisitions in the Alpine Manor neighborhood along the Raging River and demolition of

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acquired structures along the Cedar River and in the Kimball Creek neighborhood of the Snoqualmie Basin. Progress implementing grant-funded home elevations is described in the capital program section of this report.

In September, King County was notified that two FEMA Severe Repetitive Loss (SRL) grants were awarded the King County Flood Control District, out of a total of five grants awarded nationwide. As a result of the work to obtain these grants, six SRL structures will be elevated and one will be acquired at a total cost to the District of approximately \$15,000 and no costs to the homeowners.

#### *2006 King County Flood Hazard Management Plan Update*

The 2006 King County Flood Hazard Management Plan serves as the comprehensive plan for the District (RCW 86.15.110) and must be updated every five years to receive Community Rating System (CRS) credits. This will be the major planning effort of District staff for 2012. The Board of Supervisors adopted a motion identifying citizen committee participants as well as a scope of work for the update in July of 2011.

#### *Levee Vegetation Management and Partnering with the USACE*

As noted in the King County Flood Control District 2010 Semi-Annual and Annual Reports, the USACE has proposed a federal policy change that would create an extensive levee vegetation variance request process that would likely make variances more difficult to obtain. The final decision on this proposed policy has been delayed until April 2012.

During the reporting period, staff have worked on a multi-agency effort led by the Seattle District of the USACE to develop a functional and cost-effective levee vegetation framework that could be used by local levee managers. This framework was discussed with the USACE Headquarters in August, and staff presented information on the status of this work at professional conferences during September. In addition, staff participated in a tour of Green River bioengineered levees with engineers from the USACE's Engineer Research and Development Center (ERDC), which recently released a research report on the role of vegetation in levee stability.

In light of the on-going efforts at the local, regional, and national level to change the USACE levee vegetation management policy, King County has requested that the USACE delay further vegetation maintenance compliance activities until the regional framework process is complete.

#### *National Flood Insurance Program Biological Opinion*

In September 2008, the National Marine Fisheries Service (NMFS) issued a final Biological Opinion regarding implementation of FEMA's National Flood Insurance Program (NFIP). At issue was the effect of the NFIP on Puget Sound salmon and orca whales, which are listed under the Endangered Species Act (ESA). In the Opinion, NMFS recognizes that King County's regulations already go beyond the minimum requirements of the NFIP in ways that are likely to reduce habitat degradation for listed species.

In July 2010, FEMA sent a letter to all Tier One communities offering three options for compliance with the Biological Opinion. Tier One communities were identified as those communities that contribute to the abundance, diversity, geographic distribution and productivity of the listed species. Tier One communities, which include King County, were given until

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September 23, 2011 to demonstrate full compliance with the Biological Opinion. The three options offered Tier One communities were:

1. Adopt the model ordinance and supporting tools.
2. Complete a checklist demonstrating that local regulations comply with the Biological Opinion.
3. Demonstrate compliance on each individual permit.

King County staff have worked closely with FEMA staff to respond to questions on the checklist submitted under Option 2 in September of 2010, and submitted a programmatic habitat assessment evaluating the impacts of King County's land use regulations on floodplain habitat functions. In the 2008 Biological Opinion, NMFS cites King County's codes and regulations as being exemplary in terms of the degree to which they "minimize the effects of floodplain development on fish habitat and habitat forming processes." The programmatic habitat assessment and evaluation of potential future development impacts submitted in September 2011 confirms NMFS' conclusion. In addition, it demonstrates that future development impacts are within the incidental take limits established by NMFS in the Biological Opinion for King County, and that future development under King County's regulatory structure is not likely to adversely affect habitat conditions for protected species in King County's watersheds. In addition to these regulatory actions, King County implements a variety of incentive-based conservation programs and has invested significantly in habitat protection and restoration actions that benefit protected species. The submittal will be reviewed with FEMA in October 2012.

Also in September, the National Wildlife Federation filed a 60-day Notice of Intent to sue FEMA for failing to adequately alter its implementation of the NFIP as required under the 2008 NMFS Biological Opinion. This lawsuit may impact implementation of the Biological Opinion by FEMA and NMFS.

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## **King County Flood Control District Implementation**

This work program element includes coordination with King County cities through the Basin Technical Committees (BTCs) comprised of jurisdictions' technical staff and the 15-member Advisory Committee of elected officials. Activities during the reporting period include BTC meetings as well as four meetings of the Advisory Committee and preparation for a fifth meeting in October. These meetings resulted in recommendations adopted by the full Board regarding reprioritization of the 2011 capital program and a motion regarding levee certification and accreditation, both adopted in July 2011. The Advisory Committee also provided recommendations on the 2012 proposed capital program, and will meet in October to consider additional information about a request for increased staffing. The Advisory Committee's Annual Report was transmitted to the Board by the King County Executive in August 2011, and is available online at [www.kingcounty.gov/environment/waterandland/flooding/flood-control-zone-District/governance/advisory-committee.aspx](http://www.kingcounty.gov/environment/waterandland/flooding/flood-control-zone-District/governance/advisory-committee.aspx).

## **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 530 acres of flood buyout properties; as well as pump stations and related flood protection infrastructure. Following are the key maintenance activities.

In addition to ongoing activities such as facility maintenance, property maintenance, and demolition of recently acquired structures, this reporting period was notable for the level of effort devoted to maintenance of the Sammamish River Transition Zone in Marymoor Park.

## **Program Management and Supervision; Finance, Budget and General Administration**

Major activities during the reporting period included preparation of budget materials for the Board and the Executive, grant billings, Flood District billings, financial management and reporting; working with homeowners to provide accurate records of reimbursable home elevation costs; and preparation for the conversion to King County's new accounting system.

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**King County Flood Control District Scope of Services  
Semi-Annual 2011 Performance Report (April–September)**

**List of Attachments**

Attachment A: 2011 April–September Capital Expenditures

Attachment B: King County Flood Control District Summary of Capital and Operating  
Expenses – Operating Expenditures April – September 2011

Attachment A: 2011 April - September Capital Expenditures

<u>River / Program</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Total</u>
SKYKOMISH/MILLER RIVERS	\$4,473	\$310,495	\$3,306	\$2,205	\$3,722	\$6,417	\$330,618
UPPER SNOQUALMIE RIVER	\$395,233	\$161,136	\$95,142	\$172,188	\$150,869	\$232,673	\$1,207,241
LOWER SNOQUALMIE RIVER	\$47,585	\$120,122	\$406,590	\$78,158	\$458,299	\$387,521	\$1,498,275
TOLT RIVER	\$9,675	\$228,620	\$13,158	\$17,063	\$10,621	\$344,951	\$624,088
RAGING RIVER	\$2,498	\$398,759	\$2,308	\$6,320	\$110	\$5,376	\$415,371
CEDAR RIVER	\$598,940	\$93,511	\$19,835	(\$109,374)	\$178,088	\$528,475	\$1,309,475
GREEN RIVER	\$110,497	\$96,822	\$127,065	\$75,807	\$99,622	\$126,020	\$635,832
WHITE RIVER	\$100,474	\$69,849	\$46,513	\$74,211	\$76,598	\$78,698	\$446,343
MONITORING/MAINTENANCE	\$4,289	\$8,252	\$29,388	\$19,396	\$24,419	\$12,254	\$97,998
SUBREGIONAL OPPORTUNITY FUND	\$4,851	\$46,967	\$3,082	\$36,497	\$312,296	(\$50,000)	\$353,693
SEATTLE PROJECTS	\$0	\$0	\$0	\$0	\$0	\$0	\$0
COUNTYWIDE MISCELLANEOUS	\$34,823	\$11,959	\$8,178	\$30,911	\$7,294	\$2,144	\$95,309
<b>Total Capital Expenditures</b>	<b>\$1,313,339</b>	<b>\$1,546,493</b>	<b>\$754,564</b>	<b>\$403,381</b>	<b>\$1,321,938</b>	<b>\$1,674,530</b>	<b>\$7,014,244</b>

Attachment B: King County Flood Control District Summary of Capital and Operating Expenses

Operating Expenditures April - September 2011

Description	Apr	May	Jun	Jul	Aug	Sep	Total
ANNUAL MAINTENANCE, FACILITY ASSESSMENTS	\$ 34,887	\$ 50,371	\$ 120,967	\$ 44,254	\$ 88,997	\$ 113,254	\$ 452,730
FLD HAZARD PLANNING, GRANTS, OUTREACH	\$ 27,132	\$ 48,532	\$ 56,106	\$ 52,781	\$ 63,879	\$ 49,811	\$ 298,242
FLD HAZARD STUDIES, MAPS, TECHNICAL SERVICES	\$ 25,520	\$ 111,748	\$ 22,086	\$ 25,790	\$ 87,374	\$ 52,411	\$ 324,930
FLOOD PREPARATION, FLOOD WARNING CENTER, POST FLOOD ACTIVITIES	\$ 41,445	\$ 34,209	\$ 25,158	\$ (89,427)	\$ 11,560	\$ 6,895	\$ 29,840
PROGRAM MANAGEMENT, SUPERVISION, FINANCE, BUDGET	\$ 47,005	\$ 66,665	\$ 55,900	\$ 53,248	\$ 45,767	\$ 57,730	\$ 326,315
PROGRAM IMPLEMENTATION	\$ 61,096	\$ 43,676	\$ 56,347	\$ 57,357	\$ 92,209	\$ 39,318	\$ 350,002
CENTRAL COSTS / OVERHEAD	\$ 301,927	\$ 212,239	\$ 197,768	\$ 278,458	\$ 222,736	\$ 227,559	\$ 1,440,687
LOAN OUT RECOVERY	\$ (55,264)	\$ (48,157)	\$ (63,441)	\$ (57,641)	\$ (73,691)	\$ (77,770)	\$ (375,965)
HOWARD HANSEN DAM (PROJECT FLD105)	\$ 367	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 367
<b>Total Expenditures</b>	<b>\$ 484,117</b>	<b>\$ 519,282</b>	<b>\$ 470,891</b>	<b>\$ 364,820</b>	<b>\$ 538,831</b>	<b>\$ 469,208</b>	<b>\$ 2,847,148</b>