
**King County Flood Control District
Scope of Services 2015 Annual Report and 2016
First Quarter Performance Report
Per Flood Control District Resolution 2008-17**

April 2016



King County

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King County Flood Control District

Scope of Services 2015 Annual Report and 2016 First Quarter Performance Report (January 2015–March 2016)

I. Purpose

This report provides the King County Flood Control District's (District) Board of Supervisors with the status of work completed by the Water and Land Resources (WLR) Division of the Department of Natural Resources and Parks as Service Provider to the District.

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 inter-governmental coordination such as the Basin Technical Committees (BTCs).

Capital Improvement Program Implementation

Projects in the 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 capital program fulfills one or more of the following flood hazard management objectives:

- Repair and improve flood protection facilities throughout major commercial, industrial and residential areas;
- Reduce risks to people 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 2016 revised capital program includes \$116 million in appropriations (including carryover from 2015 pending formal adoption by the District). Of this amount, approximately \$10.8 million is backed by external grant revenue. In addition, \$41.3 million is allocated to three grant programs that award funds to non-profits, tribal nations, state agencies, and local governments: the Opportunity Fund, the Cooperative Watershed Management, and the Flood Reduction grants. Approximately \$23.1 million is programmed for projects managed by other agencies such as the cities of Kent, Seattle, Bellevue, Renton and Lake Forest Park, and the U.S. Army Corps of Engineers.

Highlights of capital program implementation for the report period include:

Corridor Planning – The purpose of corridor plans is to define basin-specific flood risk reduction outcomes and long-term capital investment strategies. Corridor planning is underway on the Tolt, South Fork Snoqualmie, Middle Fork Snoqualmie, Cedar, and Green Rivers.

Tolt River Corridor Plan: Technical staff is finalizing existing and current conditions reports. Tolt River corridor planning has been deferred while staff resources have been focused on completing the Sinnema Quaaale revetment repair project and preparing the Tolt Pipeline Protection project for 2017 construction. Corridor planning technical documents will be completed in 2016 and planning work to identify potential early actions based on the flood risk characterization will resume in 2017.

South Fork Snoqualmie Corridor Plan: Following the completion of existing and current conditions reports, the District approved provisional corridor goals to direct planning efforts at the end of 2015. Staff completed technical comparisons of different floodplain management approaches; the analysis of these different approaches will be presented to the District with the intent of approving a six-year strategic investment plan in 2016.

Middle Fork Snoqualmie Corridor Plan: Planning efforts are on hold pending completion of the South Fork Snoqualmie Corridor Plan.

Cedar River Corridor Plan: The completed documentation of existing conditions in the basin to date includes analysis of flooding and erosion risks and existing habitat conditions. GIS analysis shows vulnerability of neighborhoods to flooding and channel migration, road isolation, and risks to critical infrastructure such as the Cedar River Trail and Highway 169. An assessment of risk will be followed by development of a six-year strategic investment plan. The plan is expected to be completed in 2016.

Green River Interim System-Wide Improvement Framework (SWIF): In February 2016, the District Board of Supervisors approved submittal of the Interim SWIF to the U.S. Army Corps of Engineers. As part of the resolution adopting the Interim SWIF the District also authorized a Lower Green River corridor planning process, including formation of an Advisory Council.

Cedar River Gravel Removal Project – This project is a partnership between the District and the City of Renton. During the reporting period, Renton and its consultant continued negotiation of mitigation requirements and completion of permit applications. The consultant team conducted two technical studies: an investigation of alternatives to address performance issues with the Elliott Spawning Channel intake structure which is complete; and a lighting impact study within the project reach which is underway. Both studies address mitigation elements for the project's habitat impacts. Final design has begun and construction is expected to begin in summer 2016. Based on current cost estimates, the City of Renton has requested additional funding for this project, pending final approval of the District Board of Supervisors.

Willowmoor Floodplain Reconnection Project – A final Stakeholder Advisory Committee meeting was held in October 2015 to obtain input from the committee on project conceptual alternatives. Subsequently, an Alternatives Consideration Memo was sent to the District for

consideration in January 2016. The memo summarizes the development of the alternatives, and explains how they meet the primary project goals. Pending a decision from the District, the project is ready to move towards a 30 percent design plan. A Salmon Recovery Funding Board grant in the amount of \$200,000 was awarded to support habitat elements of the project design such as cold water supplementation, should the District decide to pursue this element of the project.

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 but placed on hold by the District for the South Fork Snoqualmie Corridor Plan to address I-90 flooding. A draft alternatives analysis report incorporating alternatives requested by the District was completed by the consultant in January 2016.

Sinnema Quaale Revetment, Lower Snoqualmie – This flood protection facility located between Carnation and Duvall supports an embankment adjacent to the Snoqualmie Valley Trail, State Route 203, and two regional fiber optic lines. Construction of a 750-foot steel shoring wall and 12 engineered log structures to stabilize the river embankment and provide enhanced aquatic habitat were completed between June 2015 and March 2016. The record wet winter and multiple flood events delayed the project's completion. As a result, a short period of follow-up construction will be necessary over several weeks in July–August 2016, which may impact trail usage.

Tolt Pipeline Protection, Lower Snoqualmie – This project will reconstruct approximately 1,000 linear feet of the Winkelman revetment where ongoing lateral channel migration threatens to undermine the City of Seattle’s Tolt River water supply pipeline. The project is in the final design phase and construction has been rescheduled from 2016 to 2017 due to extended landowner negotiations.

San Souci Flood Buyouts – Acquisition of the last at-risk parcel in the San Souci neighborhood along the Tolt River completed 20 years of effort to acquire 18 parcels from willing landowners.

SE 19th Way Road Protection Revetment Repair, Lower Snoqualmie – This project was authorized as part of the 2014 capital budget adoption to repair ongoing erosion of the SE 19th Way revetment. The project is currently in the planning phase and has a target construction date of summer 2017.

Lower Russell Road Levee Setback Project – A preferred alternative was developed and approved by the District in August 2015 with significant input from project partners, the general public, state and local permitting agencies and the Muckleshoot Tribe. Bi-weekly coordination meetings to review project design iterations took place between the City of Kent and King County staff. Forty citizens, Vice Chair Upthegrove, and Mayor Cooke attended the June 2015 public meeting and 27 stakeholders attended design workshop, also held in June 2015, to discuss habitat and recreation elements of the project. The construction schedule has been extended to 2019.

City of Kent Partnership Projects – King County staff reviewed reimbursement requests, property transfers, engineering designs, and construction of City of Kent projects which are

funded by the District through interlocal agreements. For the reporting period, the projects included the Briscoe-Desimone Levee Improvement Project and the Upper Russell Secondary Levee Project. Constructions of reaches 1-3 of the Briscoe-Desimone project are complete. The final remaining floodwall segment of the project (Reach #4) was nearly completed in December 2015; however, deep drainage and paving work is on hold until there is dryer weather to finish the project. Construction of the South Reach-Upper Russell Secondary Levee Project was estimated to be complete by December 2015 but work was delayed due to continuing wet weather and is expected to resume during dryer weather. The District and City of Kent are currently negotiating a new interlocal agreement to acquire property and evaluate design alternatives for the Milwaukee Levee project.

Teufel Nursery – Demolition of structures at the former Teufel Nursery on the Green River is complete. This site was acquired in 2011 as a future mitigation site following tree removal required by the U.S. Army Corps of Engineers on the Green River in 2008–2009. In March 2016, baseline surveying started at the project site and a consultant contract was secured to prepare flood-risk reduction design alternatives. Following the alternative selection, design is expected to begin in June 2016.

Green River Flood Damage Repairs – Two levee sections along the Lower Green River were damaged by high river flows in March 2014. One site is the Dykstra levee in Auburn; the second is the Desimone Levee in Tukwila. Both projects are funded and managed through the U.S. Army Corps of Engineers PL 84-99 rehabilitation program, with the District as the local sponsor providing 20 percent of construction costs as local match, along with all costs associated with property interests and permits necessary for the project. The Desimone Reach repair was substantially completed in November 2015 and immediately thereafter, there were several flood events. While the levee structural repairs withstood the flood season without damage, the project did lose topsoil and plantings that the U.S. Army Corps of Engineers will replace in 2016. The Dykstra Levee repair project was also intended for construction in 2015, but existing easements were not sufficient to support the limited levee setback. Additional easements needed were secured in the beginning of 2016 with construction expected to proceed from August–November 2016.

McAleer-Lyon Creek Channel Improvement Project, Lake Forest Park – With funding from the District, the City of Lake Forest Park completed a construction project in October 2015 to establish a more natural floodplain widening for Lyon Creek and to 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 grant. The project was highlighted in the Take Winter by Storm regional preparedness campaign and received significant media coverage.

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 five box culvert crossings. Pre-design alternatives analysis was completed during the reporting period. The second phase of the project, which includes planning, design and construction, began in August 2015. Planning and design will continue through 2016–2017 with construction of culvert and bridge replacements scheduled for 2017 and 2018.

Black River Pump Station, Green River – The forebay project permits required to remove sediment from the upstream intake of the pump station have been secured and contract documents have been finalized for construction in 2016 and 2017. In addition, the rebuilt fuel system has received final approval from the Renton Fire Department, resolving deficiencies in the original station design that came to light after a major diesel spill in 2005.

Countyline Levee Setback, White River – The project is at 100 percent design and a request for bids for the project's construction was advertised in early April 2016 with construction expected to start in June 2016. A Communications Plan has been completed and construction management and community relations services have been retained to support project implementation. The project will provide significant flood risk benefits to the residents of the City of Pacific and reconnect 121 acres of floodplain habitat.

Right Bank Levee, White River – A geotechnical investigation of the City of Pacific's park was conducted over the summer of 2015. The work included taking soil samples and installing groundwater monitoring wells. The analysis of the field data will be completed in spring 2016. Additional feasibility studies will be scoped in 2016 for use in planning level design work; construction is scheduled for 2018-2019.

City of Pacific Park Opening and Closing – During the reporting period, flood protection (HESCO) barriers were inspected and maintained by King County crews to ensure structural integrity. The HESCO barrier was closed around the park area in fall 2015 in preparation for high river conditions expected during the 2015/2016 flood season. The HESCO barrier is scheduled to be re-opened in the park in April 2016.

Acquisition and Elevation of At-Risk Structures – Eleven at-risk homes were elevated in the Snoqualmie basin during the reporting period; another 12 home elevations are underway.

Acquisitions for Levee or Revetment Projects – During the reporting period, 10 properties, totaling 49.90 acres, were acquired to support flood risk reduction projects on the Tolt, South Fork Snoqualmie, Lower Snoqualmie, Cedar and White rivers.

Sub-Regional Opportunity Fund – Payments of over \$5.2 million were made to 22 jurisdictions for projects intended to improve local drainage and water quality conditions. The largest single payment was to the City of Seattle with over \$1.4 million contributed to the City's South Portland Avenue Drainage Project.

Water Resource Inventory Area (WRIA) Funding – Over \$5.8 million was paid to 28 separate non-profit or governmental agencies working on habitat conservation priorities in the Cedar-Sammamish, Green-Duwamish, White, and Snoqualmie watersheds.

Flood Risk Reduction Grant – Over \$580,000 was paid to 11 non-profit or governmental agencies to reduce flooding or the risk of flooding in their areas.

Operational and Programmatic Implementation

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 about potential flood events, coordinating emergency response and regional Flood Warning Center operations during flood events, and ensuring consistency across basins for post-flood recovery actions.

During the reporting period, the Flood Warning Center was opened eight times for a total of approximately 278 hours of operations and over 2,000 hours of staff time. This is significantly greater than in recent years, representing over 60 percent of the time spent on flood response activities during 2012–2015.

Repeated flooding during the 2015-2016 flood season resulted in significant impacts to homes and infrastructure along the South Fork Skykomish and the White River. A report summarizing the impacts of the flooding will be presented to the District in April 2016. Early actions authorized by the District include:

- Expansion of the Sandbag Distribution Program to four additional locations. The sites are expected to be open to the public by September 2016. Free sand and sandbags will be available 24 hours a day, seven days a week at King County Road Services Division shop sites located in Renton, Black Diamond, Fall City and Skykomish.
- Expansion of the King County Flood Warning System to include the South Fork Skykomish River. A four-phase warning system is being developed in time for the 2016–2017 flood season, following review and approval by the District. This system is expected to provide flood warnings to people who live, work or travel through the town of Skykomish and the surrounding area.
- Revision of the 2015 budget to acquire homes in White River Estates from willing sellers so that temporary flood barriers could be extended toward and along Government Canal to protect neighboring properties from flooding. This emergency action comes in response to notice from the U.S. Army Corps of Engineers warning of continued loss of channel capacity in the lower White River that is increasing the risk of flooding.

In 2015, annual flood response coordination meetings for internal staff and external partners included:

- An Interagency Flood Preparedness Meeting
- Flood Warning Staff Training
- King County Office of Emergency Management's Winter Weather Seminar
- Flood Warning Patrol Training

King County Flood Update Brochure – In October, the annual flood warning brochure was mailed to 19,222 addresses in the King County river floodplain. The brochure was translated into 21 languages posted at <http://www.kingcounty.gov/floodservices> under “How to prepare for a flood”. The brochure features flood preparedness tools and resources, a spotlight on District projects, and inclusion of the King County river gage and flood stage map. That information remains ready and available during any flood event to share with King County's Community

Communication Network. The network is a way to exchange information between Public Health – Seattle & King County (Public Health), community-based organizations, and community leaders in order to ensure essential emergency and emergency health-related information reaches vulnerable residents of King County to inform them how to protect themselves.

Improving Access to Neighborhoods during Flood Events – At the request of the District, a two-phase report on road closures, due to flooding, that isolate communities was completed in 2015. The first phase included an initial list of potential priority sites, potential solutions and proposed tasks and was transmitted to the District in February 2015. The second phase of the report recommended four projects in April 2015. These four projects were adopted by the Board as part of the July 2015 revised budget. The King County Road Services Division is scheduled to construct repair projects along the Lower Snoqualmie River at SE Fish Hatchery Road and SE David Powell Road in 2017. Feasibility studies for the SE 428th Street Bridge on the North Fork Snoqualmie River and the Tolt River Road Elevation along the Tolt River are scheduled for completion in 2017.

Flood Preparedness Technology Updates

Updates to the King County Flood App for iOS, Android, and Windows phones were completed for release by October 2015. The app now allows users to access multiple combined hydrographs of recent and forecasted river data. The feature was also added to the Flood Warning website. All King County websites were migrated to a new "mobile responsive" template which adapts to a wide range of screen sizes, from small smartphone displays to big screen desktop displays. In addition, improvements were made to the back-end systems that manage the flood data used on the websites, apps and automated phone systems.

Flood Hazard Studies, Mapping, and Technical Services Program

Landslide Mapping – Technical analyses were completed in late 2015 and hazard mapping prepared in early 2016 using methods reviewed by the Technical Review Committee which includes geologic experts from King County, Washington State Department of Natural Resources, University of Washington and private sector subject matter experts. The outcome of this project is up-to-date detailed information on landslide hazard areas that intersect major river floodplains. Using the mapping, an inventory of landslide data is being compiled. These products will be utilized to assess flood-related risks and inform the development of capital flood risk reduction projects along the major river corridors. The updated mapping and supporting technical memorandum is expected to be complete by June 2016.

Cedar River Channel Migration Zone (CMZ) Mapping – Upon completion and publication of the new channel migration hazard mapping in June 2015, staff have provided ongoing response to public inquiries. Technical information from the CMZ mapping and study will be utilized to support river corridor planning and the development of capital flood risk reduction projects on the Cedar River.

South Fork Skykomish River CMZ Mapping – Technical analyses using historic aerials and light detection radar (LiDAR) were completed in 2015 to evaluate channel migration of the South Fork Skykomish River from the King-Snohomish county line to the confluence of the Foss and Tye rivers. The draft study will illustrate new channel migration hazard areas and help inform the

development of future capital projects along the river and in the floodplain. A public meeting will be schedule for spring 2016 to present the draft study and describe the new mapping to area residents.

Tolt River CMZ Mapping – In 2015, technical analyses were initiated and field observations conducted along the lower six miles of the Tolt River. Results of the technical analyses will be used to prepare draft mapping in the summer of 2016.

Snoqualmie River Hydraulic Study- The draft Snoqualmie River Hydraulic Study was completed in January 2016. The study was done as an independent analysis of the impacts and benefits of two projects completed by other agencies: the U.S. Army Corps of Engineers’ Snoqualmie River “205” channel widening project, and Puget Sound Energy’s (PSE) recent upgrades to its hydroelectric facilities above Snoqualmie Falls. The study was presented to the Snoqualmie Fish, Farm, Flood Advisory Committee and at a public meeting in Carnation in March 2016. Follow-up work will continue in 2016 to evaluate trends in basin flood hydrology and identify possible changes that could be contributing to increased flows, such as land use, forestry practices, increased sedimentation, floodplain storage and weather patterns. Staff will actively seek input from community members about their experiences with past floods to help guide this investigation.

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 maps, and other public engagement efforts. Public outreach activities during the report period supported the following projects and programs:

- 2015–2016 Flood Outreach/Take Winter By Storm Campaign Preparation (October 2015–March 2016)
- Black River Pump Station Improvements
- Briscoe-Desimone Levee Improvement Project
- Cedar River Annual Public Meeting (Public Meeting November 18, 2015)
- Cedar River Channel Migration Zone Study and Map
- Cedar River Corridor Plan (Public Meeting May 18, 2015; Field Trip June 3, 2015; Recreation Workshop June 15, 2015)
- Cedar River Corridor Plan Stakeholder Advisory Committee Meetings (February–July 2015)
- Cedar River Field Trip (March 2016)
- Desimone Levee Repair Project
- Dykstra Levee Repair Project
- Elliott Bridge Reach Mitigation Project
- Farm Pad Program
- Green River Trail Maintenance Work
- I-90 Flood Risk Reduction Project
- King County Flood Control District Flood Reduction Fund
- King County Flood Control District Sub-Regional Opportunity Fund
- King County Rivers Facebook Page

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- Known Hazards in King County Rivers web page
 - Large Wood Annual Meeting (June 9, 2015)
 - Lower Russell Road Levee Setback Project (Public Meeting - June 8, 2015)
 - Lower White River Countyline Reach Projects
 - Reddington Levee (Clean Sweep Planting Event - April 25, 2015)
 - Repetitive Loss Property and Repetitive Loss Area Annual Outreach (September 30, 2015)
 - Sinnema Quaale Upper Revetment Analysis and Repair Project Public outreach and media event (June 4, 2015); and media outreach (March 15, 2016)
 - Snoqualmie River Hydraulic Study public outreach and community meeting (March 22, 2016)
 - South Fork Snoqualmie River Corridor Plan (Neighborhood Meetings June–July and a larger Public Meeting July 23)
 - South Fork Snoqualmie River Channel Migration Zone Study and Mapping Preparation
 - Willowmoor Floodplain Restoration Project Stakeholder Advisory Committee (October 14)

Community Rating System Discount – Every three years, the Federal Emergency Management Agency’s (FEMA) Community Rating System (CRS) verifies that King County’s floodplain management activities exceed the minimum National Flood Insurance Program’s requirements. King County’s submittal for CRS verification has been under review since October 2014. Staff is currently responding to recent clarifying questions and anticipates confirmation of King County’s Class Two status in 2016, which results in a 40 percent reduction in flood insurance rates for policyholders in unincorporated King County. Cities enrolled in the CRS program also receive credit for many of the activities funded by the Flood Control District.

Leveraging External Resources through Grants and Partnerships

The Washington State Floodplains by Design Program awarded funding for two project proposals submitted for multi-purpose floodplain planning and projects. Awards amount to approximately \$4.9 million for the Lower Russell Road Improvements and Floodplain Restoration and \$5 million for the Cedar River Corridor Plan Implementation projects.

A Salmon Recovery Funding Board grant in the amount of \$200,000 was awarded to support habitat elements of the Willowmoor project design such as cold water supplementation, should the District decide to pursue this element of the project.

A decision is anticipated from FEMA by second quarter of 2016 about a grant application submitted to FEMA in 2012 to elevate two homes on the Lower Snoqualmie.

Resource Management, Annual Maintenance, and Facility Assessment Program

This element of the District’s work program includes inspections and maintenance of approximately 500 flood protection facilities along 119 linear miles of riverbank, approximately 800 acres of land, and pump stations and related flood protection infrastructure.

County staff completed 421 inspections on 332 levees and revetments during the reporting period. Of these, 143 were routine inspections and 279 were post-flood inspections following the

eight flood events that occurred during the reporting period.

County staff also participated in three levee inspections along the Green and Cedar rivers that were led by staff from the U.S. Army Corps of Engineers, Seattle District. In addition, 118 maintenance sites were inspected to determine work needed to control noxious weeds and maintain areas revegetated with native trees and shrubs.

Monitoring was conducted on eight project sites as required by state and local permit conditions. Inspections of flood protection facilities and maintenance sites are now conducted more efficiently using a paperless system to enter data directly into the River Facility Inventory database, saving approximately 30 minutes (or \$20-\$25 in salary costs) per inspection.

During the report period, the maintenance program consisted of six areas of focus:

1. Treatment of half of the 465 known areas of river area knotweed infestations. Another 71 maintenance sites were treated for other types of noxious weeds.
2. Maintenance of more than 70 sites included irrigation, signage, hazard tree mitigation, debris removal, planting, mulching, mowing and installation of a device to prevent beavers from blocking two large culverts which could result in flooding homes and roads in the North Bend area.
3. Inspection and maintenance of river safety signage and monitoring of large wood conditions at six potentially hazardous river locations.
4. Demolition of 19 at-risk structures; relocation of three structures from flood prone properties acquired by the District; and decommissioning of 19 water supply wells.
5. Correction of 31 Green River Levee deficiencies identified by the U.S. Army Corps of Engineers to maintain eligibility for flood damage repair funding under the levee rehabilitation and inspection program authorized under Public Law 84-99. Correction of nine levee deficiencies identified by maintenance staff. Twenty additional maintenance level deficiencies will be reviewed in 2016 with the U.S. Army Corps of Engineers and local jurisdictions to determine whether action is warranted and feasible.
6. Completion of annual maintenance tasks to sustain flood conveyance and aquatic habitat in the Sammamish Transition Zone reach in Marymoor Park. Tasks included pruning vegetation in the navigation channel, mowing, and removing cut vegetation from the high flow area of the river channel.

Program Management and Supervision; Finance, Budget and General Administration

This category also includes audits by the State of Washington and the District, as well as District billings, financial management and reporting, grant billings for external grants and 166 reimbursement requests for the District's three capital grant programs. Approximately 223 grant agreements and projects are currently being administered through these grant programs.

Finance staff provided 221.5 hours responding to audit questions from the District and the State Auditor's Office from January 1, 2015 through March 31, 2016. Contract administration staff supported the development of nine new contracts, 48 work orders and 39 amendments. New contracts and work orders issued during the reporting period total just under \$13 million. During this reporting period, contract administration staff also participated in ten contract audits.

Attachments

2015 Budget

Flood Control District Administration

Flood District Administration \$647,300

Operating Budget

| Description | |
|--|--------------------|
| Annual Maintenance | \$2,132,048 |
| Flood Hazards Plan, Grants, Outreach | \$424,852 |
| Flood Hazard Studies, Maps, Technical Services | \$1,140,872 |
| Flood Preparation, Flood Warning Center | \$463,000 |
| Program Management, Supervision, Finance, Budget | \$791,390 |
| Program Implementation | \$1,629,559 |
| Overhead / Central Costs | \$2,754,170 |
| Total | \$9,335,891 |

Capital Budget ¹

| Project | Description | |
|-------------------------------|---|---------------------|
| Snoqualmie River Basin | | |
| 1112057 | WLFL0 SKY W RVR DR FLOOD STUDY | \$79,981 |
| 1044461 | WLFL0 SF SKYKMSH REP LOSS MIT | \$4,060 |
| 1044460 | WLFL0 TIMBER LN EROSN BUYOUTS | \$525,746 |
| 1121044 | WLFL1 CIRCLE RVR RANCH RISK RED | \$112,231 |
| 1121588 | WLFL1 MF SNO CORRIDOR IMP | \$1,531,678 |
| 1044469 | WLFL1 MF SNO CORRIDOR PLAN | \$434,476 |
| 1044465 | WLFL1 N BEND RESID FLD MITGTN | \$88,644 |
| 1112032 | WLFL1 RECORD OFFCE 2011 REPAIR | \$383 |
| 1122632 | WLFL1 SF SNO CORR EARLY ACTION | \$4,593,276 |
| 1121587 | WLFL1 SF SNO CORRIDOR IMP | \$102,163 |
| 1044466 | WLFL1 SF SNO CORRIDOR PLAN | \$230,935 |
| 1044517 | WLFL1 UPR SNO RES FLD MITIGTN | \$4,679,520 |
| 1126589 | WLFL1 428TH AVE SE BR FEASIBILITY | \$300,000 |
| 1126590 | WLFL1 UPPER SNOQ 2015 FLOOD REPAIR | \$700,000 |
| 1126591 | WLFL2 SE DAVID POWELL RD | \$1,000,000 |
| 1126592 | WLFL2 SE FISH HATCHERY RD | \$500,000 |
| 1044581 | WLFL2 FARM FLOOD TSK FORCE IMP | \$119,597 |
| 1044580 | WLFL2 L SNO REP LOSS MITGTION | \$478,897 |
| 1044576 | WLFL2 L SNO/ALDAIR CORRDOR PLN | \$2,587,273 |
| 1044582 | WLFL2 LWR SNO RESDL FLD MITGTN | \$930,863 |
| 1122633 | WLFL2 SE 19TH WAY REVETMENT | \$691,066 |
| 1112046 | WLFL2 SINNEMA QUAAL 2011 REPR | \$6,499,249 |
| 1044579 | WLFL2 WINKELMAN REVMTNT REPAIR | \$252,661 |
| 1126593 | WLFL3 TOLT 2015 FLOOD REPAIRS | \$900,000 |
| 1044645 | WLFL3 SAN SOUCI NBRHOOD BUYOUT | \$1,302,190 |
| 1044644 | WLFL3 TOLT CORRIDOR PLAN | \$68,804 |
| 1112058 | WLFL3 TOLT R MILE 1.1 SETBACK | \$869,286 |
| 1115032 | WLFL3 TOLT R NATURAL AREA ACQ | \$500,660 |
| 1126597 | WLFL3 TOLT R RD ELEVATION FEASIBILITY | \$250,000 |
| 1044647 | WLFL4 ALPINE MANOR NEIGHBORHOOD BUYOUTS | \$515,740 |
| TOTAL SNOQUALMIE BASIN | | \$30,849,380 |
| Cedar River Basin | | |
| 1112037 | WLFL5 WILLOWMOOR FLDPLAIN REST | \$568,996 |

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| WLFL5 SAMMAMISH R BANK REPAIRS | \$400,000 |
| 1116846 WLFL6 LOWER COAL CRK PH I | \$3,771,320 |
| 1116847 WLFL6 MCALEER/LYON CHAN IMPRVM | \$595,050 |
| 1044734 WLFL7 CDR PRE-CONST STRTGC ACQ | \$2,711,253 |
| 1112029 WLFL7 RAINBOW BEND LEVEE STBCK | \$477,306 |
| 1116060 WLFL7 CEDAR LEVEE SETBACK FEAS | \$1,003,737 |
| 1044651 WLFL7 CEDAR R REP LOSS MITGATN | \$614,353 |
| 1044729 WLFL7 CEDAR RVR GRAVEL REMOVAL | \$7,763,411 |
| 1112041 WLFL7 ELLIOTT BR LEVEE SETBACK | \$261,636 |
| 1119888 WLFL7 RIVERBEND MHP ACQ | \$2,044,400 |
| TOTAL CEDAR RIVER BASIN | \$20,211,461 |

Green River Basin

| | |
|---|---------------------|
| 1116360 WLFL8 BLACK R PUMP STATION | \$4,143,042 |
| 1123376 WLFL8 BOEING LEVEE HT INCREASE | \$1,828,123 |
| 1116515 WLFL8 BRISCOE LEVEE SETBACK | \$6,933,224 |
| 1124990 WLFL8 DESIMONE REPAIR USACE | \$2,500,000 |
| 1126059 WLFL8 DYKSTRA REPAIR USACE | \$2,000,000 |
| 1044882 WLFL8 GREEN R PL84-99 MITIGATN | \$1,779,708 |
| 1126595 WLFL8 MILWAUKEE LEVEE #2-KENT | \$4,000,000 |
| 1112033 WLFL8 HORSESHOE BND ACQ-RCNCT | \$2,508,621 |
| 1112056 WLFL8 LWR RUSSELL LEVEE SETBACK | \$3,213,530 |
| 1116362 WLFL8 BOEING LEVEE USACE ERP | \$1,743,249 |
| 1112035 WLFL8 REDDINGTON REACH SETBACK | \$515,009 |
| WLFL8 PORTER LEVEE ERES | \$300,000 |
| 1044881 WLFL8 RUSSELL RD UPPER KENT | \$4,778,317 |
| 1127209 WLFL8 S277TH ST FEASIBILITY | \$300,000 |
| 1116363 WLFL8 USACE SWIF | \$608,699 |
| TOTAL GREEN RIVER BASIN | \$37,151,524 |

White River Basin

| | |
|--|---------------------|
| 1112049 WLFL9 COUNTYLINE TO A STREET | \$7,927,171 |
| 1122630 WLFL9 WHITE - GREENWATER ACQ | \$375,000 |
| 1112038 WLFL9 RIGHT BANK LEVEE SETBACK | \$4,679,793 |
| TOTAL WHITE RIVER BASIN | \$12,981,965 |

Seattle Projects

| | |
|--|--------------------|
| 1112036 WLFLS SOUTH PARK DWMSH BACKWTR | \$1,599,964 |
| TOTAL SEATTLE PROJECTS | \$1,599,964 |

Countywide Costs

| | |
|--|---------------------|
| WLFLX CORRIDOR PLN DESIGN/CONST PLACEHOI | \$71,305 |
| 1122628 WLFLG GRANT FUND | \$5,542,957 |
| 1112022 WLFLM EFFECTIVENESS MONITORING | \$688,839 |
| 1045042 WLFLO SUBREGNL OPPRTNTY FUND | \$14,917,990 |
| 1044281 WLFLX CENTRAL CHARGES | \$411,530 |
| 1044279 WLFLX FLOOD EMERGENCY CONTGNCY | \$250,000 |
| 1117333 WLFLX WATERSHED MGMT GRANTS | \$10,890,751 |
| TOTAL COUNTYWIDE COSTS | \$32,773,371 |

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| TOTAL CAPITAL BUDGET | \$135,567,667 |
|-----------------------------|----------------------|

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| Flood Control District Total | \$145,550,858 |
|-------------------------------------|----------------------|

2015 Expenditures

Flood Control District Administration

Flood District Administration ¹ \$666,085

Operating Budget

| Description | Budget |
|--|--------------------|
| Annual Maintenance | \$1,812,268 |
| Flood Hazards Plan, Grants, Outreach | \$431,337 |
| Flood Hazard Studies, Maps, Technical Services | \$931,425 |
| Flood Preparation, Flood Warning Center | \$435,500 |
| Program Management, Supervision, Finance, Budget | \$1,089,490 |
| Program Implementation | \$1,542,490 |
| Overhead / Central Costs | \$1,758,618 |
| Total | \$8,001,129 |

Capital Budget

| Project | Description | Budget |
|-------------------------------|-----------------------------------|---------------------|
| Snoqualmie River Basin | | |
| 1112057 | WLFL0 SKY W RVR DR FLOOD STUDY | \$1,218 |
| 1044460 | WLFL0 TIMBER LN EROSN BUYOUTS | \$22,279 |
| 1126589 | WLFL1 428TH AVE SE BR FEASIBILITY | \$3,369 |
| 1121044 | WLFL1 CIRCLE R RANCH RISK RED | \$26,457 |
| 1044469 | WLFL1 MF LEVEE SYSTEM IMPRVMNT | \$7,166 |
| 1044465 | WLFL1 N BEND RESID FLD MITGTN | \$77,785 |
| 1044466 | WLFL1 SF LEVEE SYSTEM IMPROVE | \$181,975 |
| 1122632 | WLFL1 SF SNO CORR EARLY ACTION | \$1,018,962 |
| 1044517 | WLFL1 UPR SNO RES FLD MITIGTN | \$757,785 |
| 1044576 | WLFL2 ALDAIR BUYOUT | \$2,509,491 |
| 1044581 | WLFL2 FARM FLOOD TSK FORCE IMP | \$69,033 |
| 1044580 | WLFL2 L SNO REP LOSS MITGTION | \$34,900 |
| 1044582 | WLFL2 LWR SNO RESDL FLD MITGTN | \$640,529 |
| 1122633 | WLFL2 SE 19TH WAY REVETMENT | \$69,853 |
| 1126591 | WLFL2 SE DAVID POWELL RD | \$12,081 |
| 1126592 | WLFL2 SE FISH HATCHERY RD | \$15,718 |
| 1112046 | WLFL2 SINNEMA QUAAL 2011 REPR | \$9,294,637 |
| 1044579 | WLFL2 SNOQUALMIE 13.5 REVETMN | \$450,240 |
| 1044645 | WLFL3 SAN SOUCI NBRHOOD BUYOUT | \$726,052 |
| 1126593 | WLFL3 TOLT 2015 FLOOD REPAIRS | \$19,397 |
| 1044644 | WLFL3 TOLT CORRIDOR PLAN | \$76,369 |
| 1112058 | WLFL3 TOLT R MILE 1.1 SETBACK | \$116,404 |
| 1044647 | WLFL4 ALPINE MANOR MOB PRK ACQ | \$37,508 |
| TOTAL SNOQUALMIE BASIN | | \$16,169,209 |

Cedar River Basin

| | | |
|---------|--------------------------------|-----------|
| 1124988 | WLFL5 SAMMAMISH R BANK REPAIRS | \$15,070 |
| 1112037 | WLFL5 WILLOWMOOR FLDPLAIN REST | \$263,900 |
| 1116846 | WLFL6 LOWER COAL CRK PH I | \$433,784 |
| 1116847 | WLFL6 MCALEER/LYON CHAN IMPRVM | \$929,769 |
| 1112024 | WLFL7 BELMONDO FEMA 1653 PH I | \$2,616 |
| 1044734 | WLFL7 CDR PRE-CONST STRTGC ACQ | \$108,227 |
| 1116060 | WLFL7 CEDAR LEVEE SETBACK FEAS | \$644,513 |

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|--------------------------------|--------------------------------|--------------------|
| 1044651 | WLFL7 CEDAR R REP LOSS MITGATN | \$297,456 |
| 1044729 | WLFL7 CEDAR RVR GRAVEL REMOVAL | (\$3,056) |
| 1112041 | WLFL7 ELLIOTT BR LEVEE SETBACK | \$1,112 |
| 1112029 | WLFL7 RAINBOW BEND LEVEE STBCK | \$74,945 |
| 1119888 | WLFL7 RIVERBEND MHP ACQ | \$379,126 |
| TOTAL CEDAR RIVER BASIN | | \$3,147,462 |

Green River Basin

| | | |
|--------------------------------|--------------------------------|---------------------|
| 1116360 | WLFL8 BLACK R PUMP STATION | \$582,226 |
| 1116515 | WLFL8 BRISCOE LEVEE SETBACK | \$4,165,891 |
| 1124990 | WLFL8 DESIMONE USACE 2015 | \$1,668,225 |
| 1126059 | WLFL8 DYKSTRA USACE 2015 | \$54,427 |
| 1044882 | WLFL8 GREEN R PL84-99 MITIGATN | \$883,335 |
| 1112033 | WLFL8 HORSESHOE BND ACQ-RCNCT | \$3,082 |
| 1112056 | WLFL8 LWR RUSSELL/HOLIDAY | \$688,733 |
| 1112035 | WLFL8 REDDINGTON REACH SETBACK | \$30,027 |
| 1044881 | WLFL8 RUSSELL RD UPPER | \$3,783,133 |
| 1127209 | WLFL8 S 277TH ST REVETMENT | \$5,058 |
| 1116363 | WLFL8 USACE SWIF | \$698,311 |
| TOTAL GREEN RIVER BASIN | | \$12,562,448 |

White River Basin

| | | |
|--------------------------------|--------------------------------|--------------------|
| 1112049 | WLFL9 COUNTYLINE TO A STREET | \$2,013,217 |
| 1112038 | WLFL9 RIGHT BANK LEVEE SETBACK | \$487,668 |
| TOTAL WHITE RIVER BASIN | | \$2,500,885 |

Seattle Projects

| | | |
|-------------------------------|--------------------------------|------------------|
| 1112036 | WLFLS SOUTH PARK DWMSH BACKWTR | \$473,300 |
| TOTAL SEATTLE PROJECTS | | \$473,300 |

Countywide Costs

| | | |
|-------------------------------|--------------------------------|---------------------|
| 1122628 | WLFLG FLOOD REDUCTION GRANTS | \$642,217 |
| 1112022 | WLFLM EFFECTIVENESS MONITORING | \$266,801 |
| 1045042 | WLFL0 SUBREGNL OPPRTNTY FUND | \$5,235,084 |
| 1044281 | WLFLX CENTRAL CHARGES | \$36,970 |
| 1044279 | WLFLX FLOOD EMERGENCY CONTGNCY | \$9,914 |
| 1117333 | WLFLX WATERSHED MGMT GRANTS | \$5,953,790 |
| 0000000 | Default | \$23,907 |
| TOTAL COUNTYWIDE COSTS | | \$12,168,682 |

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|-----------------------------|--|---------------------|
| TOTAL CAPITAL BUDGET | | \$47,021,985 |
|-----------------------------|--|---------------------|

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|-------------------------------------|--|---------------------|
| Flood Control District Total | | \$55,689,199 |
|-------------------------------------|--|---------------------|

2016 Budget

Flood Control District Administration

Flood District Administration \$661,932

Operating Budget

| Description | |
|--|--------------------|
| Annual Maintenance | \$2,333,300 |
| Flood Hazards Plan, Grants, Outreach | \$425,000 |
| Flood Hazard Studies, Maps, Technical Services | \$1,204,000 |
| Flood Preparation, Flood Warning Center | \$463,000 |
| Program Management, Supervision, Finance, Budget | \$791,400 |
| Program Implementation | \$1,629,600 |
| Overhead / Central Costs | \$2,699,000 |
| District Planning, Outreach, Policy Technical Services | \$392,000 |
| Total | \$9,937,300 |

Capital Budget ¹

| Project | Description | |
|--------------------------------|--|---------------------|
| Snoqualmie River Basin | | |
| 1044460 | WLFL0 TIMBER LN EROSN BUYOUTS | \$583,495 |
| 1121588 | WLFL1 MF SNO CORRIDOR IMP | (\$1,531,678) |
| 1044469 | WLFL1 MF SNO CORRIDOR PLAN | \$94,307 |
| 1112032 | WLFL1 RECORD OFFCE 2011 REPAIR | (\$383) |
| 1122632 | WLFL1 SF SNO CORR EARLY ACTION | \$1,188,724 |
| 1121587 | WLFL1 SF SNO CORRIDOR IMP | \$28,608 |
| 1044466 | WLFL1 SF SNO CORRIDOR PLAN | \$236,313 |
| 1044517 | WLFL1 UPR SNO RES FLD MITIGTN | (\$1,159,049) |
| 1044581 | WLFL2 FARM FLOOD TSK FORCE IMP | \$115,214 |
| 1044576 | WLFL2 L SNO/ALDAIR CORRDROR PLN | \$1,200,000 |
| 1044582 | WLFL2 LWR SNO RESDL FLD MITGTN | \$636,540 |
| 1122633 | WLFL2 SE 19TH WAY REVETMENT | (\$76,412) |
| 1112046 | WLFL2 SINNEMA QUAAL 2011 REPR | \$267,715 |
| 1044579 | WLFL2 TOLT PIPELINE PROTECTION | \$7,637,476 |
| 1044645 | WLFL3 SAN SOUCI NBRHOOD BUYOUT | \$250,000 |
| 1123253 | WLFL3 TOLT CORRIDOR IMPLMNTN | \$25,252 |
| 1044644 | WLFL3 TOLT CORRIDOR PLAN | \$100,000 |
| 1112058 | WLFL3 TOLT R MILE 1.1 SETBACK | \$877,364 |
| 1044647 | WLFL4 ALPINE MANOR NEIGHBORHOOD BUYOUTS | \$180,528 |
| TOTAL SNOQUALMIE BASIN | | \$10,654,014 |
| Cedar River Basin | | |
| 1112037 | WLFL5 WILLOWMOOR FLDPLAIN REST | \$659,313 |
| 1116846 | WLFL6 LOWER COAL CRK PH I | (\$2,571,728) |
| 1116847 | WLFL6 MCALEER/LYON CHAN IMPRVM | \$350,000 |
| 1044734 | WLFL7 CDR PRE-CONST STRTGC ACQ | (\$2,294,744) |
| | WLFL7 FBD CORRIDOR IMPLEMENTATION | \$2,150,000 |
| 1123252 | WLFL7 CEDAR CORRIDOR IMPLMNTN | \$16,763 |
| 1116060 | WLFL7 CEDAR LEVEE SETBACK FEAS (Cedar Corric | \$549,600 |
| 1044651 | WLFL7 CEDAR R REP LOSS MITGATN | \$323,574 |
| 1119888 | WLFL7 RIVERBEND MHP ACQ | \$312,642 |
| TOTAL CEDAR RIVER BASIN | | (\$504,580) |

Green River Basin

| | |
|---|--------------------|
| 1116360 WLFL8 BLACK R PUMP STATION | (\$1,754,042) |
| 1123376 WLFL8 BOEING LEVEE HT INCREASE | (\$1,820,000) |
| 1112056 WLFL8 LWR RUSSELL LEVEE SETBACK | \$1,597,388 |
| 1126595 WLFL8 MILWAUKEE LEVEE #2-KENT | \$4,500,000 |
| 1123254 WLFL8 SWIF IMPLEMENTATION | \$38,806 |
| TOTAL GREEN RIVER BASIN | \$2,562,152 |

White River Basin

| | |
|--|--------------------|
| 1112049 WLFL9 COUNTYLINE TO A STREET | \$121,831 |
| 1112038 WLFL9 RIGHT BANK LEVEE SETBACK | (\$405,881) |
| TOTAL WHITE RIVER BASIN | (\$284,050) |

Seattle Projects

| | |
|--|------------------|
| 1112036 WLFLS S PARK DRAINAGE IMPROVEMENTS | \$500,000 |
| TOTAL SEATTLE PROJECTS | \$500,000 |

Countywide Costs

| | |
|--|---------------------|
| WLFLX CORRIDOR PLN DESIGN/CONST PLACEHOI | \$71,305 |
| 1122628 WLFLG FLOOD REDUCTION GRANTS | \$2,991,819 |
| 1045042 WLFLO SUBREGNL OPPRTNTY FUND | \$5,564,783 |
| 1044279 WLFLX FLOOD EMERGENCY CONTGNCY | \$250,000 |
| 1117333 WLFLX WATERSHED MGMT GRANTS | \$4,308,013 |
| TOTAL COUNTYWIDE COSTS | \$13,185,920 |

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|-----------------------------|---------------------|
| TOTAL CAPITAL BUDGET | \$26,113,456 |
|-----------------------------|---------------------|

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|-------------------------------------|---------------------|
| Flood Control District Total | \$36,712,688 |
|-------------------------------------|---------------------|

Notes:

1) The amounts shown here represent the budget as adopted in Resolution FCD2015-11.2. It is the new appropriation for 2016 and does not include carryover budget from the prior year. It is anticipated the FCD Board of Supervisors will adopt the carryover additions to the budget in the second quarter of 2016.