

WATER AND LAND RESOURCES DIVISION

CAPITAL IMPROVEMENT PROGRAM

Introduction to Program, Goals, and Highlights

The Water and Land Resources Capital Program has two primary goals.

- 1) To protect public safety and property from hazards posed by river flooding and excess storm water runoff, and
- 2) To protect and restore aquatic ecosystems from damage due to storm and surface water runoff and past land development practices.

The 2008-2013 CIP supports these goals through numerous actions, including repairing damaged river levees, relieving drainage problems affecting residential areas and agricultural fields, and restoring salmon habitat in the major watersheds.

There are two key developments for 2008:

First, the Division proposes to begin implementation of a work program for the King County Flood Control Zone District, which was established by the King County Council in April, 2007 under Ordinance 15728. The District will protect public health and safety, regional economic centers, public and private properties and transportation corridors by addressing the backlog of maintenance and repairs to levees and revetments, acquiring repetitive loss properties and other at-risk floodplain properties, and improving countywide flood warning and flood prediction capacity.

The overarching strategies and objectives for the District include:

- Improving levee protection through major commercial, industrial and residential areas,
- Improving flood water conveyance and capacity,
- Reducing hazards by removing flood, erosion, and landslide prone residential structures,
- Providing safe access to homes and businesses by protecting key transportation routes,
- Minimizing creation of new risks to public safety from development pressure.

The second development concerns the Surface Water Management (SWM) program. The Division has maintained a policy for the past several years of transferring 30% of budgeted SWM fee revenue for capital projects. In the 2008 budget the transfer has been reduced from 30% down to 26% due to a loss of revenue from recent annexations (West Auburn and Auburn Lea Hill) as well as increased costs in the operating budget. These costs are driven by 1) new State requirements under the agency's NPDES Storm Water permit, as well as 2) covering inflation and Critical Areas Ordinance (CAO) implementation costs without a rate increase.

Project Prioritization Methodology

Prioritization: The 2008 Surface Water Management CIP was prioritized under the “priority team” process intended to optimize resources given the division’s diverse objectives. The different priority teams contain representatives from across the division’s many programs including Basin Stewards, River Management, Agriculture Preservation, Natural Lands Management, Stormwater Management, etc. One team was formed to oversee public safety projects and five were formed for ecosystem protection projects (for WRIAs 7, 8, 9, 10 and Vashon). Each team prepared a 6-year CIP for their area, considering all relevant planning information and project criteria such as cost, effectiveness, feasibility, urgency, and geographic equity. Funding was then allocated by division management across the priority teams with a formula constructed to balance the agency’s two goals and the geographic spread of the County.

The Flood District CIP was initially prioritized using criteria described in the 2006 King County Flood Hazard Reduction Plan. A numeric score was assigned considering severity of flood risk in terms of threats to public safety, damage to public infrastructure, impacts on the regional economy, and damage to private structures. Subsequent refinements were made considering criteria such as urgency, legal responsibility, and funding or partnership opportunities.

Asset Condition Assessment: Water and Land Resources capital maintenance conducts recurring inspections of river levees and revetments to guide expenditures of the Rivers Major Maintenance program. Nearly all of the 500 river protection facilities in the WLR inventory are at least 30 years old, with some dating back to the early 1900’s. These facilities are not assets to which the standard concept of “asset life cycle” applies. In general, they are constructed of soil and rock and can function indefinitely as long as they are maintained in their intended functioning condition. Each year this maintenance need exceeds the funding available from the River Improvement Levy, resulting in increased risks of facility failure, damages to public and private property, and threats to public safety.

Growth Management and Comprehensive Plan Issues

The projects included in the 2008 request address the Growth Management Act policy directives in accordance with the 2004 King County Comprehensive Plan. A number of policies refer to the capital program and capital projects generally, and a number of policies are specific to the work of WLRD.

- Chapter 4, Environment, contains Policy E-126 which states that stormwater runoff shall be managed through a variety of methods to limit impacts to aquatic resources, protect and enhance the viability of agricultural lands, and promote groundwater recharge.
- Policy E-128 requires that river and stream channels, stream outlets, headwater areas, and riparian corridors be preserved, protected and enhanced for their hydraulic, hydrologic, ecological and aesthetic functions, including their functions in providing woody debris sources to salmonid-bearing streams.

- Policy E-168 states that King County shall use measures such as regulations, incentives, capital projects and purchase, to designate and protect fish and wildlife habitat conservation areas.
- Chapter 7, Facilities, lists resources and services that the County must provide: regional parks, trails, and preserved open spaces; water resource management, surface water management and flood warning, protection and preservation of natural resources (Policy F-103).

Financial Planning and Policy Overview

Multi-year financial plans are maintained for each CIP fund showing all revenues and expenditures for the present year, the prior year actuals, and a two-year projection. A six-year plan is prepared annually to quantify the division’s long-term capital requirements in conformance with long-term comprehensive plans.

The Water and Land Resources Division has several funding sources for capital projects. The primary sources are Surface Water Management fees, the River Improvement Levy, and the Conservation Futures Levy. The division also receives substantial external funding from the Salmon Recovery Fund Board (SRFB), the Federal Emergency Management Agency (FEMA), the King Conservation District (KCD), the Aquatic Lands Enhancement Account (ALEA), the City of Seattle, and others.

A summary of the various revenue sources is shown in Table A.

Table A: Major CIP Funds and Restrictions		
Fund No.	Fund Name	Fund Usage/Restrictions
3151	Conservation Futures Tax	KCC Citizen Oversight Committee selects acquisition projects from a list of applications meeting specific Conservation Futures Levy selection criteria for County Council approval. The revenue source is the Conservation Futures Levy.
3180	Flood Hazard Reduction Capital Fund	For projects to control waters subject to flooding conditions through the construction, operation and maintenance of dams and impounding basins and dikes, and the acquisition of property. (This fund is proposed to be phased out in preference to fund 3541)
3292	Surface Water Management Capital Fund	Funds are to be used for projects that protect public safety and property from stormwater hazards and that restore and protect aquatic ecosystems. The primary revenue sources are SWM fees and bonds and external grants.

3522	Open Space Non-Bond Fund	Revenue from numerous sources such as REET, IAC and SRFB grants. Restrictions on usage depend upon revenue source, usually restricted to specific area or properties.
3571	King County Flood Control Zone District CIP (Proposed)	Funds are to be used for capital purposes in pursuit of the objectives of the King County Flood Control Zone District. Actions are primarily the construction, repair, and modification of flood management facilities and the acquisition of property to remove structures from the flood zone or create flood storage. The primary revenue source is the King County Flood Control Zone District levy, supplemented by the River Improvement Fund Levy and federal/state grants.
3672	Environmental Resource	Contains the \$2.5M received from the City of Tacoma as mitigation for their second water supply pipeline. This fund was established through a comprehensive mitigation plan for the project that was adopted by King County Council in 1993. The monies are used for ecosystem restoration in the Green River basin in accordance with the project list approved by the steering committee.
3673	Mitigation Reserves	This fund contains fees paid to the County by developers in lieu of mitigating impacts to critical area. WLR uses these fees for wetland mitigation projects as described under the Critical Areas Ordinance.

2008 Significant Project Highlights

WRIA 7, 8, 9, 10 and Vashon Ecosystem Protection Projects: \$8,845,000 (for all five projects)

The Water Resource Inventory Area (WRIA) projects collectively protect or restore aquatic ecosystems in King County. Each WRIA project covers a distinct watershed within the waterway systems in Washington: WRIA 7 is the Snoqualmie River Watershed, WRIA 8 is located in the unincorporated portions of the Cedar/Lake Washington Watershed, and WRIA 9 is located in the Green River Watershed. WRIA 10 is the White River Watershed in South King County and the Vashon Ecosystem project is located on Vashon Island. Typical actions include reconnecting side-channel habitat to the mainstem river, removing levees and other forms of bank hardening, eliminating man-made barriers to fish migration such as blocked culverts, increasing riparian forest cover to improve water quality, and recreating log jams to increase dynamic complexity in river flows.

Public Safety & Major Property Protection: \$2,031,051

This project undertakes actions to preserve public safety and/or protect property from events such as flooding, erosion, adverse water quality, or the deterioration of stormwater facilities designed to prevent such events. The highest priority projects in this program are those which protect the health and safety of the public, with particular emphasis given to preventing flooding inside inhabited structures and allowing emergency vehicle access. Other important projects address water quality problems which adversely affect both public safety and the ecosystem. These projects are usually identified through citizen complaints, basin planning, facility inspections, monitoring data, or reconnaissance by County engineers.

Enumclaw Bio-Gas Project: \$500,000

This project explores alternative ways of handling manure on the Enumclaw Plateau to maximize waste to resources, protect water quality and support local dairy farming. The first phase was to explore feasibility of a digester system. Based on initial feasibility work, DNRP determined that the most effective approach is not to acquire land for large-scale aggregation, but to anchor the demonstration project on a single farm where aggregation of manure from neighboring farms is possible.

King County is now in the second phase of the project which is to establish the best site on a dairy farmer's land and use the current USDA grant to create a design of the digester, solids recovery and compost production, energy use and nutrient reduction program. The project also will seek to aggregate additional adjacent farms, if feasible.

The third phase will be permitting and construction. The decision not to acquire land for large scale aggregation allows the 2007 land acquisition budget of \$420,000 to be used for permitting, construction and grant match costs. The final phase will be operations, marketing of solids, monitoring progress on nutrient reduction and on-going effort to optimize efficiency of operations. The total project cost is estimated to be \$2,765,000 to be revenue backed by grant applications and debt payments from the Current Expense Fund.

Flood Control Zone District

In April 2007, the King County Council created a new countywide Flood Control Zone District (Ordinance 15728) to implement the 2006 King County Flood Hazard Management Plan, which identifies and recommends projects, programs and policies to address the county's aging flood protection system. Over the course of the summer of 2007, the FCZD Advisory Committee, composed of 14 elected officials and one representative from the Unincorporated Area Councils, met and recommended a budget and work program based on a recommended countywide property tax levy of 10 cents per \$1,000 of assessed valuation. The 2008 Executive Proposed CIP Budget for the FCZD implements the Advisory Committee's recommended work plan based on the recommended levy rate.

Expanded Service

The flood protection work previously undertaken in the River Improvement Fund (with partial revenue support from the former Green River Flood Control Zone District) and the Inter-County River Improvement District are absorbed and greatly expanded by the new countywide FCZD. The 2008 Executive Proposed Capital budget for the FCZD is \$18,132,484. The work of the

FCZD is organized into five categories: the Snoqualmie/South Fork of the Skykomish River Basin, the Green River Basin, the White River Basin, the Cedar/Sammamish River Basin, and countywide projects.

Snoqualmie/South Fork Skykomish River Basin

Lower Snoqualmie River Flood Protection: \$3,890,134

Upper Snoqualmie River Flood Protection: \$1,497,071

Raging River Flood Protection: \$1,130,480

The Snoqualmie River/South Fork Skykomish River Basin Program will be responsible for implementing flood hazard management projects and programs, staffing the advisory and basin technical committees, and reporting progress to the FCZD's Board of Supervisors, Advisory Committee, and Basin Technical Committee. Specific projects include levee and revetment repairs and rehabilitation; repetitive property loss acquisitions; and home elevations. Specific programmatic elements for the Snoqualmie River/South Fork Skykomish River Basin Program include floodplain and channel migration zone mapping; flood protection facility and flood hazard assessments; and providing technical and engineering assistance to cities.

Green River Basin

Green River Flood Protection: \$3,761,586

The Green River Basin Program will be responsible for implementing flood hazard management projects and programs, staffing the advisory and basin technical committees, and reporting progress to the FCZD's Board of Supervisors, Advisory Committee, and Basin Technical Committee. Specific projects include levee and revetment repairs and rehabilitation; repetitive property loss acquisitions; and home elevations. Specific programmatic elements for the Green River Basin Program include floodplain and channel migration zone mapping; flood protection facility and flood hazard assessments; and providing technical and engineering assistance to cities.

Cedar/Sammamish River Basin

Cedar River Flood Protection: \$5,081,957

The Cedar/Sammamish River Basin Program will be responsible for implementing flood hazard management projects and programs, staffing the advisory and basin technical committees, and reporting progress to the FCZD's Board of Supervisors, Advisory Committee, and Basin Technical Committee. Specific projects include levee and revetment repairs and rehabilitation; repetitive property loss acquisitions; and home elevations. Specific programmatic elements for the Cedar/Sammamish River Basin Program include floodplain and channel migration zone mapping; flood protection facility and flood hazard assessments; and providing technical and engineering assistance to cities.

The following table displays major projects over \$1,000,000 for which appropriations are requested.

Significant Projects Flood Hazard Reduction, Surface Water Management Capital Improvement Programs	2007 Executive Proposed Budget	Continuation of Existing Project
Surface Water Management Capital Program:		
WRIA 7 Ecosystem Protection	\$ 3,285,000	X
WRIA 9 Ecosystem Protection	\$ 4,250,000	X
Other WRIA Ecosystem Projects	\$ 1,310,000	X
Public Safety & Major Property	\$ 2,031,051	X
Enumclaw Biogas Project	\$ 500,000	X
Flood Control Zone District:		
Cedar River Flood Protection	\$ 5,081,957	
Lower Snoqualmie River Flood Protection	\$ 3,890,134	
Green River Flood Protection	\$ 3,761,586	
Upper Snoqualmie River Flood Protection	\$ 1,497,071	
Raging River Flood Protection	\$ 1,130,480	

The following tables provide a list of identified sub-projects and the related master project for the Surface Water Management Capital Fund and the new Flood Control Zone District Capital Fund in the 2008 Executive Proposed Budget.

Table B: Fund 3292 Subproject and Master Project Detailed Budget Request

Master Project	Sub- project	Project Description	Total
P20000		Public Safety / Property Protection	
	0A1205	May Valley Flood Reduction	\$75,000
	0D1871	Mill Creek Trib 045 Tightline	\$271,742
	0R1795	Vashon Groundwater Model	\$66,000
	P20001	Public Safety Grant Contingency	\$250,000
	P20011	Lake Hicks Pump Intake	\$50,000
	P20012	November 06 Flood Repairs	\$135,000
	P20015	Johnson Pond (FEMA Grnt)	\$837,500
	P20018	SE 113th Issaquah Creek @ Petty	\$45,000
	P20800	Feasibility Reserve	\$50,000

	P20900	Emergency/Opportunity Reserve	\$250,809
P23000		WRIA 7 Ecosystem Restoration	
	0A1795	Lower Tolt Restoration	\$2,175,000
	P23011	Gilead/MacDonald Floodplain Reconnection	\$360,000
	P23012	Chinook Bend Levee Removal	\$750,000
P24000		WRIA 8 Ecosystem Restoration	
	0D1155	Lions Club Channel Restoration	\$9,500
	P24012	Bear & Issaquah & Cedar Riparian Restoration	\$50,500
	P24018	Grant Support Design/Feasibility	\$60,000
	P24021	Cedar Side Channel Inventory & Evaluation	\$35,000
	P24022	Bear: Cottage/Cold Creek Acquisition	\$305,000
P25000		WRIA 9 Ecosystem Restoration	
	1A1647	Site 1/North Winds Weir	\$2,523,000
	1B1647	Lones Levee	\$40,000
	1F1647	Fenster-Pautzke - Phase 2 - KC	\$1,250,000
	1H1647	Big Springs Creek	\$370,000
	P25020	Other Newaukum Restoration	\$67,000
P26000		WRIA 10 Ecosystem Restoration	
	0Z1795	Boise Mouth Restoration	\$85,000
P27000		Vashon Ecosystem Restoration	
	P27010	Natural Drainage Towncenter	\$25,000
	P27026	Heyer Pt Drift Cell Preservation	\$315,000
	P27027	Paradise Valley Acq II	\$425,000

*Council Adopted Budget:
No changes.*

Table C: Fund 3571 Subproject and Master Project Detailed Budget Request

Master Project	Sub-project	Project Description	Total
FL0000		Skykomish/Miller River Flood Protection	
	FL0001	Miller River Home Buyout	\$764,606
FL1000		Upper Snoqualmie River Flood Protection	
	FL1001	Middle Fork Snoqualmie River Flood Damage	\$167,938
	FL1002	North Bend Area Residential Flood Mitigation	\$270,257
	FL1003	South Fork Levee System Improvements	\$282,096
	FL1004	South Fork Snoqualmie Flood Damage Repairs	\$699,868
	FL1005	Upper Snoqualmie River Flood Damage Repairs	\$76,912
FL2000		Lower Snoqualmie River Flood Protection	
	FL2001	Aldair Buyout	\$257,360
	FL2002	Lower Snoqualmie River Flood Damage Repairs	\$1,889,523
	FL2003	Neal Road Relocation	\$1,623,803
	FL2004	Tolt River Supplemental Study	\$167,532
FL3000		Tolt River Flood Protection	
	FL3001	Tolt River Flood Damage Repairs	\$105,020
FL4000		Raging River Flood Protection	
	FL4001	Alpine Manor Mobile Home Park Neighborhood	\$626,606
	FL4002	Raging River Flood Damage Repairs	\$503,873
FL5000		Sammamish River Flood Protection	
	FL5001	Willowmoor Floodplain Restoration	\$329,635
FL6000		Issaquah Creek Flood Protection	
	FL6001	Issaquah Creek Streambank Stabilization	\$58,069
FL7000		Cedar River Flood Protection	
	FL7001	Cedar Grove Mobile Home Park Acquisition	\$1,217,495
	FL7002	Cedar Rapids Levee Setback	\$153,396

	FL7003	Cedar River Flood Damage Repairs	\$146,608
	FL7004	Cedar River Repetitive Loss Mitigation	\$3,435,394
	FL7005	Elliott Bridge Levee Setback and Acquisition	\$101,961
	FL7006	Rainbow Bend Levee Setback and Floodplain	\$105,960
FL8000		Green River Flood Protection	
	FL8002	Alaskan Way Seawall Replacement Feasibility and	\$559,900
	FL8003	Green River 2006 Flood Damage Repairs	\$2,166,571
	FL8004	Myer's Golf Levee	\$598,898
	FL8005	Nursing Home Levee	\$320,889
	FL8006	Segale Levee #1	\$115,327
FL9000		White River Flood Protection	
	FL9001	County line to A-Street Flood Conveyance	\$133,530
	FL9002	Red Creek Acquisitions	\$89,876
	FL9003	White River Flood Damage Repair at Stuck River	\$83,927
	FL9004	White-Greenwater Acquisition	\$219,654

Council Adopted Budget Changes:

FL0000 – Capital Contracts \$18,132,484

FL0000 – Skykomish/Miller River Flood Protection - (\$764,606)

FL1000 – Upper Snoqualmie River Flood Protection – (\$1,497,071)

FL2000 – Lower Snoqualmie River Flood Protection – (\$3,890,134)

FL3000 – Tolt River Flood Protection – (\$105,021)

FL4000 – Raging River Flood Protection – (\$1,130,480)

FL5000 – Sammamish River Flood Protection – (\$329,634)

FL6000 – Issaquah Creek Flood Protection – (\$58,068)

FL7000 – Cedar River Flood Protection – (\$5,081,957)

FL8000- Green River Flood Protection – (\$3,761,586)

FL9000 – White River Flood Protection – (\$526,987)

FLM000 – Flood CIP Monitoring/Maintenance (\$126,940)

FLX100 – Flood District Capital Contingency – (\$860,000)

Section 130 ERI EXPENDITURE RESTRICTION:

Of this appropriation, \$18,132,483 shall be expended solely for the implementation of the King County Flood Control Zone District capital program.

CIP Program Accomplishments and Completion Lists

Projects Completed in 2006

0A1475	North Wind's Weir Phase I
0A1767	Des Moines Creek Regional Detention Facility – Phase II construction
0A1785	Neighborhood Drainage Assistance Program: 6 projects constructed
0A1799	Drainage and Habitat Improvement Program: 1 project constructed
0A1827	Rapid Response Opportunity Emergency: 1 project constructed
0B1395	Somerset Conveyance Improvement
0B1787	Vashon Natural Drainage: 1 project constructed
0B1871	Mallard Lake Flood Reduction:
0C1311	12th Avenue SW Conveyance Improvement Phase II:
0D1155	Lions Club Habitat Restoration Phase II: constructed
0F1095	Small Habitat Restoration Program: 15 projects constructed,
0F1155	Taylor Creek Maxwell Road Habitat Restoration – Final Phase
0J1881	Taylor Creek Lane: building demolition
0L1795	Raging River at Carlin Levee: constructed
2A1862	Habitat Feasibility: 8 projects investigated
86313F	Taylor Creek – Lane Habitat Restoration – WSDOT Partner
86318F	Cedar Hills Stormwater Management Improvements
P27020	Vashon-Ellis Creek Acq - 7 Parcels

Projects to be Completed in 2007

0A1205	May Creek Obstruction Removal: 1 project constructed
0A1311	Ambaum Way Drainage Improvement
0A1767	Des Moines Creek Basin High Flow Bypass:
0A1781	Lake Hicks/Ambaum Way Drainage Improvement:
0A1785	Neighborhood Drainage Assistance Program: 3 projects constructed
0A1799	Drainage and Habitat Improvement Program: 1 project constructed
0E1145	Cedar Rapids Floodplain Restoration (Cedar River)
0F1095	Small Habitat Restoration Program: 15 projects constructed
1A1505	Auburn Narrows Phase II: construct
5B1767	Des Moines Creek Stream Restoration Phase I
7B1767	Des Moines Creek Stream Reconnection
86313F	Madsen Creek R/D Pond Repairs Phase III
A47112	Rainbow Bend Acquisition (Cedar River)
A47113	USGS Flood Gage Cableway Replacement (Snoqualmie River)
D47111	Ricardi Reach Levee Removal
MR8001	Cold Creek Mitigation Reserve
P20011	Lake Hicks Pump Inlet
P25001	White Center Regional Stormwater Wetland Restoration
P27010	Vashon Natural Drainage – Center Park and Ride
P27020	Ellis Creek Estuary Restoration
P27020	Vashon Island - Ellis Creek

Projects to be Completed in 2008

0A1785	Neighborhood Drainage Assistance Program: 3 projects
0A1795	Lower Tolt Levee Setback: Phase I construction
0C1645	Hamm Creek Estuary Restoration
0E1645	Hamm Creek Water Quality Pond Retrofit
0S1795	Vashon - 3-4 Parcels
1A1647	North Wind Weir Intertidal Restoration
1H1647	Big Spring Creek: Phase I construction
A47101	Snoqualmie 205 Downstream Home Elevations
P20012	November 2006 Flood Repairs
P2097B	Johnson Pond – Small Dam Remediation
P23012	Chinook Bend Levee Removal: Phase I construction
P24020	Carey Creek Culvert Removal:
047112	Snoqualmie Valley Home Elevation Project (within master project)
047112	Upper Preston Floodway Acquisitions (Raging River)
FL0001	Miller River Home Buyout
FL2003	Neal Road Relocation
FL2004	Tolt River Supplemental Study
FL7002	Cedar Rapids Levee Setback
FL7004	Cedar River Repetitive Loss Mitigation

List of Acronyms

ALEA	Aquatic Lands Enhancement Account
FEMA	Federal Emergency Management Agency
FCZD	Flood Control Zone District
GRFCZD	Green River Flood Control Zone District
IAC	Washington State Inter-Agency Committee for Recreation
KCC	King County Council
KCD	King Conservation District
REET	Real Estate Excise Tax
SRFB	Salmon Recovery Fund Board
WRIA	Water Resource Inventory Area