

WATER AND LAND RESOURCES DIVISION CAPITAL IMPROVEMENT PROGRAM

Introduction to Program, Goals, and Highlights

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

- 1) To protect King County citizens and property from hazards posed by river flooding and excess storm water runoff.
- 2) To protect or restore aquatic ecosystems from damage resulting from storm and other surface water runoff.

These goals are carried out by four different sections, aligned in a division-wide reorganization last year.

- The **Capital Projects Section** is responsible for the design and construction of the majority of projects required to resolve localized flooding, prevent erosion, or restore aquatic habitat.
- The **Rivers Program** within the Regional Services Section undertakes capital projects to protect the public from flooding on major river systems. These include major maintenance of levees and revetments, flood storage construction projects, and home buyouts to restore the natural floodplain.
- The **Office of Rural and Resource Programs** acquires open space and other real estate to protect aquatic ecosystems and provide flood storage. These programs work to reduce flooding of agricultural fields and promote the construction of best management practices by rural landowners to improve water quality.
- The **Stormwater Section** manages small capital projects in neighborhoods to reduce localized flooding and improve water quality. Projects include culvert replacements, installation of drainage pipe, or the retrofit of stormwater flow-control facilities.

In 2007 Water and Land Resources will continue implementing the recommendations from the *2004 Performance Audit of the Roads Capital Improvement Program*. Water and Land Resources adopted these recommendations for their capital program as model for an effective and efficient system for accomplishing capital projects. The primary objective in 2007 is to implement the project management information system. Once in place this system will:

- Enable supervisors to better fit project schedules to staff availability
- Provide continually updated schedules and expenditure projections
- More accurately track cost, schedule, and other performance measures
- Create a detailed record of each project in order to systematically evaluate results and incorporate lessons learned.

The King County Flood Hazard Management Plan proposes and the King County Council has announced its intent to create a countywide flood control zone district to provide adequate flood control protection to the citizens of King County. If enacted, this would greatly expand the Water and Land capital program beginning in 2008.

Project Prioritization Methodology

Prioritization: The 2007 Executive Proposed Budget for the WLRD CIP was prioritized under a new process that more fully optimizes resources given the division's diverse objectives. Several new "priority teams" were formed with staff from across the division including Basin Stewards, River Management, Agriculture Preservation, Natural Lands Management and Stormwater Management. One team was formed to oversee public safety projects and five were formed for ecosystem protection projects (for WRAs 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 across the County.

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 for 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 2007 request address the Growth Management Act policy directives in accordance with the Adopted 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.

Water and Land 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 Green River Flood Control Zone District (GRFCZD), 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 Levy	KCC Citizen Oversight Committee selects acquisition projects from a list of applications meeting specific Conservation Futures Levy selection criteria for 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. The primary revenue sources are River Improvement Fund levy, Green River Flood Control Zone District fees, and external grants.
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.
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.

2007 Significant Project Highlights

WRIA 7, 8, 9 Ecosystem Protection Projects: 2007 Requested Budget Totals \$5,324,627 (for all three 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. 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: 2007 Requested Budget \$1,165,000

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 Biogas Project: 2007 Requested Budget \$518,990

The 2007 budget includes funding for the first phase of the Enumclaw Biogas Project. In its entirety this is a cooperative pilot project that will develop ways of converting manure from the Enumclaw Plateau's dairy farms into compost and energy. The project will include a research effort with Washington State University to reduce nutrients from the digested manure. This project upon completion will protect water quality and support local dairy farming. The budget for the first phase will cover the estimated \$420,000 cost of land acquisition using bond financing. The first phase also includes budget authority associated with the U.S. Department of Agriculture grant that has been awarded to develop the proposal to build a manure digester that converts methane gas from cow manure into electricity and create a valuable composting material.

The following table displays major projects over \$450,000 for which appropriations are requested.

Significant Projects Flood Hazard Reduction, Surface Water Management and Habitat, Agriculture and Forest Preservation Capital Improvement Programs	2007 Executive Proposed Budget	Continuation of Existing Project
WRIA 7 Ecosystem Protection	\$ 2,112,951	X
WRIA 8 Ecosystem Protection	\$ 1,618,403	X
WRIA 9 Ecosystem Protection	\$ 1,593,273	X

Significant Projects Flood Hazard Reduction, Surface Water Management and Habitat, Agriculture and Forest Preservation Capital Improvement Programs	2007 Executive Proposed Budget	Continuation of Existing Project
KCD Grant Contingency	\$ 1,169,093	X
Public Safety & Major Property	\$ 1,165,000	X
Critical Areas Mitigation	\$ 696,708	X
Agricultural Drainage Assistance	\$ 550,000	X
Enumclaw Biogas Project	\$ 518,990	
Neighborhood Drainage & Water Quality	\$ 487,000	X
Des Moines Basin Plan CIP	\$ 484,000	X

In 2006 Water and Land Resource Division began converting the SWM capital fund to a new project numbering system where appropriation is requested under a fewer number of broadly scoped projects. The intent is to create a more meaningful budget for council that clearly communicates the goals of the program, decreases the need for quarterly supplemental appropriations, and provides greater flexibility for program staff in an effort to increase program productivity. The following table provides a list of identified sub-projects and the related master project for the 2007 request.

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	\$100,000
	0A1871	Lake Hicks/Ambaum Way Drain Improv	\$300,000
	0D1871	Mill Creek Trib 045 Tightline	\$175,000
	0R1795	Vashon Groundwater Model	\$200,000
	P20003	Feasibility Reserve	\$80,000
	P20010	White Center Regional Pond Ph 2 reveg.	\$60,000
	P20011	Lake Hicks Pump Intake	\$100,000
	P20900	Emergency/Opportunity Reserve	\$150,000
		P20000 Total	\$1,165,000
P23000		WRIA 7 Ecosystem Restoration	
	0A1795	Lower Tolt Restoration	\$950,000
	0L1795	Raging Rvr Preston Reach Restoration	\$29,951
	P23001	WRIA 7 Grant Contingency	\$300,000
	P23011	Gilead/MacDonald Floodplain Reconnection	\$300,000
	P23012	Chinook Bend Levee Removal	\$458,000
	P23013	Byers Riparian Restoration	\$40,000

Master Project	Sub-project	Project Description	Total
	P23911	WRIA 7 Programmatic Permits	\$35,000
		P23000 Total	\$2,112,951
P24000		WRIA 8 Ecosystem Restoration	
	0A1826	Cedar/Lk Wash ERP	\$46,620
	0E1145	Cedar Rapids Floodplain Restoration	\$75,000
	P24001	WRIA 8 Grant Contingency	\$300,000
	P24011	Cold Creek Mitigation (Williams Pipeline)	\$696,708
	P24012	Bear / Issaquah / Cedar Riparian Restoration	\$60,000
	P24013	Rural Opportunity Fund	\$10,000
	P24014	Xfr to 352C01 Taylor Mtn	\$180,000
	P24015	Xfr to 352263 Iss/Carey/Holder	\$105,000
	P24016	Xfr to 001784 Ricardi	\$29,575
	P24017	Xfr to 0Z1790 Dorre Don	\$55,500
	P24018	Grant Support Design/Feasibility	\$25,000
	P24911	WRIA 8 Programmatic Permits	\$35,000
		P24000 Total	\$1,618,403
P25000		WRIA 9 Ecosystem Restoration	
	0A1525	Plemmons Meander Restoration	\$20,000
	0A1647	Green/Duwamish River Restoration	\$46,620
	1A1647	Site 1	\$100,000
	1B1647	Lones Levee	\$280,000
	1D1647	Newaukum Cr – Feasibility	\$205,000
	1H1647	Big Springs Creek	\$187,500
	P25001	WRIA 9 Grant Contingency	\$300,000
	P25011	KCD Opportunity Grant	\$112,000
	P25012	Flaming Geyser	\$150,000
	P25013	Xfr to 001841 Metzler Park	\$25,588
	P25014	Xfr to Z11293 Mid Green R	\$62,065
	P25016	Xfr to 352G02 Newaukum Cr Acq	\$30,500
	P25017	Xfr to 352G03 Bass/Beaver	\$39,000
	P25911	WRIA 9 Programmatic Permits	\$35,000
		P25000 Total	\$1,593,273
P26000		WRIA 10 Ecosystem Restoration	
	0Z1795	Boise Mouth Restoration	\$167,811
	P26001	WRIA 10 Grant Contingency	\$50,000
		P26000 Total	\$217,811
P27000		Vashon Ecosystem Restoration	
	P27001	Vashon Grant Contingency	\$300,000

Master Project	Sub-project	Project Description	Total
	P27010	Natural Drainage Towncenter	\$84,720
	P27020	Ellis Saltmarsh (Acq & Restoration)	\$15,000
	P27021	Ellisport Cr Soil Remediation	(\$40,000)
	P27024	Xfr to 352V01 Shinglemill Acq	\$70,000
		P27000 Total	\$429,720

Council Adopted Budget

0A1005 – Laughing Jacobs/Rainbow Ranch – (\$235,841)

P20016 – Deer Creek Flood Reduction – \$235,841

CIP Program Accomplishments and Completion Lists

Projects Completed in 2005

- 050N03 Snoqualmie Park Trail Repair (support to King County Parks):
- 0A1627 White Center Greenway Wetland Phase I
- 0A1767 Des Moines Creek Regional Detention Facility and High Flow Bypass
- 0A1785 Neighborhood Drainage Assistance Program: 9 projects constructed
- 0A1786 Drainage and Habitat Improvement Program: 1 project constructed
- 0A1798 Rural Small Habitat Restoration Program: 7 projects constructed
- 0A1803 Rural Rapid Response Opportunity Emergency: 1 project constructed
- 0B1785 Urban Rapid Response Opportunity Emergency: 3 projects constructed
- 0C1311 12th Avenue SW Conveyance Improvement Phase I
- 0C1625 Lakewood Park Low Impact Development Water Quality Demonstration Project (King County Parks partner):
- 0D1155 Lions Club Habitat Restoration Phase I
- 0F1095 Urban Small Habitat Restoration Program: 14 projects constructed
- 0F1155 Taylor Creek Restoration Final Phase:
- 0G1795 Shamrock Park – Ribary Creek R/D Pond Restoration
- 1F1155 Taylor Creek Williams Pipeline Mitigation:
- 86317F Madsen Creek Stormwater Management: Phase I Madsen R/D pond
- 047101 Snoqualmie 205 USACOE (Snoqualmie River) – Bridge Abutment Removal
- 047113 Flood Warning Center Move to King Street Center and Technological Improvements
- 047107 Mill Creek/Mullen Slough Flood Mgmt – John Flowers Parcel Acquisition–Ph 2

- 1B7112 McKnight Flood Buyout (Cedar River) – Residential Home Acquisition
F47112 FCAAP Arcadia Buyout

Projects to be 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: 2 projects constructed
0B1871 Mallard Lake Flood Reduction:
0C1311 12th Avenue SW Conveyance Improvement Phase II:
0D1155 Lions Club Habitat Restoration Phase II
0F1095 Small Habitat Restoration Program: 6 projects constructed;
0J1881 Taylor Creek Lane: Building demolition
0L1795 Raging River at Carlin Levee: Complete design, permitting, and construction
86313F Madsen Creek R/D Pond Repair (WTD funds) – Phase II of 3 phases
86318F Cedar Hills Stormwater Management Improvements:
011064 Breda Levee Setback – Phase 2 (Green River)
Q47105 Banchemo Revetment Repair (Cedar River)
011055 South 228th Bridge Mitigation (Green River)
A47112 Rainbow Bend Acquisition (Cedar River) – Phase 1
047112 Schoch Acquisitions (Tolt River)

Projects to be Completed in 2007

- 0A1205 May Creek Obstruction Removal 1 project constructed
0A1311 Ambaum Way Drainage Improvement (Burien partner):
0A1475 North Wind’s Weir Intertidal Restoration Phase II:
0A1767 Des Moines Creek Basin High Flow Bypass:
0A1781 Lake Hicks/Ambaum Way Drainage Improvement:
0A1785 Neighborhood Drainage Assistance Program 5 projects constructed
0A1795 Lower Tolt Levee Setback:

0A1799 Drainage and Habitat Improvement Program: 1 project constructed
0A1825 CIP Monitoring and Maintenance Program
0F1095 Small Habitat Restoration Program: 13 projects constructed
0F1155 Taylor Creek/Maxwell Road Habitat Restoration – Final phase
0Z1795 Boise Mouth Restoration
1A1505 Auburn Narrows Phase II
86313F Madsen Creek R/D Pond Reparation Phase III
0E1145 Cedar Rapids Floodplain Restoration
A47104 Snoqualmie 205 USACOE – Downstream Assistance Program Home Elevations
R47105 Pacific City Park Revetment (White River)
A47112 Rainbow Bend Buyout – Phase 2
1A1647 North Wind Weir Intertidal Restoration

List of Acronyms

ALEA	Aquatic Lands Enhancement Account
FEMA	Federal Emergency Management Agency
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