

Rural Drainage Program

2002 Accountability Report to the King County Council

May 2003

Department of Natural Resources and Parks

Water and Land Resources Division



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SUMMARY AND OVERVIEW

The King County Council launched the Rural Drainage Program (RDP) in late 1999 by extending the surface water management fee to eastern King County and Vashon Island (Ordinance 13695). In leading to that decision the Executive made several commitments to both the Council and the affected communities regarding staff performance, the provision of service and the use of funds. This document is intended as a status report on these commitments and the general progress of the Rural Drainage Program.

PROGRAM CHANGES

In 2002 the King County Council adopted several changes to the RDP. First, the SWM fee was increased by 20%, raising the annual residential fee from \$85 to \$102, as well as the commercial charges by an equivalent amount. Second, a number of programs previously funded by the current expense fund, paid for with property taxes, were transferred to the RDP. These were primarily programs for the preservation of forests and agriculture in King County, given the stormwater and environmental benefits provided by forest cover and the open space of agricultural fields.

PROGRAM COMMITMENTS

Many of the commitments made by the Executive to the council and public were first stated in the original proposal document for the Rural Drainage Program. Others were made during the deliberations on extending the fee and program budget. Specifically, these commitments are as follows:

Spending Fees Where Collected – The rural drainage program committed that over time expenditures on surface water services will roughly equal the revenue collected in the same given area. To facilitate this effort, the rural service area has been divided into three subsections—the Snoqualmie Valley, Enumclaw Plateau, and Vashon Island. The chart on page 4 shows the comparison of cumulative expenditures to cumulative revenues for the three geographic areas.

As the graph shows, the percentage of expenditures for Vashon is lower than the percentage of revenue, meaning that Vashon is underspent, while the other two areas are slightly overspent. There are a number of factors that account for this, many of which are not under the control of the program. For instance, the drainage complaint and environmental enforcement officers respond to all complaints they receive, and the citizens of Vashon phone in disproportionately fewer complaints than the citizens of the Enumclaw Plateau and Snoqualmie Valley. The Island has also had less pressing needs to date for large capital projects than the other two areas, although this is beginning to change. On the other hand, some program elements can be used to resolve this difference over time. The scale of the Vashon Groundwater program could be increased, or the PBRS incentives program and LMO cost-share program could increase their focus on the Island. Also, the underexpenditure will be considered when prioritizing capital projects, as it did in 2003.

The process for allocating the expenditure and revenue data is the following. The process for expenditure data was to separately allocate hundreds of individual line-item charges in the County's accounting system among the three regions with various quantitative methodologies. For instance expenditures for drainage complaints were allocated based on the distribution of

complaints among the three regions. Expenditures for stormwater facility maintenance were allocated based on the distribution of facilities among the three regions. The allocation of the revenue data is based on the expected revenue from each of the three regions, knowing the number of residential and commercial fee payers. The detail behind the allocation graph can be seen on page 37.

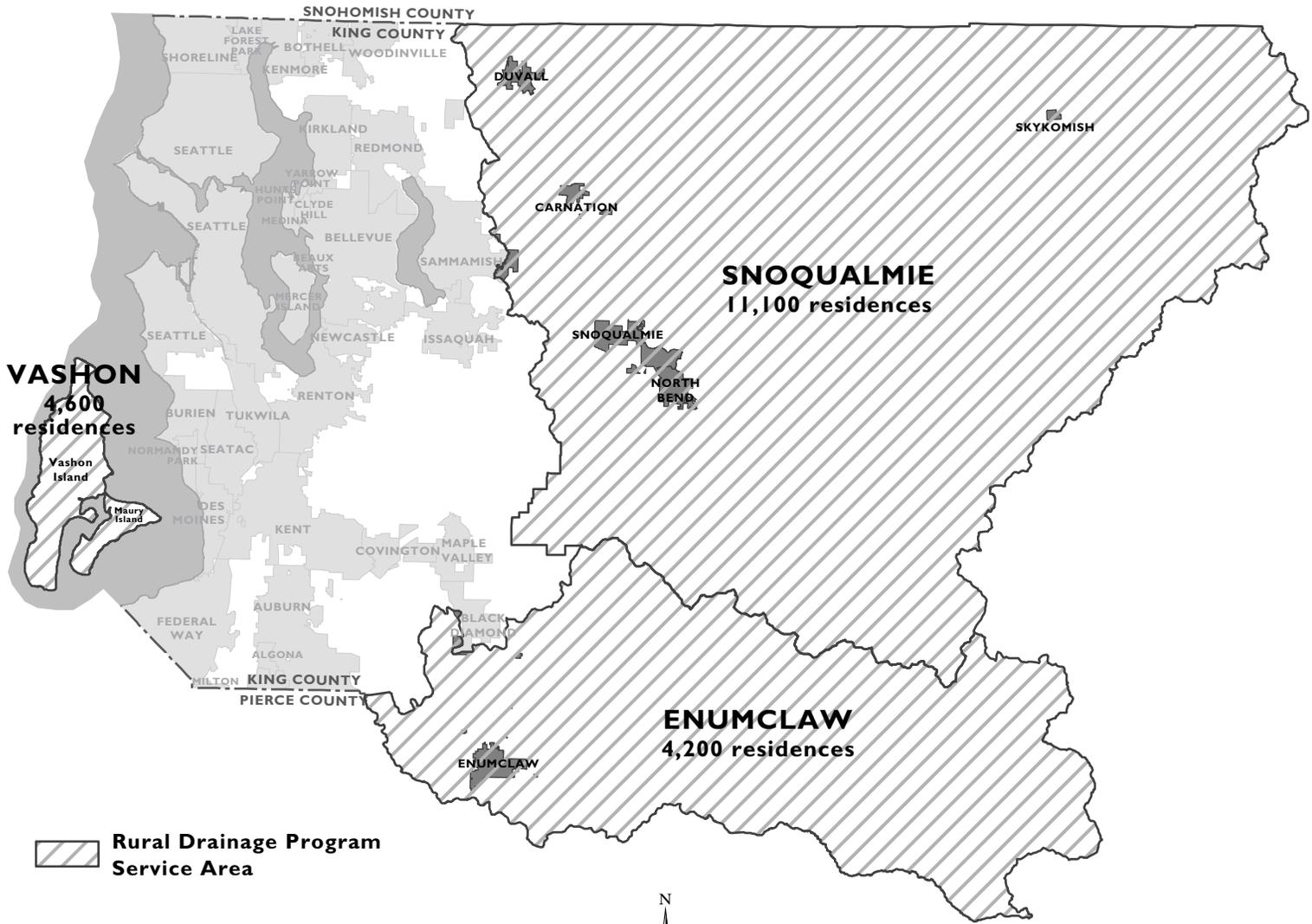
Customized Service – The Executive committed that the services provided to the rural communities would respond to their needs and be tailored for the different regions. In response the RDP has provided groundwater monitoring on Vashon Island and increased enforcement of environmental regulations for the Snoqualmie Valley. The program supports Enumclaw Plateau farmers in draining their fields through the Agricultural Drainage Assistance program (ADAP or “Fish and Ditch”) and helping Enumclaw Livestock owners comply with the Livestock Management Ordinance with the LMO cost-share program. While these services are not exclusive to these areas, they were initially proposed in response to requests from these communities. The different concentrations of services can be reviewed in the detail on expenditures by geographic area, shown on page 39.

Limits on Staff – During the fee adoption process, Council expressed a strong desire to limit the number of staff working on the program, instead encouraging a greater use of consultants. For the first two years the program has strictly adhered to this limit of 7.3 new FTEs and as well as 5.8 positions previously funded by the current expense fund, the river improvement fund, or the Arts and Natural Resources Initiative bond. However, the Council decision in 2002 to fund the farm and forest programs changed this significantly raising the total number of FTEs providing service under the Rural Drainage Program.

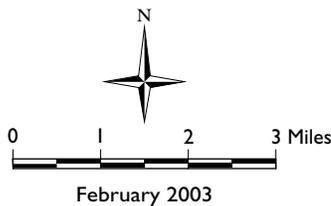
Maintain Rural Character – The Council also expressed concern that drainage solutions not lead to a constructed infrastructure that incrementally unravels the rural character and promotes development. To date all capital construction projects have made extensive use of the natural system and natural materials such as rock and woody debris, to shore banks and reroute drainage. Manufactured construction materials such as concrete, metal, or plastic pipe have been used only to make minor adjustments to the natural system, or in situations to replace existing manufactured materials, such as the Drainage District 13 emergency pipe replacement in 2001.

Efficient Service – The Water and Land Division’s strategy for delivering efficient service is to implement a series of performance measures. While this is a long-term project with significant work scheduled during 2003, the division is operating a significant performance measure system for the drainage and water quality complaint response activities. The results from this measurement system have led to significant process improvements to date, raising customer satisfaction.

RURAL DRAINAGE PROGRAM SERVICE AREA

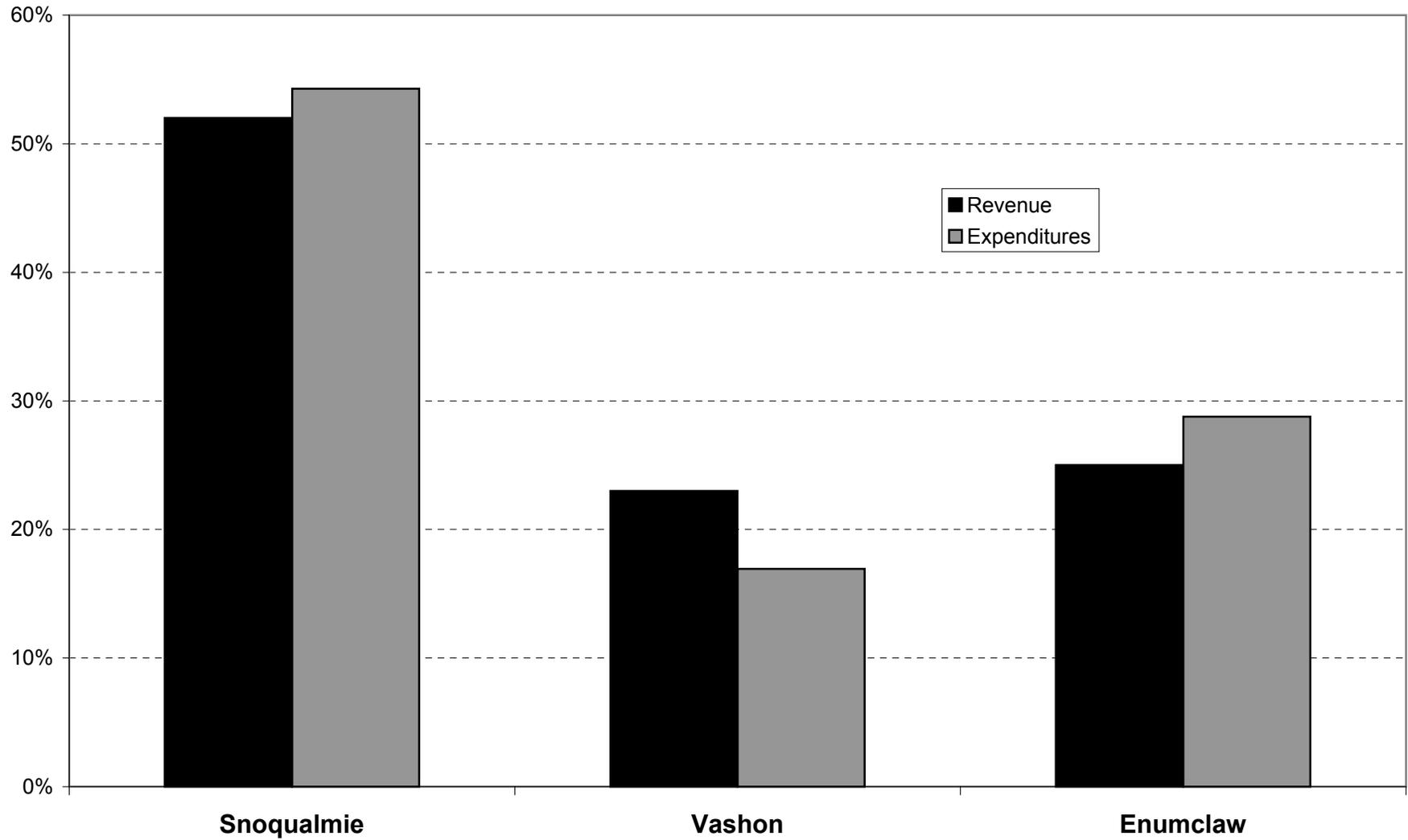


 **King County**
Department of
Natural Resources and Parks
Water and Land Resources Division



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Geographical Allocation of RDP Revenue and Expenditures 2000 - 2002



OPERATING PROGRAM ACCOMPLISHMENTS

The Rural Drainage Program provides numerous ongoing services to rural residents to resolve drainage complaints and protect the natural environment. These services include drainage and water quality complaint investigation, maintenance of stormwater control facilities, groundwater monitoring, programs to retain farms and forestland, and enforcement of clearing and grading violations.

The following paragraphs describes each of these services, providing a detailed accounting of accomplishments in each area.

DRAINAGE SERVICES

In 2002 the Stormwater group received 82 drainage complaints from rural citizens and businesses. Approximately two-thirds of these were resolved over the phone or referred to other County agencies for assistance. The remainder (29) underwent extensive review by stormwater engineers to analyze the problem, many of which were resolved with technical advice from the engineer. Six complaints identified violations of the County's drainage code and the appropriate enforcement action was taken. Another six complaints were forwarded for consideration as capital projects under the Neighborhood Drainage Assistance Program or the Drainage and Habitat Improvement Program.

Stormwater staff completed annual visits to 120 county-owned residential flow control facilities (stormwater ponds) to mow grass and make any corrections to improve the function of the facility. They also inspected 81 privately owned stormwater facilities serving rural businesses and multi-family residential buildings to ensure they were functioning to the appropriate standards.



The Rural Drainage Program provides for the annual inspection and maintenance of drainage facilities like this one located on SE 291st. This pond is only one of 12 residential retention/detention ponds on the Enumclaw Plateau.

The water quality program investigated 15 complaints in 2002. Valid complaints were resolved by instructing the property owner on ways to adjust their practices and comply with the King County water quality code. Nine complaints were considered significant enough to warrant a

water quality review by engineering staff. These usually concerned pesticide/herbicide applications and animal waste in streams, oily runoff, or use of oil to suppress dust. In addition, staff completed three water quality audits for rural businesses to catalogue all best management practices necessary for their business to comply with the water quality code.

ENVIRONMENTAL ENFORCEMENT

The Rural Drainage Program funds two inspectors and one support person at DDES to continue enforcement of the Clearing, Grading, and Sensitive Areas Ordinance in rural King County. During 2002, DDES inspectors have responded to 233 new clearing and grading complaints in eastern King County and Vashon Island. Many of these resulted in stop-work orders for permit violations. Some resulted in mitigation and compliance actions to replant cleared areas, restore damaged wetlands, or make other environmental repairs. Of the 233 new cases, 96 were closed, and a backlog of 117 older cases were closed or placed into a complied status.

The Rural Drainage Program also funds the 24-hour complaint line, so that violations can be reported after business hours and on weekends.

During 2002, the violations break down to:

Snoqualmie Valley

- 140 new cases were opened, 64 of which were closed during the calendar year
- 68 older cases were closed or placed into a complied status

Enumclaw Plateau

- 58 new cases were opened, 17 of which were closed during the calendar year
- 27 older cases were closed or placed into a complied status

Vashon Island

- 35 new cases were opened, 13 of which were closed during the same calendar year
- 22 older cases were closed or placed into a complied status

SNOQUALMIE BASIN STEWARD

The Snoqualmie Basin Steward responds to citizen inquiries concerning their watershed, coordinates efforts among diverse public agencies, facilitates watershed improvement projects, provides assistance to monitoring programs, and provides public education opportunities within the Snoqualmie basin.

- Received Salmon Recovery Funding Board grant of \$341,000 for acquisition/protection of 99 acres along the Snoqualmie River, downstream of Fall City
- Submitted 2 Conservation Futures grant applications, \$300,000 to match the Salmon Recovery Funding Board grant above and \$236,000 for acquisitions along Patterson Creek adjacent to the existing Patterson Creek Park Natural Area. The Citizen Oversight Committee recommended the Snoqualmie application for full funding and the Patterson Creek application for \$150,000.

- Submitted three Salmon Recovery Funding Board applications: for \$200,000 for removal of a levee and restoration of riparian habitat along the Raging River; for \$200,000 for design of a levee setback project along the lower Tolt River in partnership with the City of Seattle; and for \$25,000 for feasibility analysis and conceptual design work along the mainstem Snoqualmie River
- Conducted eight volunteer events to support and promote salmon recovery efforts in the Snoqualmie. The events took place at Chinook Bend, the Middle Fork Snoqualmie Park Natural Area and Griffin Creek Park Natural Area. We planted a total of 3,365 plants and controlled 4 acres of noxious weeds. Our actions improved conditions on 20 acres of floodplain and riparian habitat. 400 volunteers participated in the events.
- Purchased 28 acres of riparian habitat along the Tolt River and 9.7 acres along Griffin Creek. These acquisitions were funded by last year's Salmon Recovery Funding Board grants with match from the King Conservation District.
- Assisted in scoping and executing the Rural Reconnaissance assessment for Patterson Creek to identify priorities for capital projects and conservation actions.
- Worked with consultants to complete Lower Tolt River Floodplain Reconnection Feasibility Study.
- Maintained 3.5 acres of riparian restoration plantings along Lower Griffin Creek.
- Worked with citizens and the Small Habitat Restoration Program to initiate four restoration projects on private property.
- Coordinated applications for King Conservation District funding for three projects, Tolt River Acquisitions (an additional \$81,250 to complete acquisitions initiated with SRF and KCD funding from 2000), Small Habitat Restoration projects on private property in the Snoqualmie (\$25,000), Tributary 0383 restoration project on Patterson Creek (\$ 42,500).

SNOQUALMIE TECHNICAL ASSESSMENT

The Snoqualmie Technical Assessment provides scientific analysis and assessment of ecological conditions in the Snoqualmie River Valley, in support of the other programs and activities underway in this basin.

- Completed analysis of historic habitat conditions in Lower Snoqualmie River mainstem and valley floor
- Developed and managed Technical Assistance Agreement with University of Washington. (Project Report: Collins, Brian D. and Amir J. Sheikh. Mapping Historical Conditions in the Snoqualmie River Valley (RM 0 - RM 40). University of Washington, Department of Earth and Space Sciences, Seattle, WA. Report is available online at <http://dnr.metrokc.gov/wlr/waterres/streams/snoghist.htm>).
- Co-chaired WRIA 7 Habitat Subcommittee and led development of multi-species habitat conditions report that summarizes and evaluates habitat conditions in the 62 subbasins of WRIA 7 including the 25 subbasins of the Snoqualmie Watershed (Project Report: Snohomish River Basin Salmonid Recovery Technical Committee. 2002. Snohomish River Basin Salmonid Habitat Conditions Review. Snohomish County Department of Public Works, Surface Water Management Division, Everett, WA. Report is available online at [http://www.co.snohomish.wa.us/publicwk/swm/reports/snohoplan/Habitat Conditions Report/Habitat Conditions Report.htm](http://www.co.snohomish.wa.us/publicwk/swm/reports/snohoplan/Habitat%20Conditions%20Report/Habitat%20Conditions%20Report.htm)).

- Co-authored report that summarizes and interprets data collected in the field from 1999-2001 about habitat conditions for multiple species of salmonids and other aquatic biota in aquatic ecosystems of the Snoqualmie Watershed, including the mainstem Snoqualmie River and several of its tributaries (Solomon, Fran and Melissa Boles. 2002. Snoqualmie Watershed Aquatic Habitat Conditions Report: Summary of 1999-2001 Data. King County Department of Natural Resources and Parks, Water and Land Resources Division, Seattle, WA. Report is available online at http://dnr.metrokc.gov/wlr/waterres/streams/snoqualmie_cond_2001.htm).
- Contributed information to and reviewed drafts of report that summarizes factors that limit salmonid habitat and productivity in WRIA 7 (Haring, Donald. 2002. Salmonid Habitat Limiting Factors Analysis: Snohomish River Watershed Water Resource Inventory Area 7 Final Report. Washington State Conservation Commission, Lacey, WA.).
- Project manager of Technical Assistance Agreement with Tulalip Tribes to conduct qualitative assessment of habitat conditions in nine tributaries to Snoqualmie River and nine tributaries to those tributaries. The stream walks were conducted by Tulalip Tribes and King County staff.
- Continued to represent King County on WRIA 7 Technical Committee and participated in scoping the Ecological Analysis for Salmonid Conservation, which is intended to synthesize and analyze existing information to develop long-term multi-species strategy and provide solid technical foundation for development of WRIA 7 Salmonid Conservation Plan.
- Reviewed and ranked WRIA 7 Salmon Recovery Funding Board and WRIA 7 Centennial Clean Water Fund grant proposals.

ENUMCLAW BASIN STEWARD

The Enumclaw Basin Steward responds to citizen inquiries concerning their watershed, coordinates efforts among diverse public agencies, facilitates watershed improvement projects, provides assistance to monitoring programs, and provides public education opportunities within the upper Green River and White River basins that drain the Enumclaw Plateau.

- Received \$305,000 from the Salmon Recovery Funding Board to acquire 4 parcels near the mouth of Newaukum Creek and an additional \$795,000 to acquire over 100 acres along the Green River at Kanaskat. Property negotiations are underway for these properties and for additional property at Kanaskat funded by previous grants.
- Property negotiations are also underway for \$640,000 in SRF Board-funded acquisitions along Big Spring Creek. Acquired two of these properties, totaling 30 acres in December 2002.
- Awarded \$75,000 from a Conservation Futures Grant to acquire property in fee simple or conservation easements along Newaukum Creek close to Mahler Park and the City of Enumclaw. Property negotiations underway
- Completed a 50+ acre acquisition for the City of Enumclaw along Newaukum Creek between Big Spring Creek and Mahler Park. (the LDS property). This acquisition was funded through a Conservation Futures Grant proposed by the City. Property negotiations were conducted by the County. The property closed in December 2002.

- Secured \$170,000 of early action Endangered Species Act project money from King County Roads for acquisition projects along Newaukum Creek.
- Applied for \$450,000 from the Salmon Recovery Funding Board for acquisition of high priority habitat lands along Newaukum Creek
- Applied for \$926,000 from the Salmon Recovery Funding Board for Boise Creek stream restoration along the Enumclaw Golf Course. Initiated discussions with King County Parks, the City of Enumclaw, and golf course management about restoring this stream reach. Hired a golf course consultant to provide a feasibility analysis and cost estimates for modifying the course to accommodate the proposed restoration.
- Planted 300 large conifer trees along Boise Creek in the "out of play" areas of the golf course to improve salmon habitat. Several patches of Japanese Knotweed, an aggressive "weedy" species, were also controlled.
- Applied for \$880,000 from the Salmon Recovery Funding Board for additional property acquisition along the Green River at Kanaskat
- Coordinated restoration work with the U.S. Army Corps of Engineers for their Ecosystem Restoration Project along Newaukum and Big Spring Creek.
- Discussed restoration and acquisition projects with property owners along Newaukum and Boise Creeks to provide a pipeline of future projects.
- Assisted several property owners with drainage-related issues.
- Assisted in scoping and executing the Rural Reconnaissance assessment for Boise and/or Newaukum Creek to identify priorities for capital projects and conservation actions
- Conducted a PBRs workshop in the Enumclaw area last fall to educate property owners about opportunities for tax reduction through the PBRs conservation program

VASHON BASIN STEWARD

The Vashon Basin Steward responds to citizen inquiries concerning their watershed, coordinates efforts among diverse public agencies, facilitates watershed improvement projects, provides assistance to monitoring programs, and provides public education opportunities for Vashon-Maury Island.

- In an effort to protect up to a mile of nearshore habitat and marine riparian buffer, submitted two grant applications for funds to support permanent conservation. Was awarded \$250,000 from Conservation Futures grant program.
- Completed Rapid Shoreline Inventory analysis with People For Puget Sound, which trained volunteers in basic shoreline ecology, promoted stewardship and assessed current natural conditions. The analysis prioritized 3 areas for conservation actions and 3 areas for restoration actions along shoreline of the Maury Island Aquatic Reserve, which will help focus future efforts in this area.
- Revised, published and distributed the King County special edition of Puget Sound Shoreline Guidebook to marine residential property owners as a resource to help landowners understand nearshore ecology, methods to manage their land that best protects the resource, and references for places to go for more information or technical assistance.

- Conducted 2 PBRS workshops to help residential landowners conserve and protect both marine shoreline and streamside aquatic habitat permanently through tax incentive programs. 35 island residents attended these workshops, several requested follow-up consultation, and 4 property owners applied for PBRS benefits by year end.
- The Salmon Watcher Program was expanded to monitor 5 streams on Vashon island with 32 volunteers to help assess fish utilization of island streams.
- Assisted in scoping and initial execution of Rural Reconnaissance and Island-wide Assessment to characterize the health of the Island's stream resources and identify priorities for capital projects and conservation actions.
- In partnership with Island community organizations and King County Resource Lands programs, working to permanently protect 285 acres in the Judd Creek headwaters, and over 80 acres in other parts of the Island for their water quality, open space and wildlife habitat values.

VASHON GROUNDWATER PROTECTION

The Vashon Groundwater Protection Program seeks to monitor island's groundwater resources by monitoring and assessing the interactions between surface water and groundwater. In 2002 the program accomplished the following:

- The Vashon - Maury Island (VMI) Groundwater Protection Committee (GWPC) met 9 times (monthly except August, November, and December). COUNTY staff notified members of each meeting, attended, prepared notes, organized agenda items, and provided other support. Using COUNTY information, the GWPC chair prepared a news release that was published in the Beachcomber. We also analyzed issues of concern, including the former Nike Missile facility, the Tacoma Smelter Plume, and potential impacts from agricultural practices.
- COUNTY staff conducted two rounds of 2nd year ambient groundwater monitoring / sampling in 22 wells or springs on VMI. They discussed the purpose, monitoring efforts, and results of analysis to meetings of the GWPC, the Land Trust, and the VMI Purveyors' Group.
- We analyzed data from the ambient monitoring to date to determine if contaminants of concern are at, or near, levels of concern, and helped develop methods to institute "trigger level" warnings. In conjunction with GWPC members, THE COUNTY organized and carried out focused sampling in areas of elevated nitrate concentrations.
- Field staff sampled 11 domestic and public system wells near the former King County Vashon Landfill to assure the continuing safety of this facility.
- We obtained data from other governmental agencies and integrated it to interpret groundwater system on VMI. Data included well logs from all over the Island, locations of Underground Storage Tanks (USTs), mines, and potentially contaminated sites.
- At the same time as the sampling, plus during months between sampling rounds, DNPR field staff obtained water levels in 13 of the ambient groundwater monitoring wells.
- We received, compiled, and interpreted data from 26 volunteer water level measurement locations, and installed equipment in one of the volunteer wells to automatically collect data on a more frequent basis.

- County staff presented groundwater protection messages to large and small groups on VMI, including scout meetings and the Vashon Earth Fair and the Strawberry Festival.

RURAL LAKES STEWARDSHIP

The Rural Lake Stewardship program monitors the water quality of small lakes within the RDP service area in order to assess the real and potential impacts from development over time. We empower citizens to act as stewards of their lakes and watersheds through education, volunteer opportunities, and technical assistance. Our reports, recommendations, and management plans are based on the best available scientific information related to water quality and ecosystem integrity of the small lakes in western King County.

- Coordinated volunteer monitors for eight rural lakes: Alice, Ames, Horseshoe, Joy, Langlois, Marcel, Margaret, and Walsh. Trained a volunteer for Deep, but problems prevented sample collection.
- Trained volunteer monitors in April in techniques for collecting water samples and assessing water quality and quantity, in order to gather data for long term assessment by King County staff of environmental parameters.



A Lakes Stewardship volunteer collects data on Walsh Lake.

- Hosted a tour of the Renton Sewage Treatment Plant for volunteers as a thank you for work performed for the Lake Stewardship Program in November 2001 and a tour of the Issaquah Fish hatchery in November 2002.
- Conducted a workshop in June on 'Birds of King County Lakes' to sharpen the sensitivity of home owners to the habitat qualities of their properties and to educate them on the animals that inhabit lakes and nearby areas in the county.
- Conducted a workshop in early August for Lake Stewardship volunteers on classification of land use on eleven lakes in support of the King County effort to update the county's

shoreline management act in the next year. Three rural lakes volunteers participated, representing Ames, Langlois and Margaret.

- Provided technical assistance to more than 150 lakeside residents, agencies and companies dealing with a variety of questions concerning water quality, shoreline and habitat, as well as permitting and other issues.
- Published and mailed the quarterly Lakeside Steward Newsletter to lakeside residents in rural King County to provide technical information, education on environmental topics related to lakes, share monitoring results for the year, and promote lake stewardship.
- Completed a Small Lakes Recreation Guide for posting on the web and future limited distribution around the county to respond to multiple queries from the public on lake access and recreation regulations, as well as to encourage public appreciation and responsible use of the small lakes in the region.
- Analyzed water quality data, completed and mailed out both the 2000 and the 2001 Annual Volunteer Monitoring reports, which contain background information and data analysis from all lakes monitored jointly by King County staff and volunteers.
- Completed and received from the subcontractor the final version of the King County Regional Milfoil Management Plan, which includes surveys on 38 lakes county-wide for Eurasian watermilfoil. Six of these were rural lakes: Alice, Bass, Beaver (Green River drainage), Langlois, Marcel, and Walker.
- Completed an independent check on Eurasian milfoil in Bass Lake, based data contained on previous reports to the county.

FOREST CONSERVATION

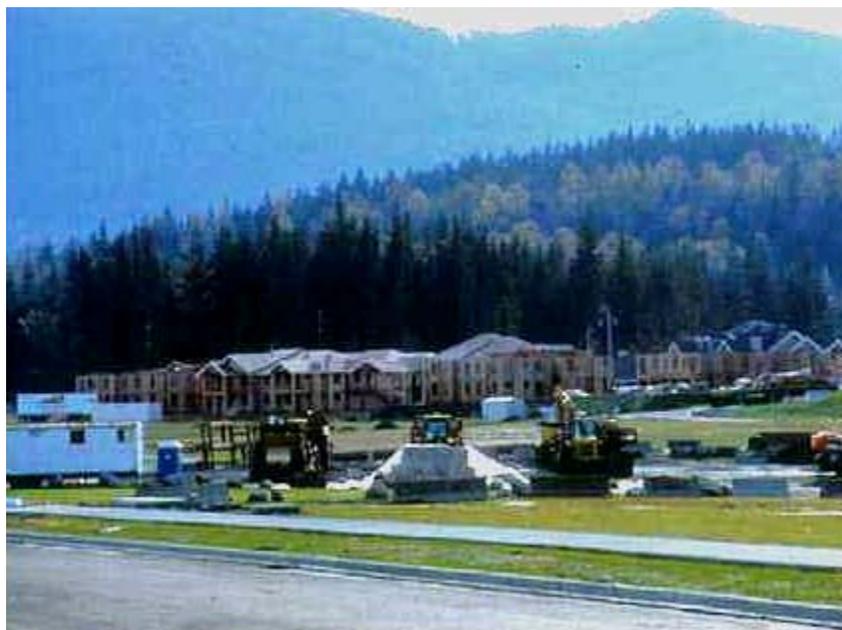
King County's Forestry Program focuses on the retention of forestland for its environmental, social, and economic benefits. The Forestry Program provides education, technical assistance, and economic incentives aimed at retaining the forest resources of King County.

Technical Assistance to Forest Landowners

- Assisted with teaching eight-week Forest Stewardship Classes on Vashon Island (19 students), and in Carnation (16 students) and Kent (18 students). All classes included forestry site visits to each parcel.
- Assisted an additional 27 landowners in WRIA 7 with forestry-related issues such as forest health, reforestation, forest practice permits, and conifer release. Seven of these landowners developed forest stewardship plans, resulting in an additional 600 acres covered by new forest stewardship plans.
- Assisted additional 11 landowners in WRIA 8 with forestry-related issues such as forest practice permits, planting of former pastureland, and thinning of forest stands. Four of these landowners developed forest stewardship plans, resulting in 162 acres covered by new forest-stewardship plans.
- Assisted an additional 23 landowners in WRIA 9 with forestry-related issues such as forest practice permits, planting of former pastureland, and thinning of forest stands.
- Assisted an additional 29 landowners on Vashon Island with forestry-related issues related to forest stand map preparations, reforestation, forest thinning, invasive weed control, and

forest health. 7 of these landowners developed forest stewardship plans, resulting in 70 acres covered by new forest stewardship plans.

- Assisted the Vashon Forest Stewards (forestry cooperative) in evaluating possibilities for a mill site, giving community forestry presentations, writing educational forestry articles, and providing technical assistance in harvest plans.
- Assisted five landowners in preparing required forest management plans for FPD building permits.



King County's Forestry Program focuses on the retention of forestland for its environmental, social, and economic benefits.

Other Rural Forestry efforts

- Held monthly meetings with the King County Rural Forest Commission, whose charge is to advise the County on efforts to conserve forests and forestry in the County.
- Developed color brochure explaining the values of forests, the threat of forestland conversion, and the County programs addressing the issue (printing expected 2/03).
- Presented forestry slide show to eight community groups to raise awareness of the value of forests and the loss of those values as forests are converted to development.
- Displayed information about forestry at King County Fair and Issaquah Salmon Days.
- Sent two Farm and Forest Newsletters to approximately 10,000 residents in the RDP area.
- Organized and held a workshop on "Working Together to Conserve and Manage Forests Effectively", attended by 110 participants, to develop new ideas and increase efficiency and effectiveness in addressing forestland management and the loss of forests in the region. Several continuing efforts have grown out of the workshop.
- Completed forest stewardship plans for 3 County-owned properties totaling 2400 acres.

- Completed air-photo analysis of large forested properties in Rural Forest Focus Areas and Forest Production District. Identified 75 priority properties that will be targets for educational outreach in 2003.
- Completed land cover analysis using new satellite imagery to determine current amount of forest cover and loss of forest cover over the last 5 years.

AGRICULTURE PROGRAM

The Agriculture Program brings together the County's previous efforts to preserve prime agricultural soils (The Farmlands Preservation Program) with recent efforts to make agriculture more environmentally friendly (the Livestock Management Ordinance) and programs to encourage the activity of agriculture (Puget Sound Fresh and FarmLink). The King County Agriculture Commission was established in 1995 to advise the King County Council and Executive on ways to enhance and promote commercial agriculture in King County. Currently the Commission is working to implement the Natural Resources Initiative "Farm and Forest Study" which identified various barriers to the continuance of local agriculture as well as strategies to overcome those barriers. The Agriculture Program's primary responsibility is to implement those strategies.

The Agriculture Program also supports many of the environmental mandates of WLRD. Farming in King County provides many environmental benefits such as providing flood storage in both the agricultural floodplains and farmed wetland complexes, reduction of non-point source pollution from agricultural practices, aquifer and groundwater recharge, scenic open space, wildlife refugia, as well as having a safe and local food supply for King County residents.

In 2002 the program accomplished the following.

- Provided information and technical support to the Executive and other County Programs on several regulatory issues pertaining to agriculture within the RDP areas. These issues include, but are not limited to, the new Critical Areas Ordinance, allowing dog kennels in Agricultural Production Districts (APDs), lot clustering in APDs and appropriate land uses in the Rural zone.
- Provided information to the County Council and their staff on the Agriculture Program, County-owned farmlands, and issues pertinent to agriculture in the RDP area.
- Provided technical assistance on pasture management, manure management and the Livestock Management Ordinance to over 70 individual landowners in the RDP area.
- Assisted property owners in the RDP area with the installation of Best Management Practices through the Cost-Sharing Program; eighteen property owners in the RDP area received a total of \$48,000 in 2002 for the installation of Best Management Practices on their property.
- Participated in the planning activities for a manure digester to process manure produced by dairies on the Enumclaw Plateau. Staff provided technical information on dairy operations and assisted in selecting a consulting team to perform an economic feasibility study on manure digestion.
- Assisted in planning 5 workshops for existing and new farmers within the RDP area on assessing their property for alternative crops.

- Provided “on the ground” technical assistance regarding appropriate horticultural farming practices to 20 new and existing farmers in the RDP area.
- Completed the Agricultural Production District Land Use Study which shows the amount of acreage devoted to various types of agriculture, as well as other land uses, in the APDs.
- Assisted five Farmland Preservation Program (FPP) property owners in the RDP area in performing boundary line adjustments while keeping their property in compliance with the FPP covenants.
- Worked with two FPP owners in the RDP area to obtain grading permits for farm roads.
- Worked with the King County Dept. of Transportation to ensure that the Tolt Bridge Replacement Project and the N.E. 124th /West Snoqualmie Valley Road Intersection Project will have minimal impact on adjacent farmlands.
- Served as staff to the King County Agriculture Commission and its committees; helped the Commission develop recommendations on land use and other issues pertinent to agriculture in the RDP area. These issues include amending the King County Code to allow dog kennels on agriculturally zoned land, allowing the creation of clustered lots within APDs and recommending standards for farm stands and farmers markets in the Agriculture and Rural zones.
- Helped organize and staff the Livestock and Rural landowner Information Booth at the King County Fair. The booth provided information and assistance to more than 2,000 fairgoers.
- Helped organize the first King County Small Farm Fair Expo at the Enumclaw fairgrounds. Over 500 rural landowners attended and received information on environmentally sound Best Management Practices.
- The Puget Sound Fresh Program continued to provide marketing assistance to producers in the RDP area.
- Continued to monitor preserved farmlands in the RDP area to ensure that the public’s investment in their preservation is upheld.

NATURAL RESOURCE LANDS PLANNING AND MANAGEMENT

The NRL Program was created in January 2002 to coordinate the policy, planning and management of approximately 60 ecological and working resource (forest and farm) sites, totaling almost 8,000 acres. These sites were formerly managed by King County Parks and now are under Water and Land Division management. The Rural SWM fee funds thirty-seven percent of these activities, the remainder is funded by the urban SWM fee.

Staff Activities

- Wrote draft Forest Stewardship Plans for four King County Forest Sites—Sugarloaf Mountain, Ringhill Forest, Mitchell Hill Forest and McCormick Forest. These plans provide forest inventory data, outline management goals and describe specific prescriptions for appropriate forest management activities.
- Completed draft King County Land Management Policy Plans for both the Agricultural and Forest Programs. These documents outline broad management direction for existing and future county-owned and managed working farm and forest sites, many of which lie within the RDP service area.

- Completed the draft King County Ecological Lands Handbook, a policy document that describes acquisition priorities and provides programmatic stewardship strategies for approximately 55 natural resource areas, many of which lie within the RDP.
- Conducted initial property inventories of approximately 15 new natural resource (ecological) sites within the RDP service area.
- Drafted site management guidelines for nine Ecological Land sites and one agricultural property within the RDP service area.
- Coordinated a violation resolution for an illegal timber harvest at Ringhill Forest. Hired surveyors and assisted foresters with a stump cruise and Forest Practices Permit for abatement and restoration.

Staff-Coordinated Volunteer Activities

- During 2002, 34 volunteer projects were completed on natural resources and parklands in the Rural Drainage Service Area. This involved over 750 volunteers who provided over 3,258 volunteer hours on restoration projects.
- In the Snoqualmie Basin, there were 11 projects at Tolt-McDonald Park along the Snoqualmie River to help restore a healthy riparian area of native trees and shrubs. Volunteers also worked on trails. Six volunteer events at Chinook Bend contributed to floodplain restoration along the Snoqualmie River. Another three tree and shrub plantings occurred, one at Griffin Creek and two at the Middle-Fork of the Snoqualmie River.
- In the Green River Basin, two bare root conifer tree planting events were held at Sugarloaf Mt during the winter to help restore the forestland. Two fall plantings occurred at Whitney Bridge Park to restore pastureland to forest along the Green River.
- On Vashon Island, a volunteer clean-up occurred on the Maury Island shoreline.
- Two Adopt-A-Park groups are active in the rural drainage service area. The Washington Fly Fishermen have adopted Griffin Creek. They held several weed removal work parties. Three Rivers Middle School has adopted Three Forks and has held four events to help remove noxious weeds at the site.

PUBLIC BENEFIT RATING SYSTEM (PBRS) PROGRAM AND TIMBERLAND PROGRAM

The Public Benefit Rating System (PBRS) and the Timber Land programs provide incentives to encourage private landowners to voluntarily conserve and protect land resources, open space and timber. In return for preserving resources, the land is assessed at a value consistent with its "current use" rather than the "highest and best use." The reduction in assessed land value is greater than 50% and as much as 90% for the portion of the land participating in the program. Over 650 landowners and 7500 acres are presently participating in these two programs, most of which are in the RDP service area.

In 2002 these programs accomplished the following:

- Presented PBRS, Timberland and other current use assessment information:
 - Forest Stewardship Class – 22 landowners attending.

- Two (2) Partners in Education (PIE) grant workshops held on Vashon Island – one targeted toward shoreline, one toward streamside – a total of 40 landowners attended.
- A third PIE grant workshops held in Carnation targeted toward streamside landowners along several creeks – 21 landowners attended
- A fourth of the five PIE grant series was held in Enumclaw targeted toward Newaukum Creek streamside landowners – 23 landowners attended. A fifth workshop is to be held during winter of 2003 (location to be determined).
- Reevaluated open space properties (property enrolled prior to the adoption of a pbrs program) with PBRS criteria. State law and county code require the revaluation of old open space taxation property with pbrs criteria if a county adopts such a program. There are 108 properties in King County participating in this old open space program.
 - Vashon Island – completed analysis and revaluation of 12 properties
 - Enumclaw area – began process and analysis of 10 properties
- Monitored twelve participating properties in the Snoqualmie RDP. Monitoring occurs to ensure compliance with recorded open space taxation agreement and to provide education to enrolled landowners.
- Responded to over 390 phone calls from landowners and others interested in the PBRS, timberland and other current use assessment or conservation programs. Also responded to approximately one-third as many email messages.
- Received 49 applications by the end of December 2002 (41 PBRS and 8 timberland). Of which, 14 are located on Vashon, 1 in Enumclaw RDP and 13 in Snoqualmie RDP. These applications will be processed in the first half of 2003.

ESA COMPLIANCE

In 2001, King County entered into agreements with local jurisdictions from throughout King County and portions of Snohomish County for the joint funding, development, and review of salmon conservation plans. This effort is in response to the listing of chinook salmon under the federal Endangered Species Act.

The planning effort constitutes four significant steps, which ultimately result in a salmon conservation plan for each watershed. The four steps are 1) the Reconnaissance Assessment which identified what we know now; 2) the Near Term Action Agendas which provided identified steps we can take in the next 3 to 5 years while the conservation plan is completed; 3) the Strategic Assessment identifying what we need to learn and 4) the Comprehensive Conservation Plan which will outline what we can do in the future. We are currently involved in the Strategic Assessment stage.

The tailored approach being undertaken will provide a “customized, watershed-based biological and ecological assessments that will serve as the science-based foundation for early- and interim action identification”. In other words, each WRIA will have developed a conservation plan that is specific to its situation and needs.

CAPTIAL PROGRAM ACCOMPLISHMENTS

The rural drainage capital program remained productive in 2002. In the first three years of the program, the council appropriated \$3.6 million in rural surface water management fees for capital projects and programs. In addition, \$1.0 was leveraged from outside sources such as state and federal grants. By the end of 2002 the cumulative expenditure rate for the rural fee revenue was approximately 60%, with a cumulative expenditure rate of 50% for total revenue.

The rural drainage capital program is organized under several smaller programs, all arranged within three of the Water and Land Division's core business lines. These are 1) the Stormwater capital program, which is primarily responsible for resolving drainage and small-scale flooding problems; 2) the Stewardship capital program, primarily concerned with conservation of natural resources, and 3) the Rural and Resource Programs capital program, which provides drainage and environmental protection support for the agricultural community.

There were two important highlights in the 2002. The first was the relocation of a stretch of Tuck Creek, which will end continual flooding of the adjacent farmland as well as improve fish passage. The second was the transformation of the Agricultural Drainage Assistance Program (ADAP) from a series of pilot projects to a full-fledged program. The details of each of these and the rest of the capital projects and programs are given below.

STORMWATER CAPITAL PROGRAMS

Large Capital Projects

Tuck Creek Phase II

Scope: Reduce flooding from creek

Location: Snoqualmie Valley, Tuck Creek

Construction Status: Completed

Discussion: The objective of this project was to relieve perpetual flooding of the fields adjacent to Tuck Creek in the Snoqualmie Valley. For years, continual sediment deposit and bank shoring raised the creek bed several feet above the valley floor. The creek was in danger of leaving the existing channel during a large storm, causing widespread flooding and stranding fish. The project constructed a raised field road parallel to the existing channel, then created a new channel between the road and the raised banks of the old channel. This method allowed County staff to avoid some permitting requirements normally associated with altering a stream channel.

Drainage District 13 Pipe Replacement

Scope: Replace collapsing pipe under Enumclaw-Franklin Road SE and SR 169

Location: Enumclaw Plateau, Bass Lake Basin

Construction Status: Completed

Discussion: A large pipe was collapsing under private property near the intersection of State Route 169 and Enumclaw Franklin Road SE that drains the farmland adjacent to 11 homes. Installed by the local drainage district in 1921, the pipe was made of unreinforced concrete and has outlived its expected life by 30 years. If the pipe were to fully collapse, the resulting backwater would flood several homes, 600 acres of prime farmland, and overtop SR 169 cutting off lifeline access for area residents. Construction of a new pipe will be completed in September 2001. Project closeout activities continued into the first quarter of 2002.



By creating a new channel between the two roads, project staff eliminated the perpetual flooding of surrounding farm land by Tuck Creek.

Wilderness Rim Division 2 Flood Improvements

Scope: Improve effectiveness of infiltration pond

Location: Snoqualmie Valley, North Bend

Construction Status: Completed

Discussion: Wilderness Rim is a subdivision of several homes built around an enclosed depression outside North Bend. During heavy rains the depression fills, flooding adjacent homes. The proposed solution enlarged the depression to increase the groundwater infiltration rate and eliminate the flooding. Construction was completed in early 2002. Project staff will monitor the infiltration rate for another year to determine if further modifications are necessary.

Shamrock Park

Scope: Reduce flooding from Ribary Creek

Rural Area: Snoqualmie

Location: Snoqualmie Valley, North Bend, Ribary Creek

Construction Schedule: Not yet determined

Discussion: The objective of this project is to reduce flooding from Ribary Creek to the Shamrock Park subdivision outside North Bend. The original proposal was to cost-share with the Washington Department of Transportation in their construction of an additional culvert under State Route 202. The State has since backed away from this proposal, despite Councilmember intervention, leaving the County to pursue alternative solutions. While no progress was made with WSDOT in 2002, staff are currently pursuing a project solution that would be completely funded by King County.

Drainage and Habitat Improvement Program

DHI is a general-purpose program that designs and constructs drainage structures and/or installs habitat features to improve surface water drainage and/or sensitive habitat. Such projects include elimination of localized flooding, erosion and sediment control, improving fish passage and habitat, and bank stabilization. These projects are typically planned and constructed within a two-year timeframe.

Another service DHI provides is Technical Assistance to the public. Funding is set aside to provide engineering, environmental and/or permit guidance and assistance to the public. The program also offers the public technical professional opinions and provides referrals to other sources more suitable to the public's needs.

(Note: This program is jointly funded by the Stewardship Capital Program, due to the conservation aspects of many of these projects (i.e. the "habitat" portion of "Drainage and Habitat Improvement.")

Newaukum Creek Bank Stabilization

Location: Enumclaw Plateau, Newaukum Creek

Scope/Objective: Stabilize an eroding stream bank

Overview: The objective of the project was to stabilize a severely eroded 80-foot section of the left bank of Newaukum Creek on the Enumclaw Plateau that posed a threat to a nearby drinking water well. Installation of large woody debris and re-planting of a 200-ft strip of native riparian vegetation stabilized the bank. The project required a grading permit that included monitoring commitments. While the project was constructed in 2001, the monitoring activities occurred throughout 2002. Additional monitoring work will be required in 2004.

Carnation Marsh

Location: W Snoqualmie River Rd (Carnation)

Scope/Objective: Alleviate roadway flooding while maintaining water levels necessary to maintain the wetland.

Overview: This was a collaboration effort between two departments, WLRD and Roads Maintenance. The objective was to alleviate roadway flooding caused by the existence of beaver dams. The dams restricted flow and caused water to backup and rise to such an extent that it overtopped the road during the summer months. Flexible pipes with mesh wire at the openings were installed in the dams in such a manner to ensure flow continued unimpeded. In addition, a conveyance system with multiple inlets was installed along the roadway to prevent further flooding. The project was constructed in 2002 and required a grading permit that included monitoring commitments.

The project has been observed during storm events of the 2002-03 wet season and is performing to reduce roadway flooding frequency and increase public safety.

Monitoring: Required the project to determine whether any fish were stranded as a result of the work performed. The first monitoring assessment will be in 2003.

Komar

Location: SE 291st St (Ravensdale)

Scope/Objective: Alleviate water overtopping driveway.

Overview: The objective of the project was to replace an undersized culvert (12-inch) located in an unmaintained KC ROW that periodically washed out an adjacent private driveway downstream. The project was constructed in 2002.

Kellogg

Location: 111th Ave SW (Vashon)

Scope/Objective: Alleviate private flooding

Overview: The objective of the project was to alleviate flooding on private property by improving an existing conveyance system. A feasibility study was conducted and a design was completed.

Construction Schedule: 2003

Deer Creek

Location: Carnation-Duvall Rd NE

Scope/Objective: Enhance fish habitat and improve hydraulic capacity while meeting real property responsibilities.

Overview: This project will entail removing culverts located under the existing WSDOT bridge that limit fish passage upstream and reduce sediment transport. A feasibility study was completed in 2002. The design and permitting are 70% completed.

Construction Schedule: 2003

Wells Nursery

Location: SE Issaquah Fall City Rd (Fall City)

Scope/Objective: Alleviate private property and roadway flooding.

Overview: The project proposes to alleviate private property and roadway flooding by improving an existing drainage system. A feasibility study was conducted and the design is 80% completed.

Construction Schedule: 2003

Wallace Creek AKA Novelty Hill Creek Culvert Replacement

Location: W Snoqualmie River Rd

Scope/Objective: Improve fish passage

Overview: The project proposed to replace a culvert to remove a fish passage barrier. A feasibility study was completed and deemed outside the program's boundaries. The project was turned over to Roads Maintenance for design and construction.

Monte Lindsley Dam AKA Duthie Hill Culvert

Location: Duthie Hill Rd

Scope/Objective: Reduce the potential risk of water overtopping the roadway

Overview: The project proposed installing an additional culvert near an existing road culvert to reduce the risk of roadway overtopping by providing additional conveyance capacity. A feasibility study was completed and indicated a risk of water overtopping the roadway due to the possible failure of a private dam upstream. A design was completed and forwarded to Roads Maintenance for construction request.

Red Creek

Location: SE Mud Mountain Rd (Enumclaw)

Scope/Objective: Decommission an abandoned Army COE concrete dam to improve stream morphology and improve public safety.

Overview: The project proposed conducting a feasibility study to identify alternatives to decommission the dam and recommend an option. A preliminary investigation was completed. The project was deemed as a viable project under CPOSA Rapid Response/Opportunity

Program due to the potential collaboration with ACOE. A detailed feasibility study will be completed in 2003 in an attempt to secure outside funding for the project.

Feasibility Study Schedule: 2003

Construction Schedule: Unknown

Enumclaw Golf Course

Location: Enumclaw Golf Course

Scope/Objective: Enhance fish and riparian habitat

Overview: The project proposed to identify mitigation measures to address the habitat problems associated with a Chinook salmon tributary of Boise Creek. The site was evaluated for its restoration potential. A feasibility study was completed and recommended moving the adjacent fairways to another location and establishing a vegetation buffer. As a result of the proposed recommendation, a SRFB grant application was prepared in 2002 for a large channel relocation/restoration project on the golf course. DHI prepared a conceptual design and cost estimate for the application and provided significant technical support to the Watershed Unit throughout the SRFB process. DHI also coordinated the work of a golf course architect who provided information of the effects of the proposed channel realignment on the flexibility of the course. In addition, DHI assisted with a conifer-underplanting project around Boise Creek on the golf course. The project is expected to be further developed in a large CIP Program subject to grant approval.

Herb Farm

Location: Herb Farm on Issaquah Fall City Rd (Fall City)

Scope/Objective: Alleviate private property flooding

Overview: The project proposed to identify alternatives and recommend the preferred option for design and construction of a system to alleviate the flooding problems. Several alternatives were identified and the optimum solution was chosen and pursued in 2002. However, scope of the project was much larger than a typical DHI project so it was converted to a CIP in 2003. Preliminary analysis included hydrological analysis and negotiations with DDES and landowners. This project is assigned to the large CIP Program for 2003-2004 implementation.

Rural Facility Retrofit Program

Description: This program modifies existing regional storm and county-owned residential retention/detention ponds or bioswales to improve their performance in order to prevent flooding and degradation of natural habitat, or to protect water quality, public health and safety, and public property. In 2002, three bioswale facilities were regraded to restore the appropriate flow rate and then reseeded with grass.

Rural Neighborhood Drainage Assistance Program (NDAP)

Description: The Rural Neighborhood Drainage Assistance Program helps private landowners solve drainage problems impacting three or more parcels, for which no other County program is available. Projects range anywhere from a few thousand dollars to over \$100,000, although most projects are between \$5,000 and \$30,000. In 2002 the program accomplished the following:



Water from upstream properties made this erosion problem worse. NDAP is working to redirect the water and stop the erosion.

SW GORSUCH ROAD

Staff paved and repaved a portion of pavement on Vashon Island to change the slope and keep water from flowing over the roadway

SOISTER

The individual sections of concrete culvert on an access road had become displaced and causing not draining properly. The resulting backwater was in danger of covering the road creating a significant public safety hazard. Staff resolved the problem by replacing the culvert.

KONECNY FARM DR IMP

The Konecny farm is a large horse rearing ranch that has flooding during the wet season. The site has had additional flows from clearing in the upper basin, and the existing plastic pipe system is both undersized and failing. The project upgraded the existing system in 2001, with only minor maintenance expenditures occurring in 2002.

LAKE JOY DR IMP

Increased development in the basin has caused an overland flow to flood onto three properties. These properties experience chronic flooding as well as the county road. The project included a 12" culvert that drained a road ditch which previously had no outlet. The 12" pipe drained across the road and across private property, then outlet just outside the 200' boundary of the ordinary high water mark of Lake Joy.

MANZANITA BEACH

The project will reduce minor flooding by increasing an existing private 2" drain on Vashon Island that connects to a 12" road culvert. King County will provide design and permitting and also install the portion of work in the road right-of-way and down the steep slope adjacent to the right of way. The property owner will install the remainder of the pipe and the catch basins.

VASHON HTS DRAINAGE IMPROVEMENTS.

The inlet to the 12" is plugged with gravel and the outlet has not been located; It is believed to have been graded over. The stormwater now bypasses the pipe inlet and floods a house, access and drainfield. The project replaced the existing 12" pipe with a new 12" pipe that outlets to the road ditch and regraded the washed out road and improve the road drainage along the road.

WATTS DITCH EXTENSION

Program staff dug a ditch from the roadside ditch to a low area so water would overflow into the low area before overflowing into watts' yard.

BIGGS Quick Fix

Staff installed a catch basin to connect a private drainage system to a culvert under the road to eliminate minor flooding.

POP NDA

Staff are attempting to resolve a significant flooding problem near the upper Green River. The problem is complicated by parcels with unknown ownership and no clear drainage path to the river that would not result in significant bank erosion. Staff are currently evaluating alternatives.

EMSKY NDA

A beaver dam at the outlet of Lake Alice was backing up water and causing significant flooding. Staff used a “beaver deceiver” device that causes the beavers to abandon the dam believing it is unreparably damaged.

Rural Drainage Engineering Studies Program

Description: This program provides analytical support for solving localized flooding and other surface water problems for which a project has not yet been identified. The studies completed in 2002 are the following:

SMALL SITES II

This study was done to determine the effectiveness of the Small Sites Drainage BMPs that are in the Surface Water Design Manual. These BMPs are the typical surface water drainage controls used in the RDP for single family residential and small commercial developments. The study found that the BMPs were not being properly implemented, but this did not appear to be causing flooding or erosion problems. The study should result in improvement of the compliance with the standards.

OLD/OFF FACILITIES

This study reviewed our files to find and evaluate existing drainage facilities in the RDP that we not completed to KC specifications by the developers and therefore not accepted by KC for maintenance. Very few such facilities were found. The study determined that those facilities are not functioning and are not worth reconstructing.

WELCOME RETENTION/DETENTION

This study evaluated the effectiveness of some very old facilities that were constructed in roadside ditches. The study determined that there was virtually no benefit from maintaining these facilities as they were designed and that they would be far more cost-effective if maintained as ordinary roadside ditches.

WATER QUAL-FACILITIES

This study was a survey of the types and condition of water quality facilities that are owned by King County in the RDP. The survey found about 35 biofiltration swales and one wet pond. Most of the facilities were found to be in acceptable condition. A few facilities were identified as needing maintenance or retrofitting.

OUTFALL STUDY

This study is intended to evaluate the outfall designs for drainage facilities that are primarily found in the RDP. A limited amount of work has been done on this study. Some good designs have been identified.

VASHON STORMWATER STUDY

This study evaluated the drainage infrastructure in the town of Vashon, looked at stormwater impacts on stream resources, and considered the interaction between surface water runoff and inflow and infiltration in the sewer system.

RURAL AND RESOURCE PROGRAMS CAPITAL PROGRAMS

Agricultural Drainage Assistance Program

Description:

The Agricultural Drainage Assistance Program (ADAP or Fish & Ditch) provides technical and financial support, through the Rural Drainage Program, to farmers attempting to maintain agricultural waterways. To prevent further loss in farmland, this program provides assistance in obtaining the necessary permits, cost share funding for best management practices, and pre and post project fish monitoring.

In 2002, with the assistance of ADAP, four agricultural ditches within the Enumclaw APD were maintained. The projects include:

- A maintenance cleaning of 900 feet of field ditch and a culvert replacement under a farm road was completed. Maintenance of the ditch improved drainage on approximately 19 acres of agricultural lands.
- A 1000-foot maintenance project for a field ditch occurred in Enumclaw. Maintenance of this ditch improved drainage on approximately 12 acres of agricultural lands. Additionally, this project will also reduce flooding problems on 212th Avenue SE.
- A 1100-foot ditch along side a farm road in Enumclaw was cleared. Maintenance of this ditch improved drainage on approximately 9 acres of agricultural fields.
- The King County Road Department maintained a 600-foot stretch of roadside ditch in Enumclaw. The project will reduce flooding problems on SE 440th Street. ADAP staff was involved in the project since it was adjacent to farmland. Maintenance of this ditch improved drainage on approximately 9 acres of agricultural fields.

ADAP was also involved in many outreach efforts to educate the public about the program and regulations associated with agricultural ditch maintenance. Through these efforts there are now over 40 agricultural landowners requesting assistance from ADAP. The following is a list of those outreach activities:

- Two ditch maintenance training sessions were conducted in the summer of 2002.
- A training video about ditch maintenance best management practices was produced and is available to landowners.
- The program responded to close to 500 technical information requests from the public, government agencies, and non-profit groups.
- Nine public presentations on ADAP were done at fairs and public meetings in 2002.

- Four council members and the Executive's office received ADAP briefings.
- Three articles about ADAP appeared in the Office of Rural and Resource Program's "Farm and Forest Newsletter" and the King Conservation District newsletter.
- Three flyers about ADAP or related issues were created.
- A web site describing ADAP's activities and monitoring report can be found at the following address: (<http://dnr.metrokc.gov/wlr/waterres/fnd/index.htm>).

In 2002, King County signed two technical services agreements. In April, King County signed an agreement with Washington State University to research how using best management practices while maintaining ditches affects salmonids and water quality. There are close to 20 landowners involved in this five-year research project from four of the agricultural production districts. Additionally, a technical services agreement with the King Conservation District was signed to provide assistance with developing the permit application materials.

Livestock Management Ordinance (LMO) Cost Share

The Agriculture Programs Cost Share Program provides grants that help farmers and Livestock owners implement best management practices (BMPs) in order to come into compliance with the Livestock Management Ordinance and ESA mandates. The grants are used to defray part of the cost of completing the required BMPs. The result is improved water quality in rural areas.

In 2002 the following projects were completed.



The LMO Cost-Share program encourages citizen compliance with the County's environmental laws, decreasing non-point source pollution in local streams.

- NE 138th Street, Snoqualmie Valley, constructed waste storage structure
- 268th Avenue SE, Enumclaw Plateau, constructed waste storage structure and installed heavy use area protection

- SE Green Valley Road, Enumclaw Plateau, constructed waste storage structure
- SE Fall City-Snoqualmie Valley Road, Snoqualmie Valley, constructed waste storage structure and installed heavy use area protection
- Vashon Highway SW, Vashon, installed heavy use area protection and created clean water diversion
- NE 102nd Street, Snoqualmie Valley, constructed waste storage structure, installed roof runoff management and heavy use area protection
- SE 208th Street, Enumclaw Plateau, purchased and installed waste management equipment
- 281st Place SE, Snoqualmie Valley, installed heavy use area protection and created clean water diversion
- 282nd Avenue SE, Enumclaw Plateau, installed cross fencing and purchased pasture seed
- SW 156th Street, Vashon, installed heavy use area protection and rented machinery
- 107th Avenue SW, Vashon, installed roof runoff management and cross fencing
- West Snoqualmie River Road NE, Snoqualmie Valley, purchased and installed waste management equipment
- SE 416th Street, Enumclaw Plateau, purchased and installed waste management equipment
- Westside Highway SW, Vashon, constructed waste storage structure
- SE Green Valley Road, Enumclaw Plateau, installed roof runoff management and heavy use area protection
- 228th Avenue SE, Enumclaw Plateau, purchased and installed waste management equipment

STEWARDSHIP CAPITAL PROGRAMS

Rural Small Habitat Restoration Program

Description: This award-winning program completes small-scale habitat restoration projects along stream corridors and wetlands. These may include stabilizing eroding streambanks, installing livestock fencing, and planting native vegetation. Individual project costs typically range from \$5,000 to \$15,000. Projects are constructed on private or public property as long as they provide benefit to the public at large.

2002 Rural Construction Projects:

- Chinook Bend (KC ownership) - Restored riparian forest structure and function using commercial techniques for hybrid poplar cultivation. *Ongoing.*
- O'Hanley (Private ownership) - Restoring fish and wildlife habitat on 153 acres of private property. This project site includes Harris Creek, numerous Class 1 wetlands, and the Snoqualmie River. *Ongoing.*

- Neal Road (KC ownership) - Restoring fish and wildlife habitat on property acquired by King County using early action salmon recovery funds. This 39.5-acre site contains Class 1 wetlands and 2000 lineal feet of Snoqualmie River streambank. *Ongoing.*
- Whitney Bridge Park (KC ownership) - Continue multi-year effort to control invasive vegetation and plant conifers at Whitney Bridge Park, in collaboration with King County Parks. *Ongoing.*
- Freisner (Private ownership) – Restored native vegetation within a 150-foot wide buffer on Boise Creek.
- Grand Canyon of the Vashon (Private Property) - Stabilized a rapidly eroding ravine that is a source of sediment to salmon-bearing Shinglemill Creek, downstream. The project used hand labor to construct terraces and willow fascines to establish vegetation on very steep, sandy hillsides.
- Point Robinson Park (KC Property, Vashon Parks District and US Coast Guard): In 2001 a Restoration Plan was developed for this Vashon Parks district waterfront park. The goal of this project is to stabilize eroding coastal bluffs and banks, and to reestablish a forested coastal plant community of native conifers. Planting occurred in early 2002.
- Patterson Creek Tributary 0383 (KC and Private ownership): This project was awarded a \$61,300 matching grant from the National Fish and Wildlife Foundation to fund a stream corridor restoration plan on this tributary to Patterson Creek. This project affects approximately 50,000 square feet (1.14 acres) of streamside buffer and 1,000 lineal feet of a Class 2 salmon-bearing (coho) tributary to Patterson Creek.

2002 Technical Assistance Projects

- Wick Property Restoration Plan (Private property): Developed and wrote a restoration plan for streamside property owners.
- Cherry Creek Tree Farm (Private property): Advised property owners on riparian management and flood hazard reduction.
- Alberg (Private property): Worked with Stewardship Partners to develop a restoration plan for property owner on Snoqualmie River.
- Rose/Ketchum (Private Property): Advised property owner on reed canary grass control with shade and buffer plantings.

2002 Planning and Design

- Hansen (Private property): This project will fence and establish approximately 4.8 acres of streamside buffer to stabilize streambank erosion, manage LWD, and control livestock access. The project will affect 2,090 lineal feet of Patterson Creek, a Class 2 salmon-bearing stream 37,005 square feet (0.84 acres) of Class 1 and 2 wetland. Construction is pending property owner approval.
- Striker (Private property): Plant buffer of Indian Creek with willow and cottonwood, exclude beaver, voles and deer with fencing. Shade reed canary grass. Work will begin in January, 2003.
- Lampkin (Private property): Fence buffer to exclude livestock and plant natives. Pending property owner approval.

- Anderson (Private and KC ownership): Retrofit a past SHRP project (Novack, 2001) to permit fish and flows to pass beaver dam. Also assist neighboring property owner with beaver dam related flooding problems. To be constructed in Summer, 2003.
- Snider (Private property): Improve buffer to class 2 wetland by cutting and covering blackberry and planting natives. Start work in January, 2003.
- Gallagher (Private property): Backwater culvert and weir to provide fish passage, fence and plant stream. Construction scheduled for Summer, 2003.
- Cunningham (Private property): Enhance 1 acre of riparian habitat with conifer underplanting. Installation scheduled for early 2003.
- Three Forks Restoration Plan (KC ownership): Develop a Restoration Plan for a large parcel on the Snoqualmie River owned by KC Parks. Scheduled for completion in January, 2003.
- Pruet (Private property): Fence and plant stream buffer to reduce channel downcutting and livestock impacts. Pending property owner approval.
- Drechsel (Private property): Restore fish passage to good quality spawning and headwater wetland rearing habitat by replacing a failing culvert. Scheduled for Summer, 2003.

2002 Rural Monitoring and Maintenance

- Novack Fish Passage Project
- Pt. Robinson
- Bucholtz/Wendell

Community Partnership Grants Program

Description: This program provides small grants to neighborhood groups to solve drainage, water quality, and habitat problems. The program is being publicized through press releases in community newspapers, targeted mailings to community service groups, and through the World Wide Web.

To date, the following grants have been awarded:

2001 Awards

- **Friends Of The Trail** \$19,645 for the Middle Fork Snoqualmie River Drainage Clean-Ups. In an ongoing effort to thwart the problem of illegal dumping in rural public areas along the river. Activities will include clean-ups, preventive measures and public education. Recipient match: \$33,505 PROJECT IS COMPLETED



One example of the trash removed from the Snoqualmie River with funding from the Rural Community Partnership Grant Program.

- **Mid-Sound Fisheries Enhancement Group** \$20,000 for the Ernaga and Savitsky Culverts. This project will replace two culverts with larger, concrete culverts and enhance 200 feet of stream channel. It will improve water quality and restore habitat diversity for all fish, but will greatly improve suitable spawning and rearing conditions for coho salmon. Match: \$79,245 PROJECT IS COMPLETED
- **Snoqualmie Indian Tribe** Snoqualmie Conservation Corps. The tribe is establishing and training a Snoqualmie Conservation Corps to restore salmonid stream habitat on private and public lands in the Snoqualmie Watershed. Projects will be selected in a manner beneficial to Snoqualmie Watershed Forum priorities. The Corps will also work in conjunction with King County DNR's Small Habitat Restoration Project team. Approximately 10 to 20 youth will work a total of between 960 and 1920 hours on these projects. Match \$13,750 PROJECT HAS BEEN EXTENDED THROUGH 2003.

2002 Direct Awards

- **City of Snoqualmie:** \$35,000 for the Kimball Creek Water Quality Monitoring and Water Quality Improvement Plan. Kimball Creek which flows through farmland and residential areas before it reaches the Snoqualmie, has degraded water quality. The City of Snoqualmie is developing and implementing a water quality monitoring and improvement plan to address these water quality problems. Mount Si High School and University of Washington students are participating in water quality planning, research, sampling, testing and analysis as a part of their class work. Other groups involved in community education and stream restoration include the Meadowbrook Farm Preservation Association and the Snoqualmie Rotary Club. . This project leverages \$26,000 with cash and in-kind match
- **Friends of the Trail:** \$18,015 for the Middle Fork Snoqualmie River Drainage Cleanups. In continuation of an effort to minimize the problem of illegal dumping and littering in rural areas of Washington State, Friends of the Trail fosters greater protection of the

Snoqualmie by organizing cleanups and carrying out education and public awareness/outreach activities. Clean-ups are conducted by volunteers and court-adjudicated youths. This project leverages \$60,045 with cash and in-kind match

2002 Awards co-funded with the National Fish and Wildlife Foundation.

(Half of each of the following awards is provided by the federal government.)

- **Mid-Puget Sound Fisheries Enhancement Group:** \$45,000 for the Newaukum Creek Salmon Restoration Partnership. Eight restoration projects along Newaukum Creek, a tributary of the Green River, will result in 3000 ft. of stream enhancement, including buffers extended to 25 ft and 55 large woody debris structures installed. In addition, 15 to 20 tons of fish carcasses have been distributed as a migration-inducing olfactant and to enhance stream primary productivity. Mid Sound has engaged 170 community members in the restoration and monitoring of these projects. The recipient has matched this award with \$11,250 in-kind and cash
- **Stewardship Partners:** \$38,525 for the Oxbow Farm Riparian Restoration Project. This riparian restoration project at an organic farm near Duvall will consist of re-vegetating a quarter mile section of the Snoqualmie River through a series of plowing, disking and cover crop plantings. The goal of this approach is to use a cash cover crop to out-compete reed canary grass and other invasive species. Native trees and shrubs will be planted by volunteers and paid labor. A Washington Conservation Corps crew will perform maintenance as-needed during the growing season. After the second growing season, the farm manager will take on the responsibility of maintaining the plantings. The recipient has matched this award with \$17,525 in-kind and cash.

East King County Groundwater Program

Description: This program monitors selected wells in East King County for changes in groundwater level and quality, as called for in the East King County Groundwater Management Plan. The objective is to establish a long-term database to (1) understand how surface water practices effect groundwater, and (2) provide data for the King County Benchmarks pertaining to groundwater. (Note: starting in 2003 this program has been transferred from the capital program to the operating program, for consistency with the Vashon Groundwater Program.)

2002 accomplishments include

- The EKC Groundwater Protection Committee (GWPC) was named by County Council and met twice (October and November) in 2002. Program staff provided support including notifying members and arranging meetings, taking notes of the meetings, and supplying materials and agenda items.
- Program field staff conducted 2 rounds of 2nd year of ambient monitoring / sampling round in 15 wells. Also measured water levels in 11 of these wells.
- Program staff advertised and started organizing a water level monitoring group of volunteer well owner citizens in EKC, similar to a one on Vashon.

- Technical staff gave a short presentation of results of monitoring efforts to a GWPC meeting.
- GW Education staff presented groundwater protection messages at the Alpine Days, and “Kids Day America” events, both in North Bend, and provided requested written materials to citizens in area.
- Staff prepared the 2001 Annual Report for the entire KC GW Protection Program, including issues / efforts in RDP areas, provided it to all the GWPC members, and made it available to the world via the Internet.

2002 RURAL CIP RECONNAISSANCE

The objective of the Rural Drainage Program CIP Reconnaissance is to identify and prioritize capital project needs throughout the new 1,400 square mile rural service area of Eastern King County and Vashon/Maury Island. This project will provide a comprehensive 6-year Capital Improvement Program to resolve problems caused by stormwater runoff in the new service area. Work has focused on: (1) developing a prioritized list of capital projects for consideration in 2004, and (2) understanding the capital needs across the new service area for funding in subsequent years.

An early phase of the reconnaissance effort, completed in 2001, identified approximately 15 potential early action CIP projects. The consultant conducted feasibility analyses on nine of these projects, many of which are now being implemented under the WLR CIP program.

In 2002, a consultant team led by Tetra Tech, Inc. was hired to conduct rural landscape assessments and capital project reconnaissance for three areas: Patterson Creek Basin, Boise Creek Basin, and Vashon and Maury Island. The King County Council in 2002 allocated additional funds to the rural reconnaissance project, allowing the project to increase the work order scopes for the three identified areas. The scope was increased to include hydrology modeling and a more detailed stream habitat analysis for all three basins, and to allow for an island-wide assessment of Vashon Island, as opposed to just two basins on Vashon. The result of this expanded effort will be a more complete understanding of the habitat conditions and surface water CIP needs within these areas.

It is anticipated that the rural area CIP reconnaissance work started in 2002 will be completed by June 2003. Similar to earlier rural area reconnaissance the County will have a number of candidate projects to consider for 2004 funding. The following information will be developed for the most promising potential projects:

- Site and project sketch, including key infrastructure and water features and conceptual design approach.
- Problem name
- Problem type (e.g., Flooding, Habitat, Water Quality)
- Brief problem description
- Relative problem significance based on criteria provided by the County
- Brief description of conceptual solution/ CIP

- Relative size/ scale of conceptual CIP based on budgetary thresholds to be provided by the County
- Brief description of any unique technical or regulatory issues associated with the conceptual proposal

These projects will be evaluated for their urgency, effectiveness, feasibility, and community benefit. Once the projects are ranked, a final screening will occur to ensure geographic equity for the overall RDP program. This list of projects will be rolled into the proposed 6-year CIP list for the rural area beginning in the 2004 budget process.

Similar reconnaissance efforts are needed in other rural area basins. Depending on availability of future budget this systematic CIP reconnaissance approach can be applied throughout the remaining rural areas. This next phase can be initiated in 2003 for completion in 2004 with high priority capital projects from this phase to be integrated into the 6-year CIP program during the 2005 budget process.

2003 Operating Budget

Stormwater

Residential Stormwater Facilities Maintenance	\$105,080
Commercial Stormwater Facility Inspections	\$33,843
Drainage Enforcements	\$18,091
WQ Compliance	\$51,367
Environmental Enforcement (DDES)	\$460,502
Drainage Complaint Response	\$122,458
Engineering Studies	\$24,136
Stormwater Admin	\$18,363

Stewardship

Enumclaw Steward	\$116,091
Snoqualmie Steward	\$103,226
Vashon Steward	\$115,608
Watershed Analysis	\$58,012
Basin Steward Admin	\$101,845
Lake Stewardship	\$100,476
Snoqualmie Assesment	\$74,484
Vashon Ground Water	\$134,089
East KC Ground Water	\$156,845
Contribution to Regional ESA Planning	\$150,000

Rural & Resource Programs

Rural & Resource Programs Admin	\$89,294
Forest Preservation	\$188,315
Natural Lands Management	\$389,800
Forestry/Ag Incentive Program	\$35,394
Agriculture Preservation	\$138,215

Capital Transfer

Transfer to Capital Budget	\$1,777,139
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Admin and Overhead

Rural Program Coordinator	\$46,825
King County Overhead Costs	\$70,881

Total	\$4,680,379
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Grand Total	\$4,680,379
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2003 Capital Budget

Project Description		Budget	Notes
Stormwater			
0F1795	Tuck Creek Flooding Phase II	\$12,595	Phase II completed
0A1796	Neighborhood Drainage Assistance	\$54,607	Combined with NDAP QF 0A1808
0B1060	Herb Farm Drainage Improvements	\$270,000	
0B1795	Wilderness Rim II	\$17,233	Project completed; \$ for post project monitoring
0E1795	Shinglemill Restoration Phase II	\$6,672	Project completed; \$ to be reappropriated.
0G1795	Shamrock Park Flooding	\$75,000	
0A1799	Drainage and Habitat Improvement Program	\$400,903	
0A1803	Emergency and Rapid Response	\$160,487	
0A1808	Stormwater Facility Retrofits	\$4,051	
0A1809	Engineering Studies	\$9,016	Program moved to operating budget; Capital \$ to be reappropriated
0F1797	Impervious Surface Reduction Grants	\$100,000	
Stewardship			
0A1061	Patterson Creek Trib 383 Restoration	\$101,391	
0A1800	ESA Grant Match Contingency	\$1,431,875	Contains \$190K in SWM fee revenue. The remainder is advance appropriation authority for grants.
0A1798	Small Habitat Restoration Program	\$332,183	Contains \$115K in SWM fee revenue. The remainder is from external grants.
0A1802	Rural CIP Reconnaissance	\$309,990	
0A1806	Rural Partnership Grants	\$159,600	
0B1797	East King County Groundwater	\$115,808	Program moved to operating budget; Capital \$ to be reappropriated
0D1797	Watershed Habitat Feasibility Study	\$150,000	
Rural & Resource Program			
0A1791	Natural Lands Management CIP	\$40,000	
0A1800	Livestock Management Ordinance Cost Share	\$225,590	
0A1801	Agricultural Drainage Assistance Program	\$683,411	
Total		\$4,660,412	

Geographic Allocation of Expenditures

Operating

	2000			2001			2002			Total		
	Snoqualmie	Vashon	Enumclaw	Snoqualmie	Vashon	Enumclaw	Snoqualmie	Vashon	Enumclaw	Snoqualmie	Vashon	Enumclaw
1 Complaint Investigation	\$41,835	\$11,714	\$30,121	\$35,583	\$10,543	\$19,769	\$32,481	\$15,909	\$17,897	\$109,899	\$38,166	\$67,787
2 Residential Facility Maintenance	\$38,389	\$1,745	\$3,490	\$128,286	\$5,831	\$11,662	\$154,596	\$7,027	\$14,046	\$321,271	\$14,603	\$29,199
3 Commercial Facility Inspection	\$10,744	\$8,953	\$2,686	\$800	\$666	\$200	\$10,131	\$8,442	\$2,533	\$21,675	\$18,062	\$5,419
4 Engineering Studies	\$79	\$35	\$38	\$0	\$0	\$0	\$0	\$0	\$0	\$79	\$35	\$38
5 WQ Compliance	\$7,642	\$1,124	\$12,060	\$8,643	\$2,123	\$4,397	\$14,228	\$8,982	\$14,188	\$30,513	\$12,229	\$30,645
6 Environmental Enforcement	\$160,705	\$30,132	\$60,264	\$79,940	\$29,978	\$223,167	\$226,772	\$56,719	\$94,497	\$467,418	\$116,829	\$377,929
7 Agriculture	\$0	\$0	\$0	\$87,044	\$0	\$29,015	\$106,288	\$21,618	\$52,243	\$193,332	\$21,618	\$81,258
8 Ag Drainage Support	\$90,070	\$0	\$30,023	\$26,998	\$0	\$17,999	\$0	\$0	\$0	\$117,068	\$0	\$48,022
9 Rural Forest Retention	\$0	\$0	\$0	\$49,000	\$0	\$0	\$163,258	\$75,537	\$4,873	\$212,258	\$75,537	\$25,873
10 Natural Lands Mgmt	\$0	\$0	\$0	\$0	\$0	\$0	\$48,261	\$2,161	\$21,610	\$48,261	\$2,161	\$21,610
11 PBRS	\$0	\$0	\$0	\$0	\$0	\$0	\$16,481	\$28,347	\$21,096	\$16,481	\$28,347	\$21,096
12 Snoqualmie Steward	\$10,656	\$0	\$0	\$128,595	\$0	\$0	\$117,922	\$0	\$0	\$257,172	\$0	\$0
13 Vashon Steward	\$0	\$44	\$0	\$0	\$54,290	\$0	\$0	\$117,321	\$0	\$0	\$171,655	\$0
14 Enumclaw Steward	\$0	\$0	\$7,474	\$0	\$0	\$43,754	\$0	\$0	\$142,986	\$0	\$0	\$194,215
15 Lakes Stewardship	\$21,086	\$0	\$18,699	\$29,772	\$0	\$26,401	\$36,070	\$0	\$31,987	\$86,928	\$0	\$77,087
16 Vashon Groundwater	\$0	\$28,265	\$0	\$0	\$123,158	\$0	\$0	\$101,464	\$0	\$0	\$252,887	\$0
17 East King County Groundwater	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
18 Snoqualmie Tech Support	\$0	\$0	\$0	\$49,932	\$0	\$0	\$62,226	\$0	\$0	\$112,158	\$0	\$0
19 CIP Recon Support	\$6,729	\$2,976	\$3,235	\$102,021	\$45,125	\$49,049	\$3,965	\$1,754	\$1,906	\$112,715	\$49,855	\$54,190
20 Rural Coordinator	\$38,462	\$17,012	\$18,491	\$38,462	\$17,012	\$18,491	\$44,627	\$19,739	\$21,455	\$121,551	\$53,763	\$58,438
21 Overhead *	\$130,206	\$57,591	\$62,599	\$73,006	\$32,291	\$35,099	\$39,432	\$18,177	\$20,165	\$242,643	\$108,059	\$117,863
22 Misc. Technical Support *	\$2,989	\$1,322	\$1,437	\$11,005	\$4,867	\$5,291	\$23,577	\$10,428	\$11,335	\$37,570	\$16,618	\$18,063
23 ESA Compliance *	\$0	\$0	\$0	\$0	\$0	\$0	\$78,000	\$34,500	\$37,500	\$78,000	\$34,500	\$37,500
24 Administration *	\$0	\$0	\$0	\$830	\$367	\$399	\$30,890	\$21,227	\$21,864	\$31,719	\$21,594	\$22,263
Total	\$559,592	\$160,913	\$250,618	\$849,916	\$326,252	\$505,692	\$1,209,204	\$549,353	\$532,183	\$2,618,712	\$1,036,518	\$1,288,493
	58%	17%	26%	51%	19%	30%	53%	24%	23%	\$4,943,722	21%	
			\$971,123			\$1,681,859			\$2,290,740			

Capital

	2000			2001			2002			Total		
	Snoqualmie	Vashon	Enumclaw	Snoqualmie	Vashon	Enumclaw	Snoqualmie	Vashon	Enumclaw	Snoqualmie	Vashon	Enumclaw
1 Wilderness Rim	\$32,387	\$0	\$0	\$33,404	\$0	\$0	\$118,977	\$0	\$0	\$184,768	\$0	\$0
2 Shinglemill Phase II	\$0	\$0	\$0	\$0	\$53,790	\$0	\$0	\$4,538	\$0	\$0	\$58,328	\$0
3 Tuck Creek Phase II	\$407	\$0	\$0	\$72,499	\$0	\$0	\$214,502	\$0	\$0	\$287,407	\$0	\$0
4 Neighborhood Drainage Assistance	\$3,195	\$450	\$23,542	\$7,194	\$368	\$138,697	\$67,591	\$18,321	\$64,576	\$77,979	\$19,139	\$226,816
5 East KC Groundwater	\$4,938	\$0	\$0	\$58,953	\$1,048	\$1,139	\$42,672	\$0	\$0	\$106,562	\$1,048	\$1,139
6 Small Habitat Restoration Program	\$19,347	\$3,650	\$10,124	\$117,239	\$11,447	\$19,060	\$51,226	\$17,848	(\$9,957)	\$187,812	\$32,945	\$19,226
7 Drainage & Habitat Improvements	\$22,271	\$35,908	\$30,897	\$24,899	\$9,659	\$54,986	\$140,001	\$11,932	\$33,693	\$187,172	\$57,499	\$119,576
8 LMO Cost Share	\$0	\$0	\$0	\$7,963	\$0	\$24,095	\$9,721	\$11,448	\$25,182	\$17,685	\$11,448	\$49,277
9 Agricultural Drainage Assistance	\$141,990	\$0	\$0	\$88,640	\$0	\$48,927	\$109,403	\$0	\$64,662	\$340,033	\$0	\$113,589
10 CIP Reconnaissance	\$40,157	\$17,762	\$19,306	\$51,632	\$22,837	\$24,823	\$36,549	\$35,474	\$35,474	\$128,338	\$76,073	\$79,603
11 Rural Partnership Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$5,208	\$92	\$20,100	\$5,208	\$92	\$20,100
12 Facility Retrofit	\$0	\$0	\$0	\$2,495	\$81	\$89	\$2,134	\$73	\$79	\$4,628	\$154	\$168
13 Engineering Studies	\$0	\$0	\$0	\$8,410	\$2,552	\$2,774	\$7,154	\$12,504	\$3,021	\$15,564	\$15,056	\$5,795
14 Drainage District 13 Repair	\$0	\$0	\$0	\$0	\$0	\$297,091	\$0	\$0	\$3,203	\$0	\$0	\$300,294
15 Emergency / Rapid Response	\$0	\$0	\$0	\$0	\$0	\$0	\$33,386	\$0	\$0	\$33,386	\$0	\$0
16 Impervious Surface Reduction Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$264,691	\$57,769	\$83,869	\$473,327	\$101,783	\$611,681	\$838,523	\$112,231	\$240,034	\$1,576,542	\$271,783	\$935,584

