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FY 2008 Local Government Stormwater Grants Program

Summary of Funding Outcomes

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Introduction

The 2007 Washington State Legislature passed the Operating Budget for the 2007-2009 Biennium with funds to assist local governments with stormwater management needs. This document provides a summary of the funding provided and the stormwater management outcomes achieved.

In the budget, the Legislature appropriated $9 Million for local governments to receive grants for municipal stormwater programs, including but not limited to:

- Implementation of Phase II municipal stormwater National Pollutant Discharge Elimination System (NPDES) permits.
- Stormwater source control for toxics in association with clean-up of contaminated sediment sites.
- Stormwater source control programs for shellfish protection districts where stormwater is a significant contributor.

The Legislature and the Department of Ecology (Ecology) referred to this new program as the Local Government Stormwater Grants Program. The Legislature allocated funds geographically as follows:

- Projects within the Puget Sound Basin: $7 million.
- Projects outside the Puget Sound Basin: $2 million.

Ecology defined local governments to be offered grants as Phase I and Phase II municipal stormwater permittees or shellfish protection districts. Designated Local Governments received offers of up to $75,000 and were encouraged to form partnerships to address issues of common concern and economies of scale. There were no match requirements.

After setting aside funding for program and project administration, Ecology ultimately entered into grant agreements with more than 100 Designated Local Governments, obligating $6,825,000 to projects in the Puget Sound basin and $1,800,000 outside of the Puget Sound Basin.

Examples of eligible activities included but were not limited to:

- Conducting inventories of stormwater sources.
- Establishing and refining stormwater utilities (including stable rate structures, developing stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).
- Reviewing existing and model stormwater regulations.
- Mapping or geographic information systems of stormwater system infrastructure.
- Implementing source control activities, such as drain stenciling, business inspections, and public information and communication.

- Identifying and removing illicit stormwater discharges into municipal separate storm sewer systems.
- Completing detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.
- Purchasing equipment for conducting stormwater monitoring.
- Evaluating stormwater quality.
- Other activities consistent with legislative provisos for this program or local and regional stormwater management programs or permit compliance, which can be completed within the June 30, 2009, deadline.

The remainder of this document contains brief summaries of the grant-funded activities accomplished by each of the funding recipients. Of the $8,625,000 provided, $8,189,000 was used to meet key stormwater management needs statewide, with unused funds returned to the state. Unused funds are more a reflection of issues with the recipient's readiness to proceed in the timeframe provided rather than a reflection of the need to make stormwater management improvements. Stormwater management is a critical problem impacting Washington's water quality, and an evolving issue in terms of how best to manage and implement solutions.

The table in the appendix illustrates how each of the grant recipients used its funds relative to this list of eligible stormwater management activities.

Grant Recipient Funding Outcome Summaries

Algona

Because of staffing changes at the city, it was unable to make much progress on Phase II permit requirements. Staff did complete a first draft of a Stormwater Management Plan and ordinance, conduct some education/outreach activities, and initiate good housekeeping training and discussions among city staff.

City of Anacortes

The City of Anacortes used its grant funds to support a variety of activities required by the permit:

- Public education and outreach. Among other activities, the City conducted a survey to assess the level of residents' understanding of stormwater issues, developed a website, and worked with the Skagit Conservation District to develop educational and volunteer programs.
- Illicit discharge detection and elimination (IDDE). The City established a stormwater hotline, verified mapping of stormwater facilities, and inspected 25 percent of its stormwater outfalls.
- Controlling runoff from development and construction sites. Anacortes staff developed checklists for site plan reviews, drafted revisions to City Code to comply with the Ecology *Stormwater Management Manual for Western Washington*, and provided Erosion and Sediment Control Lead Certification training to staff.
- Pollution prevention and good housekeeping for municipal operations. The most visible accomplishment under this permit requirement was the design and construction of improvements to the City's maintenance yard to remove vehicle washwater from storm system and re-route water from a de-watering station to the sanitary sewer.

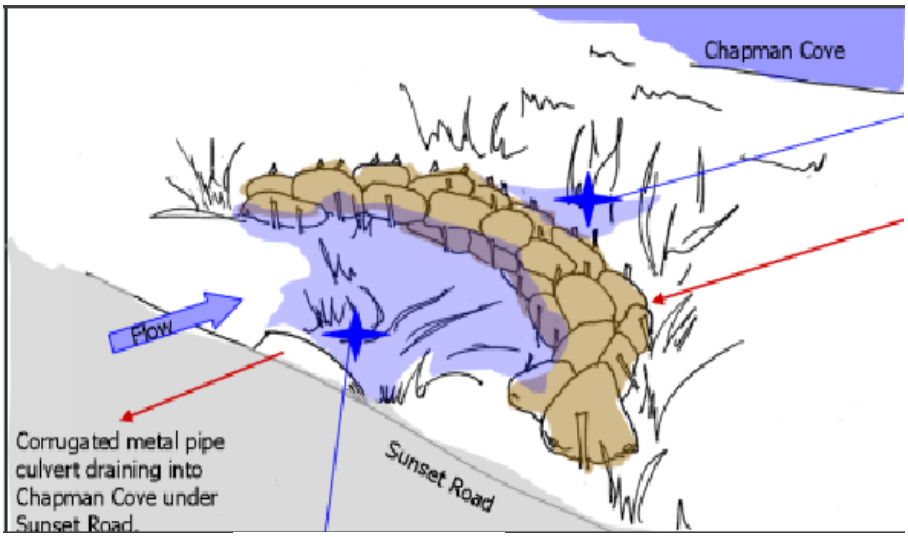
Port of Anacortes

The Port prepared a working draft of a stormwater management program. Part of that process included inventorying and mapping of all port stormwater facilities. In addition, the Port acquired catch basin markers (to be installed after the close of the grant), provided Construction Site Erosion and Sediment Control Lead training to four staff members, and prepared training on permit requirements and best management practices for its staff.

Annas Bay and Oakland Bay SPDs

The District partnered with Mason Conservation District (CD) to conduct the outreach/training activities. The CD held two stormwater-related workshops that focused on rain gardens and low impact development.

The District prepared a Quality Assurance Project Plan (QAPP) for the water quality monitoring of five mycoremediation sites (three in the Annas Bay drainage and two in the Oakland Bay drainage) during the sampling period.



Results of the water quality sampling above and below the mycofiltration installations were inconclusive; that is, there was no clear water quality benefit from the baffles.

Arlington

The City of Arlington used its grant funds to begin a stormwater sampling and flow monitoring program. In addition, the City contracted with consultants to prepare a Stormwater Comprehensive Plan and to map the stormwater system and drainage basins. The plan identified:

- The storm drainage basins within the City.
- The condition and needs of the existing stormwater infrastructure.
- The revenue requirements for the fledgling stormwater utility to meet both its operational and long-term capital improvement requirements.

Asotin County (includes the Cities of Asotin and Clarkston)

Asotin County, the City of Clarkston, and the City of Asotin have severely limited resources to accomplish implementation of the Phase II permit requirements. Using these grant funds, the

group hired a Regional Stormwater Program Coordinator and developed a Regional Stormwater Program to share costs. More specifically, the partnership completed:

- Stormwater source mapping.
- Stormwater ordinances.
- Operation and maintenance plans.
- A public education and outreach program.
- Planning for stormwater management financing.

Auburn

The City of Auburn used its grant funds to:

- Assess legal requirements for the NPDES permit.
- Prepare a draft and final Stormwater Management Program.
- Prepare a Compliance Strategy Report.
- Inventory and map storm system information and incorporate the information into the City's hydraulic model.
- Prepare Illicit Discharge Detection and Elimination (IDDE) code revisions.
- Create standard operating procedures for IDDE, Spill Response, Public Education and Public Involvement.
- Develop and implement a cost tracking program for the NPDES program.

The City also made substantial progress toward inventorying and mapping its storm system facilities.

Bainbridge Island

The City of Bainbridge Island used its grant funds to support a full-time staff person to work on the City's Stormwater Program. During the grant period, the City was able to:

- Create a GIS integrated field collection application for mapping the stormwater facilities and tracking inspections.
- Develop procedures for IDDE and a database to manage illicit discharge investigations.
- Complete contracts for emergency spill response.
- Complete a baseline public survey to gauge behaviors affecting water quality.

Bellevue

The City of Bellevue used its grant funds to contract with a consultant to develop standard operating procedures (SOPs) for:

- Illicit discharge reporting, response and enforcement.
- Catch basin, pipe, culvert and ditch inspection, maintenance, and cleaning.
- Disposal of cleaning wastes and vegetation.
- Review existing SOPS for consistency with the Phase II permit.
- Develop illicit discharge awareness, response and enforcement level training materials.

Because the City had additional grant funds, it requested approval from Ecology to use the remaining funds to cover a substantial part of the cost of constructing covers over treated sand piles at the Bellevue Utilities satellite yard. The covers will improve the water quality of the stormwater discharged from the facility.

City of Bellingham

The City of Bellingham proposed to use its grant funds to purchase water quality monitoring equipment. The City purchased:

- Two instruments for in situ monitoring. The City acquired probes for dissolved oxygen, turbidity, and pH, as well as a microcomputer based device that allows the user to display monitoring instrument readings and transfer data to computers for analysis and plotting.
- Four samplers and accessories, including digital cell phone modems for transmitting data and overflow alerts to stormwater staff.

The City plans to use the equipment for general stormwater monitoring and to assist with compliance with Lake Whatcom and Silver Beach Creek TMDLs.

Port of Bellingham

The Port of Bellingham used its grant funds to make substantial progress toward meeting the requirements of the Phase II permit. The Port:

- Adopted a Stormwater Management Program Plan.
- Adopted an Illicit Discharge Detection and Elimination (IDDE) policy and enforcement plan.
- Purchased GIS software, trained staff in the use of that software, and mapped stormwater utilities on Port property.
- Labeled storm drains.

Black Diamond

The City of Black Diamond was out of compliance in the early phases of the NPDES permit. The City used the grant funds to engage a consultant to help bring them into compliance.

As a first step, the City hired an engineering firm to complete the NPDES Phase II Annual Report. The consultant then educated the City Council on the permit requirements and the need to establish a Stormwater Utility. The Council adopted a stormwater Utility Fund in June 2008 and contracted with a consultant to perform a rate study, establish stormwater utility rates and ordinances, and begin preparing a stormwater comprehensive plan. The stormwater utility billing began in January 2009.

The City's consultant also completed mapping the entire stormwater system and flow paths within the City.

With the stormwater utility now in place, the City is continuing its efforts to establish a stormwater management program using utility funds.

Bonney Lake

When the City of Bonney Lake designated an area as the future downtown district, it became apparent that the stormwater treatment and control for the area was non-existent or obsolete. The City identified the management of stormwater as necessary for future development in that area. Using its Local Government Stormwater grant funds,

- The City completed a study of the downtown area's storm drainage characteristics. The study included current quality treatment and control and directional pathways of the stormwater. Using the results of the study, the City was able to identify a location for the stormwater facility that will provide treatment and control.
- The City completed a downtown stormwater plan for treatment and handling of all stormwater runoff in the downtown area. The plan identifies a regional facility (see plan above) that will treat the runoff from the downtown area prior to ground infiltration. Ground infiltration will occur at a location where part of the natural drainage for the downtown area already occurs.
- The City completed the design of the regional stormwater facility and started construction of the facility in October of 2008. (See photo.) Construction of the facility was completed in the spring of 2009.

Bothell

A gap analysis conducted for the City of Bothell identified the stormwater management areas lacking staff support. These primarily included: Stormwater Facility Inspection Program, TMDL sampling of North Creek, and drainage request inspections. The City used its Local Government Stormwater grant to fund the first year's cost of a new position that would fill in these gaps.

The City hired a Water Quality Inspector in April of 2008. The assigned responsibilities included:

- Reviewing and updating the City's stormwater facility files. (Completed file review and updates for 56-regional facilities and 74-commercial facilities.)
- Inspecting regional (City owned or maintained) and commercial (privately owned or maintained) stormwater facilities. (Inspected 56 regional and 22 commercial facilities.)
- Responding to drainage requests. (Responded to 52 drainage incidents.)
- Providing spill response support. (Responded to 11 spills.)
- TMDL sampling of North Creek. (Conducted monthly sampling from three sites.)

Bremerton

The City of Bremerton used its grant funds to purchase sophisticated Global Positioning Satellite (GPS) equipment and update its storm sewer system maps by field verifying 70 to 75 percent of the system. The City also participated in a joint local government effort to address the NPDES Phase II permit requirements for assessing public knowledge of stormwater issues and developing educational efforts. In coordination with other local NPDES permit holders, the City created the "Kitsap Peninsula Clean Runoff Collaborative." This collaborative updated an older customer education survey, and focus groups were used to develop effective outreach messages and methods the City could use to gauge effectiveness of stormwater outreach. The City updated stormwater outreach materials to use for general outreach, public presentations, city employee education, and business inspections.

Brier

At the beginning of the grant period, the City of Brier did not have a formal stormwater management program that met the requirements of the NPDES permit. It was complying with some of the requirements, but it needed to document those activities, as well as fill in the gaps in the permit requirements. By the end of the grant period the City had:

- Developed the City's Stormwater Management Program.
- Updated the City's stormwater system mapping, and develop a database for tracking maintenance and inspections for both existing storm system components and construction of stormwater systems associated with developments.
- Developed code language for enforcement actions for Illicit Discharges and Illicit Connections.
- Developed revised code language for adoption of the 2005 Department of Ecology *Stormwater Management Manual for Western Washington*.

Burien

The City of Burien viewed the Local Government Stormwater grant program as an opportunity to enhance its stormwater management program in ways that would not have been otherwise affordable.

The City used its grant funds to acquire state-of-the-art stormwater facility management software, water quality testing equipment, stormwater facility inspection equipment, and GPS/GIS mapping software.

In addition, the City developed procedures for illicit discharge detection and elimination, provided workshops for NPDES implementation, and trained city staff in stormwater monitoring techniques.

Burley Lagoon Shellfish Protection District

Pierce County contracted with five organizations (Kitsap Conservation District, Kitsap County Stream Team, Pierce Conservation District, Kitsap County Health District, and the Korean Women's Association) to address a wide variety of potential pollution sources within the Burley Lagoon drainage basin, monitor watershed conditions, and perform public education and outreach.

In brief, the organizations involved in this project:

- Provided technical assistance to local agricultural operations to reduce/prevent stormwater pollution.
- Produced and distributed educational materials.
- Purchased marine and freshwater monitoring equipment for use by a local school.
- Conducted a door-to-door septic system survey of 72 properties within the drainage basin which resulted in the repair or vacation of three failing septic systems and disconnection of five travel trailer discharges.
- Installed a weather station at the Purdy Road shop.
- Inspected and cleaned 28 catch basins which prevented five tons of solids, 244 gallons of liquid, and 13.4 billion fecal coliform bacteria from discharging to Burley Lagoon.

Burlington

During the project period, the City of Burlington employed an engineer to manage the stormwater program. He oversaw the mapping and inspection of stormwater facilities, updating of the IDDE ordinance, and other permit compliance tasks. Using grant funds, the City was able to:

- Create a system for filing and tracking inspection and maintenance activities for stormwater facilities.
- Create a stormwater web page for education and public involvement opportunities associated with the City's stormwater management program.
- Continue the water quality monitoring program for Gages Slough.

Camas

The City of Camas is one of those small communities with limited resources for implementing the Phase II permit. The City's goal was to use the grant funds to get its stormwater program off the ground.

Among a variety of other accomplishments, the City:

- Completed initial work on Draft Stormwater and Illicit Discharge ordinances.
- Created an O&M Manual for Storm Sewer Facility Maintenance.
- Completed CESCL (Certified Erosion and Sediment Control Lead) Training for all City field staff (Engineering, Building, Street, and Water Departments.)

- Purchased and installed stormwater markers, for public education, on all catch basins throughout the City.
- Worked with Clark County GIS Department to have a webpage designed specifically for the City of Camas with all the information on its stormwater facilities. As of June 30, 2009, the site is accessible to only City staff until the information is complete and up to date.
- Purchased a turbidity meter for monitoring, and a handheld GPS unit to be used with GIS for mapping purposes.

Centralia

The City of Centralia used its grant to fund a stormwater project specialist to work on permit-related activities. The project specialist managed work that included:

- Investigation of illicit discharges.
- Stormwater facility mapping.
- Cleaning of catch basins.
- Development and adoption of stormwater regulations.
- Implementation of a community car wash program.
- Education and outreach activities.

Port of Chelan

The Port of Chelan County used its grant funds for several tasks related to compliance with the Phase II permit. Primarily, the Port:

- Prepared an Illicit Discharge Policy.
- Determined the physical and water quality treatment capacity of the Port's stormwater pond and verified that results comply with Ecology's *Stormwater Management Manual for Eastern Washington*.
- Analyzed the performance of the Port's lower stormwater pond.
- Investigated WSDOT drainage and treatment issues impacting the Port.
- Evaluated stormwater pond sediments for contaminants.
- Prepared a design for and completed reconstruction of the stilling basin.

In addition, the Port resolved an illicit discharge into its stormwater system. The reconstruction of the stilling basin will protect the water quality of the Wenatchee River and minimize bank erosion for large storm events.

Clark County

Clark County used its grant funds for activities under Section S5.C.3 of the Western Washington Phase II Municipal Stormwater Permit. More specifically, the county used the grant funds to improve its storm sewer system map.

A number of GIS tools related to the county's existing stormwater database were developed during the contract period, including:

- An automated tool that checks for redundant unique IDs for stormwater features.
- A batch attributing tool to increase data entry efficiency.
- An image-linking tool that associates stormwater database features with source documents (plan sets) and/or photographs. This tool has an associated viewer for accessing existing links.

Stormwater features and attributes have been added to the database for approximately 45 subdivisions since October 2007.

Subsequent to the grant-funded work, the County contracted with a consultant for a mapping project to:

- Streamline the county process for stormwater infrastructure data receipt and entry.
- Eliminate infrastructure data entry backlog.
- Assess and correct existing infrastructure data.
- Inventory county-wide ditch outfalls and conveyance.
- Create procedures to maintain data entry for new development.
- Migrate all source data to a centralized server.

Clyde Hill

The City of Clyde Hill hired a consultant to assist the City in moving toward compliance with the Phase II permit. As a result, in March of 2009, the City successfully adopted a Stormwater Management Program. They also completed a Low Impact Development analysis, finalized code updates to comply with the Phase II permit, and acquired training materials for staff.

Consolidated Diking Improvement Dist. 1

With the assistance of a consultant, the Consolidated Diking Improvement District (located in Cowlitz County) developed a Stormwater Management Program. The District took a number of steps to implement the program including:

- Increasing treatment of vehicle wash water by installing a peat filter system and rerouting discharge from an open ditch to an infiltration pit.
- Installing an oil/water separator at the parking lot catch basin.
- Mapping outfalls including locations (horizontal and vertical), source type, and infrastructure installed.
- Surveying of stormwater knowledge of citizens and businesses.
- Incorporating survey results into a local publication "The Solution to Stormwater Pollution (a citizen's guide to clean runoff)." The District distributed this publication to municipal ratepayers.

Covington

The City of Covington made significant progress in implementing its stormwater management program and compliance with the Phase II permit using these grant funds. The City (among other activities):

- Completed a Stormwater Rate Study and revised rates to meet program needs.
- Updated and reorganized the Covington Municipal Code, the Comprehensive Plan, the Comprehensive Stormwater Plan and the Stormwater Management Manual for permit compliance.
- Created a storm drainage system map and established a GIS foundation for stormwater mapping. The City is contracting with the King County GIS Center for some core GIS capabilities.
- Co-founded the Alliance of South County Environmental Stewards (ACES). This group of cities, business owners, and non-profit organizations shares resources to educate the public on a variety of environmental issues, including stormwater.

Cowlitz County

Cowlitz County's grant fund allowed the county to develop:

- An Illicit Discharge Elimination and Detection ordinance.
- An Erosion and Sediment Control and Construction-Development Stormwater Control Standards ordinance.

The County is collaborating with the cities of Longview and Kelso in the development of its stormwater program.

Des Moines

The Local Government Stormwater grant funds supported the completion of the City of Des Moines' stormwater plan and the following activities:

- Public Education and Outreach: Publishing of pollution prevention articles and NPDES information in the City's newsletter and on its website.
- Illicit Discharge Detection and Elimination: Substantial completion of the public drainage inventory map; updating of the City drainage outfall map; preparation of a draft spill control response plan; development of tracking procedures for reported spills.
- Controlling Runoff from Construction Sites: Certification of two staff for erosion control, and development of tracking procedures for development sites greater than one acre.
- Pollution Prevention for Municipal Operations: Completion of 58 inspections of the City's 63 detention/treatment facilities.

Discovery Bay Shellfish Protection District

Jefferson County Public Health (JCPH) planned to use grant funds to extend its regular freshwater monitoring schedule to include shoreline surveys directly after, and/or during storm events. During higher water flows fecal coliform may be flushed into the bay from stormwater runoff. These bacteria may otherwise go undetected during regular freshwater sampling days.

During the grant period, seven stormwater events occurred. JCPH analyzed 79 samples from shoreline surveys and 30 samples from designated freshwater monitoring spots.

JCPH will continue routine monitoring of the streams as well as identifying pollution and taking corrective actions. The data gathered from this study indicates that work still needs to be done to reduce non-point sources from agriculture.

Douglas County (includes Chelan County and the cities of East Wenatchee and Wenatchee

The partnership of four jurisdictions used the grant funds for a combination of regional and individual activities or purchases. On the regional scale:

- The partnership completed stormwater ordinances for Illicit Discharge Detection and Elimination (IDDE) & Construction/Post-Construction requirements, stormwater system mapping and inspections, and public education.
- The Greater East Wenatchee Storm Water Utility (Douglas County/East Wenatchee) completed review and update of the billing information for parcels within the SWU District Boundary.
- Douglas County and East Wenatchee purchased equipment for development and implementation of their joint Storm Water Management Program.
- Douglas County and East Wenatchee also purchased GPS data collection units and LiDAR data. They also developed a data collection process that provides consistency between the two jurisdictions.
- Staff of all four jurisdictions received training on Good Housekeeping and Municipal Operations, and IDDE.
- The City of Wenatchee prepared a draft IDDE policy document that the other partners are tailoring to fit the needs and requirements of their individual jurisdictions. The goal of the partnership is to implement policies that are consistent throughout the Wenatchee Valley.

Individually, the City of Wenatchee used the grant funds to update the city's Stormwater Comprehensive Plan.

Drayton Harbor Shellfish Protection District

The Drayton Harbor SPD had planned to use the stormwater grant funds to design and construct a stormwater retrofit facility intended to treat direct discharges into Drayton Harbor. However, it was unable to obtain a permit needed from the Burlington Northern Santa Fe Railroad to install the stormwater retrofit facility in the railroad right of way. Consequently, the grant funded the

95 percent design of the facility, but the SPD was not able to proceed to construction. The City of Blaine will continue to work with the railroad to get the required permit and construct the facility.

The SPD re-directed its efforts and did use grant funds to:

- Construct rain gardens in the City of Blaine that are designed to treat stormwater before it enters Cain Creek, which influences Drayton Harbor's water quality and shellfish beds.
- Participate in construction of best management practices on three small farms in the Drayton Harbor watershed. They installed approximately 2,120 feet of fencing to exclude animals from critical areas on small farms and two off-channel watering facilities.

Dungeness Bay Shellfish Protection District

Clallam County elected to use the funds from the Local Government Stormwater Management grant to "jump start" its Stormwater Management program. Over the next three years, the County plans to develop a Comprehensive Stormwater Management Plan; adopt Clearing and Grading and Stormwater Ordinances; assess stormwater impacts by monitoring of chemical, nutrient, and bacterial pollutants; update its "Geographic Information System" (GIS) database layers; and provide peer and public education and outreach.

During this grant period, the County successfully:

- Updated its GIS Hydrology layer. The County was able to integrate its work with DNR, ensuring that the data will be available to users statewide, be maintained with updates from multiple sources (not just Clallam County), and eventually be incorporated into the USGS National Hydro Dataset.
- Trained staff on topics such as low impact development (via Puget Sound Partnership and WSU Extension workshop series) and stormwater monitoring and data analysis.
- Conducted a Low Impact Development Conference, Land Excavator Workshops, and Certified Erosion and Sediment Control Lead (CESCL) training.
- Monitored stormwater and sediment for stormwater influenced contaminants. These stormwater samples help to characterize the broad scope of stormwater problems facing the County. The information from the samples will aid in design of a long-term stormwater monitoring plan that will be written and implemented in the fall of 2009.

DuPont

The City of DuPont made substantial progress towards permit compliance during the grant period. Specific accomplishments included:

- Adoption of a stormwater management program and implementation of many of the program elements.
- Code review for gap analysis purposes.
- Inclusion of stormwater education materials in the City's bi-monthly newsletter (education and outreach).
- Drafting of a municipal stormwater pollution prevention plan.

- Certified erosion and sediment control lead (CESCL) training for City staff.
- Design, purchase and installation of signs identifying City stormwater facilities.
- Collaboration with Pierce County on environmental education efforts and storm drain stenciling activities.

Duvall

With the assistance of a consultant, the City of Duvall completed:

- A City-wide survey of rights-of-way and centerline monument locations.
- A GIS (geographic information system) mapping effort, mapping stormwater information from as-builts and other resources.

The consultant delivered the GIS map product to the City, and the City is using it as an active mapping and documentation tool. The City also used grant funds to purchase GIS software (ArcMap 9.3) and train staff on its use.

Eastmont Metropolitan Park District

The Parks District constructed an expansion to its existing shop to house an equipment wash bay, with an oil/water separator to capture and separate contaminants from equipment cleaning. Wash water from the facility was to be directed to the sewer line and away from stormwater facilities. The shop expansion included a separate room for storage of pesticides, a separate room for storage of hazardous and flammable material, and a room for storage of products such as absorbent pads and wattles to clean up illicit discharges that might otherwise enter stormwater runoff.

During this project several anomalies were found. It was discovered that the drain line that was thought to go to the wastewater treatment plant actually drained to the stormwater sewer line and thus to the Columbia River. There was no existing map of pipes for sanitary sewer or storm sewer pipes or connections. This project corrected that with a new map with pipes, wires and connections.

Edgewood

Information about the City of Edgewood's municipal separate stormwater sewer system existed only in the form of simplified large scale paper maps completed in the 1990s. Much of the information on the age, material, condition and location of the system assets was missing or incomplete. The City used grant funds for collection of drainage features and other pertinent infrastructure and data for the City using GIS (geographic information system) and GPS (global positioning system) technology. The City also purchased GPS hardware and software so it could readily update the stormwater system map.

Edmonds

The City of Edmonds needed to update its stormwater management policies, programs and capital improvement project plans to comply with the Phase II permit. The City's consultant completed a revised illicit discharge code to meet the August 2009 deadline in the Phase II permit. The City also purchased GPS hardware and software to support the illicit discharge identification and mapping requirements of the Phase II permit.

City staff worked with the consultant to revise the stormwater portion of the City code, including modeling of various stormwater standards for sites under one acre in size.

Ellensburg

The City of Ellensburg obtained GIS-based impervious surface measurements and developed a stormwater utility customer database. The City will integrate that database into its billing software to incorporate stormwater fees into its utility billing.

Enumclaw

The City of Enumclaw prepared a:

- Stormwater Management Program.
- Comprehensive/capital improvement plan for stormwater.
- Stormwater Utility technical memorandum.

Everett

The City of Everett focused its grant-funded efforts on public education and involvement activities. The City completed these activities:

- Surveyed residents on their knowledge, attitudes, and behaviors related to stormwater.
- Using the survey results as a springboard, used a focus group to develop a social marketing plan for changing behaviors that contribute to stormwater pollution.
- Conducted a charity car wash education/outreach program.

- Developed a pet waste education program. The City pilot tested the program in five classrooms, with 127 students.
- Held seven natural yard card workshops and two rain garden workshops attended by a total of 255 people.

Federal Way

The City of Federal Way used its grant funds to fill in some of the gaps in its stormwater program. Specifically, they improved their stormwater facility mapping and conducted some targeted education and outreach activities.

The City acquired mapping software and computer hardware to meet the mapping requirements of the Phase II permit. Temporary staff mapped and recorded stormwater facilities throughout the City using GIS and GPS technology.

The City modified its restaurant outreach program to include a broader target audience based on the results of a survey and recommendations from a consultant. In addition, the City:

- Ran a Car Wash Kit program in the summer of 2008.
- Developed a tracking form to meet NPDES requirements.
- Created and installed pet waste signs for its parks.
- Developed a Household Stormwater Pollution Prevention Brochure.

Finally, the City purchased a push camera and video system for inspecting stormwater pipes and infrastructure. This device will be used in the City's Operations and Maintenance program, as well as the IDDE program to assist in inspections of infrastructure.

Fife

In 1997, the City of Fife constructed a two cell concrete pad at the City's maintenance center for the purpose of removing water from wastes generated from street sweeping or vactor truck activities required for maintenance of streets and sanitary sewer pump stations. The waste water was routed through a sand filter and oil/water separator before discharge to sanitary sewer. The original design required a roof to divert clean water to the Erdahl Ditch; the roof was not installed at time of construction due to budget constraints.

Fife used the stormwater grant funds to construct the roof over this waste dump area. A structure was built over both cells of the dewatering facility. The roof, with gutters, now routes clean water to Commencement Bay instead of to the sewer treatment plant.

Filucy Bay Shellfish Protection District

Pierce County contracted with four organizations (Tacoma-Pierce County Health Department, Pierce Conservation District, Citizens for a Healthy Bay, and the Korean Women's Association) to address a wide variety of potential pollution sources within the Filucy Bay drainage basin, monitor watershed conditions, and perform public education and outreach.
In brief, the organizations involved in this project:

- Established 11 upland water quality sampling stations and followed up with adjacent property owners in cases where high fecal coliform counts were recorded.
- Conducted an on-site septic system workshop for real estate agents, two natural yard care workshops, and two small-farm workshops.
- Updated "clean boating kit" information, sponsored a mobile pumpout event for boats on Memorial Day weekend, and installed a pet waste station at Longbranch Marina.
- Trained volunteers in water quality sampling.
- Installed two weather stations.
- Inspected and cleaned 18 catch basins which prevented 3.2 tons of solids, 156.5 gallons of liquid, and 8.6 billion fecal coliform bacteria from discharging to Filucy Bay.

Fircrest

The City of Fircrest:

- Prepared a draft of the Stormwater Management Program.
- Cleaned and inventoried 206 catch basins, and inventoried another 85 catch basins from as-built drawings.
- Conducted inspections of private storm drainage control facilities.
- Set up a Stormwater Management Program web site. This site contains a copy of the draft of the SWMP, a copy of the City's Phase II Annual Report, and a "hotline" for reporting illicit discharges into the City's storm drainage system.

As part of this grant-funded work, the City of Tacoma smoke-tested 60-inch and 30-inch storm drains that carry stormwater from Tacoma, and also pick up drainage within the City of Fircrest.

Gig Harbor

The City of Gig Harbor used its stormwater grant funds to fill funding gaps for a wide variety of stormwater management program activities:

- Staff training.
- Participation in the Kitsap Peninsula Clean Runoff Collaborative.
- Mapping of stormwater infrastructure.
- Municipal code revisions, including a stormwater management manual and IDDE ordinance.
- Natural yard care and rain garden workshops.
- Purchase equipment for water quality monitoring and IDDE.
- Purchase of stormwater modeling software.
- Support of education and outreach activities.

Granite Falls

The City of Granite Falls laid the groundwork for its stormwater program by inventorying its stormwater facilities, doing an initial storm system cleaning, and purchasing monitoring and mapping equipment. The City started work on education and outreach activities by preparing and distributing educational materials and setting up a stormwater website. Lastly, the City revised its stormwater ordinance to address illicit discharge.

Henderson Inlet and Nisqually Reach Shellfish Protection Districts

Using a consultant, Thurston County located and mapped stormwater conveyances in the Henderson Inlet and Nisqually Reach SPDs. The GPS-based inventory complies with NPDES regulations and supports ongoing maintenance of County drainage facilities. The inventory included catch basins, pipes, culverts, ditches, swales, and ponds located within the SPDs. Staff not only mapped each facility, but also assessed and rated its condition.

Holmes Harbor Shellfish Protection District

The Holmes Harbor SPD successfully upgraded the stormwater facilities at Freeland Park, installing new stormwater lines and catch basins, a Filterra treatment system and three rain gardens. With the help of the Whidbey Island Conservation District, the project involved a number of volunteers who not only helped to complete the improvements at the park, but also received training and information on how to

design and install their own rain garden. The SPD plans to monitor water quality at the downstream ends of the new facilities.

The SPD also installed storm drain markers on catch basins within the drainage basin and conducted a car wash outreach and education campaign.

Issaquah

The City of Issaquah used its grant funds to acquire monitoring equipment and to upgrade its databases and field inspection tools to improve the efficiency of field inspectors. The GIS software and database development services it acquired will allow field staff to view site data while in the field.

The City also contracted with a consulting firm to review code changes required by the Phase II permit and to evaluate the impacts of permit requirements on a downtown sub-area plan.

Kelso

The City of Kelso expanded the planning and Phase II permit compliance activities already underway with its Phase II Municipal Stormwater Grant (2006). The City expanded its education and outreach activities, designing a customized storm drain marker based on the results of a market research effort and participated in local events to distribute information on illicit discharges and car wash kits.

The City adopted an Illicit Discharge Detection and Elimination ordinance, as well as a development/redevelopment ordinance, and updated its Engineering Design Manual.

Kenmore

The City of Kenmore used its grant funds to update the City's 2001 Surface Water Management (SWM) Plan and to identify:

- The City's existing and future SWM obligations (under the NPDES Phase II permit and regulations).
- A list of stormwater capital projects to improve local water quality and address urban flooding issues.
- Resources needed to implement the plan in terms of staff, equipment and funding.

The City worked with its consultant to prepare a *Surface Water Management Plan Update*. The *Update* included:

- Stormwater regulatory requirements.
- An evaluation of the existing SWM Program and Gap Analysis.
- A Financial Analysis and Implementation Plan.
- An analysis of the City's surface water utility.

Kennewick

During the grant period, Kennewick city staff:

- Implemented a stormwater utility.
- Planned for required public involvement and education.
- Registered dry wells throughout the City.
- Presented a regional training seminar for illicit discharge detection and elimination (IDDE) and BMPs for municipal operations and maintenance.
- Purchased a remote camera for IDDE.
- Purchased and began the installation of catch basin markers.

Kent

The City of Kent used its grant funds to support an NPDES Coordinator and a variety of permit compliance tasks, including:

- Drafting a new Illicit Discharge Detection and Elimination (IDDE) code.
- Developing a spill and IDDE reporting hotline.
- Providing NPDES training to City staff.

The City completed these tasks during the term of the grant agreement. The spill and IDDE reporting hotline will be in place in February of 2009.

King County

During the grant period, King County staff completed the 2009 revision of Maintenance Standards for flow control and water quality facilities, and maintenance practices for conveyance and other features of the stormwater system. The County also:

- Developed the audit/inspection program for potentially pollution generating sites.
- Initiated 2009 IDDE training and CESCL training courses.
- Continued work on Stormwater Drainage mapping project.

Kirkland

The City of Kirkland's Storm and Surface Water section staff are responsible for developing and implementing the City's Stormwater Management Program (SWMP). During the grant period these staff:

- Drafted an ordinance for update of water quality and illicit discharge code sections to comply with permit requirements for an IDDE program.
- Drafted an ordinance adopting an updated surface water development code.
- Prepared a flow control map for use with the 2005 Ecology *Stormwater Management Manual for Western Washington*.
- Conducted source control site visits at approximately 60 businesses.

- Investigated and resolved water quality complaints received via the City telephone hotline and the City website.
- Trained summer engineering interns to conduct inspections of detention and water quality treatment facilities, including how to check for needed cleaning and maintenance, and how to identify illicit connections and illicit discharges.
- Developed the 2009 Stormwater Management Program.

Kitsap County

Kitsap County used its grant funds for activities under Section S5.C.5 of the Western Washington Phase II Municipal Stormwater Permit. More specifically, the county cleaned 2089 catch basins, removed 582 tons of sediment/debris, processed all sediment and debris at a permitted decant facility, and disposed of the spoils at Olympic View Transfer Station operated by Waste Management. Cleaning of catch basins improves the ability of the stormwater system to filter material from stormwater runoff and prevent localized flooding from clogged catch basins.

Lacey

The City of Lacey created a new Lacey Stormwater Manual, updating local stormwater management guidelines to meet the state standards and comply with the Phase II Permit. The City contracted with a consultant for part of this work to ensure its equivalency with the 2005 Stormwater Management Manual for Western Washington. City staff presented information about the new manual to the Lacey Planning Commission and to the Lacey City Council Utilities Committee and conducted public involvement activities.

Lake Forest Park

Lake Forest Park did not have a formal stormwater management program (SWMP) as required by the NPDES Phase II Permit for Western Washington. Components of the program that were missing include mapping of the stormwater system, assessing needs, and documenting and preparing its annual SWM report and document. The City used its grant funds to:

- Prepare the annual report and *2007 Stormwater Management Program for City of Lake Forest Park* [sic] document as required by the NPDES permit. This document included *Technical Memorandum #1, Stormwater Regulatory Requirements,* which assesses the City's stormwater management program shortfalls, and *Technical Memorandum No. A.2, Surface Water Management Plan Update,* which documents resource needs and availability.
- Map the stormwater system and update the geographic information system (GIS) database with this information.
- Coordinate with upstream jurisdictions on stormwater related program issues.

Lake Stevens

The City of Lake Stevens used its grant funds primarily for acquisition of equipment needed for inventory and assessment of stormwater system components, mapping, and Illicit Discharge Detection and Elimination (IDDE). The City acquired GPS hardware and software, CAD software and a plotter, a pipe camera and accessories, and safety equipment needed for field work.

In addition, during the grant period, City staff developed relationships with other Snohomish County communities to share experience, equipment, and the cost of developing IDDE and stormwater regulations.

Lynnwood

The City of Lynnwood used its grant funds to contract with a consultant to update its stormwater management policies, programs, and capital improvement plan to comply with the NPDES permit. The specific tasks in the contract were to:

- Conduct stormwater programs gap analysis and needs assessment.
- Evaluate drainage problems.
- Evaluate water quality problems.
- Prepare portable stormwater education materials kit.

The grant funds covered the cost of preparation of the draft "Gap Analysis and Needs Assessment Report" for the City. Other work funded by the grant was incorporated into the City's final Stormwater Management Comprehensive Plan in May of 2009.

Maple Valley

The City of Maple Valley used its grant funds to cover the cost of the work already underway to assess its stormwater management plan and program as it related to the Phase II permit requirements. The second phase of that work involved a surface water utility rate analysis.

The City also acquired equipment that would enable it to convert its AutoCAD stormwater facilities map to GIS format and meet the mapping requirements of the Phase II permit.

Marysville

The grant funding allowed the City of Marysville to fund a portion of a much needed overview and gap analysis of the Surface Water Management Program. As of the end of this project, two chapters of the final Comprehensive Surface Water Management Plan document had been prepared: Chapter 2, Existing Conditions and Chapter 3, Regulatory Compliance. The City will continue to fund the contract with its consultant to complete the remaining chapters of the Plan.

The final document will identify gaps in the existing program that need to be addressed for Permit compliance. It will also identify if additional staff or utility rate adjustments will be needed for Permit compliance.

Medina

Prior to the beginning of this project, the City of Medina stormwater system was only partially mapped on paper. The City did not maintain inventory and maintenance records, and monitoring of annual cleaning and inspection was cumbersome.

For this project, the City completed field mapping of all catch basin locations, pipe sizes, inverts, and conditions. In addition, the field data was used to create a digital map of the system. The database includes catch basin numbers, coordinate location, pipe inverts, materials, and condition. The new stormwater system layer is part of the City GIS map that also includes topography, parcel, property line, and aerial photography layers.

With the new stormwater system layer, the City can produce maps that show the City rights-of-way, catch basin locations, coordinates, characteristics and other data. The database can be updated to reflect maintenance work accomplished and any noted repairs needed, enabling the City to track work completed on the stormwater system and work needed.

Mercer Island

The City of Mercer Island staff and its consultant successfully:

- Updated the Stormwater Management Plan (SWMP).
- Reviewed the stormwater management program and regulations and recommended changes to comply with the Phase II permit.
- Developed an Illicit Discharge Detection and Elimination (IDDE) program that includes proactive investigation and assessment, responses to discharges, and training and program implementation.
- Developed Stormwater Pollution Prevention Plans (SWPPPs) for Public Works, Parks Maintenance, and Fire Station 91.
- Updated stormwater ordinances to be in compliance with the Phase II permit.

Mill Creek

In early 2008, the City of Mill Creek, with the help of its consultant, investigated cost-effective alternatives for improving surface water quality in the older neighborhoods in the City. The recommendation from that investigation was to retrofit the existing stormwater facility in a single neighborhood, the Cottonwood subdivision. The retrofit project would improve water quality of storm runoff going into Penny Creek. Mill Creek used its grant funds to cover a portion of the costs of this stormwater retrofit project.

The City constructed the new stormwater facility in May and June 2009. Crews installed six catch basin filter vaults in a three-block area adjacent to Penny Creek. Construction was completed on June 15, 2009.

Milton

The City of Milton successfully completed the following:

- Updated its stormwater comprehensive plan, specifically the Capital Improvement Program and rate schedule.
- Partnered with the City of Edgewood and Tacoma-Pierce County Health Department to put on a series of workshops about natural yard care and how yard care relates to stormwater issues.
- Developed a new clearing and grading ordinance, permit process, and procedures that meet the Phase II permit requirements.
- Partnered with several municipalities and the county to complete a survey of public beliefs/attitudes regarding stormwater. The survey will serve as a baseline for evaluation of public outreach efforts and results.
- Purchased a computer module for the City's current accounting system that can track contact with property owners and enforcement actions related to stormwater.

Monroe

The City of Monroe contracted with a consultant to develop a Stormwater System Plan that would meet the requirements of the NPDES Permit. The consultant completed "a comprehensive examination of the City's Stormwater conveyance system and utility program" and began developing a stormwater management program for the City identifying program staffing needs, regulatory requirements, and financing options. The grant funded a portion of these efforts.

Moses Lake

The City of Moses Lake was able to complete the following during the grant period:

- Develop draft stormwater utility ordinances for Council action.
- Update its stormwater facilities map to include as-builts, reports, and inspection information for facilities (60 percent complete during grant period). The update added GPS data to the stormwater database. The City also completed video inspection of 43,400 linear feet of stormwater lines.
- A draft stormwater management plan (SWMP) that has been published to the City's website.

Mountlake Terrace

The City of Mountlake Terrace proposed to use its grant funds to fund a portion of the work required to prepare an update to its Storm Water Comprehensive Plan.

During the project period, the City employed a consultant to prepare a *Six-Year Stormwater Comprehensive Plan*. This document provides guidance to the City for developing an updated

stormwater management program that will comply with the various regulations and for meeting its stormwater capital improvements needs. The *Plan* includes:

- An *Executive Summary* with an overview of the program.
- Appendices that (1) identify the regulatory requirements, (2) identify the City's current regulatory framework, and (3) include a 'gap analysis' that identifies the additions or changes needed in the City's current program to comply with the NPDES Phase II permit.
- A *Capital Improvement Program* that identifies and prioritizes the City's stormwater facility needs for the next six years.

Mukilteo

The City of Mukilteo focused its grant-funded efforts on achieving compliance with the mapping and illicit discharge sections of the Phase II permit. Using equipment and software purchased with grant funds, the City:

- Field located and mapped all catch basins with a GPS (global positioning system).
- Inventoried detention facilities and outfalls for future location.

The City also prepared a draft of a Municipal Code for Stormwater including sections addressing illicit discharges, developed a schedule for catch basin inspection and cleaning, initiated a phone "hot line" for illicit discharge reporting, and began public outreach and education.

Newcastle

The City of Newcastle contracted with a consultant to review its existing stormwater management program. The consultant performed a gap analysis, developed a compliance schedule for meeting the NPDES Phase II permit requirements, completed a staffing analysis, and completed a draft SWMP in 2008 and a final plan in 2009. The plan is posted on the City's website.

The consultant also completed a funding analysis to evaluate the City's existing stormwater management fee relative to the program requirements of the Phase II permit. As a result, the City increased those fees in the winter of 2008/2009.

Nisqually Reach Shellfish Protection District (see Henderson Inlet Shellfish Protection District)

Normandy Park

The City of Normandy Park used its grant funds to meet some of the Permit requirements. Specifically, the City planned to:

- Completed an inventory of the existing stormwater system, using paper documentation, electronic files and field data collection to map the City's entire system.

- Adopted a new stormwater ordinance based on the 2005 Ecology stormwater manual and created a small-site drainage manual.
- With the help of a consultant, created a Geographic Information System (GIS) that contains the City's stormwater infrastructure, including piping, catch basins, outfalls and more detailed information about each of these structures.

Oakland Bay Shellfish Protection District (see Annas Bay Shellfish Protection District)

Olympia

The City of Olympia used its grant funds to conduct two studies:

- A baseline study of stormwater best management practices (BMPs) awareness that assessed these topics:
  - Perception of the health of local waters.
  - Knowledge of stormwater issues and systems.
  - Perceived impact on local water from household and construction sources.
  - Incidence of certain behaviors that impact stormwater quality (e.g., lawn care practices, vehicle washing, pet waste).
  - Interest in programs aimed at improving water quality.
- An ethnographic study to assess lawn care practices and attitudes among a small group of homeowners and yard care professionals. Based on the results of that assessment, the City received recommendations on effectively marketing responsible yard care practices.

The results of both of these studies will assist the City in shaping successful future community-based social marketing campaigns and outreach events.

Pacific

The Local Government Stormwater grant funds enabled the City of Pacific to "jump start" its Stormwater Management program. The funds were used to contract with external professionals that developed Technical Memoranda and education efforts for the following programs:

Community Interaction/Involvement and Education Plan. A professional educator/environmental enthusiast developed the community involvement component of the City's stormwater program. The Education Plan identifies strategies along with activity costs that the City of Pacific can budget each year.

SWMP Gap Analysis and Capital Plan Update. The grant funds assisted the City in hiring a consultant that worked with staff (and the Citizens Committee) to assess the current level of effort performed by the City relative to the level of effort required by the permit. This Gap Analysis identified staffing and associated costs of compliance that translate into rate recommendations to City Council. The Citizens Committee hosted an open house in late 2008 to further the public's education and understanding of the City's Stormwater Program.

City of Pacific staff, elected officials and citizens now have a better understanding of its stormwater program, funding requirements and will be able to design its programs that result in clean water benefits because of these grant funds.

Pierce County

Pierce County worked with a consultant to develop a Phase 1 Permit Monitoring Compliance Technical Memorandum. The County identified three outfall sites and three BMP sites for monitoring (as required by the Phase I permit) and drafted a Quality Assurance Project Plan (QAPP) for the monitoring effort.

Other permit activities included:

- Purchase of 30 "Salmon-Friendly" car wash kits for use at charity car wash events.
- Identification of pollutant generating sources.
- Development of IDDE (Illicit Connections and Illicit Discharge Detection and Elimination) training materials.
- Conducting CESCL (Certified Erosion and Sediment Control Lead) training for 59 Pierce County employees.
- Installation of a weather station at Oro Bay on Anderson Island.

Poulsbo

The City of Poulsbo used grant funds for the last phase of a contract to complete a stormwater comprehensive plan which was adopted in mid-2008. The City then used the grant to fund NPDES permit implementation and program development:

- Formation of a coordination group of stormwater managers from regional jurisdictions for the purpose of sharing information, resources, and expertise related to NPDES permit implementation.
- Participation in the Kitsap Peninsula Clean Runoff Collaborative, a group of Kitsap County communities, to collaborate and share education and outreach resources. Efforts during the grant period included:
  - Implementation of a regional spill reporting hotline.
  - Design of a public education campaign for 2009 regarding general stormwater awareness and back yard pet waste management.
- Implementation of a spill documentation and tracking system.
- Adoption of an Illicit Discharge Detection and Elimination ordinance.
- Drafting of a Construction/Post-Construction Runoff Control ordinance.
- Adoption of the *Kitsap County Low Impact Development Guidance Manual*.

Pullman

The City of Pullman focused its grant-funded efforts on the development of a stormwater utility. The City:

- Developed an appropriate equivalent residential unit (ERU) and calculated ERUs for all parcels.
- Developed a preliminary stormwater utility customer database and integrated it into the City's existing customer database and billing system.
- Created a GIS coverage of impervious surface (ISA) and hard-copy ISA atlas for parcels with stormwater utility accounts.
- Adopted the stormwater utility in February 2009.

Puyallup

The City of Puyallup used its grant funds to cover the costs of collecting mapping data using GPS equipment and software also acquired with grant funds. The GPS data was downloaded into GIS format and provided to Pierce County for upload into the County's GIS database, CountyView which provides a region-wide stormwater system database. At the close of the grant, the City had mapped approximately 90 percent of its stormwater facilities.

Redmond

The Local Government Stormwater grant to the City of Redmond helped to move the development of an Overlake Regional Stormwater Treatment Facility from the 'to do' list to the drawing board. The City contracted with two consultants to:

- Provide accurate data on infiltration capacity across the Overlake watershed.
- Collect and assess the field data needed to develop and run a quantitative hydraulic model for the watershed.

At the end of the grant period, the project was in the public involvement phase. A flyer on the draft plan was available at the following website (as of summer 2009): http://www.redmond.gov/intheworks/overlake/pdfs/OverlakeVillage.pdf

Renton

The City of Renton Public Works Surface Water Utility converted the City's old AutoCAD based surface water inventory map to a Geographical Information System (GIS) format as part of the Surface Water Utility GIS Program. The older AutoCAD based surface water inventory map had a number of flaws:

- It did not include correct information in many areas of the City.
- It was missing stormwater information from new developments.
- It did not include newly annexed areas in the City's System Inventory Map.
- It was not in a format that would be a useful tool for tracking future NPDES Phase II work.

During the grant period, the City accomplished the following:

- Converted older AutoCAD map and spreadsheet-based system to new ArcGIS database and mapping.
- Inserted data for annexed areas.
- Inserted new infrastructure information into the GIS.
- Converted older AutoCAD and spreadsheet data into the new GIS mapping database.
- Produced System Inventory Maps from the ArcGIS conversion.
- Inserted as-builts into the ArcGIS storm system inventory.

Richland / Port of Benton

The City of Richland and Port of Benton have an Interlocal Agreement for purposes of managing stormwater under the Eastern Washington Phase II Municipal Stormwater Permit. They accepted these grant funds jointly under that agreement, with the intent of purchasing storm sewer cleaning and maintenance equipment. Eductor trucks vacuum stormwater, wastewater and associated solids into a tank located on a truck for transport and disposal, removing contaminated water and sediment from storm drainage systems. The City purchased the storm sewer cleaning equipment in January 2008.

Rocky Bay

Pierce County contracted with five organizations (Tacoma-Pierce County Health Department, Kitsap County Stream Team, Pierce Conservation District, Kitsap County Health District, and the Korean Women's Association) to address a wide variety of potential pollution sources within the Rocky Bay drainage basin, monitor watershed conditions, and perform public education and outreach.

In brief, the organizations involved in this project:

- Established three upland water quality sampling stations.
- Conducted two natural yard care workshops, a small farm tour, and two workshops for real estate agents—one addressing on-site septic systems and the other issues with developing sites on marine and freshwater shorelines.
- Developed a Kitsap Peninsula Watershed Workbook based on the National Park Service's Riverwork Book and distributed educational materials within the watershed.
- Installed a weather station at the Wright-Bliss Fire station.

Samish Bay

Skagit County entered into an interlocal agreement with the Skagit Conservation District (District) to use the Samish Bay Local Government Stormwater grant to fund the District's program for ongoing education and involvement for addressing nonpoint pollution sources in Samish Bay. The grant funded:

- Continued work of a local stakeholders group (Technical Advisory Committee, or TAC) to develop a strategy to address the fecal loading in the watershed.
- Coordination of a volunteer effort to conduct regular storm event monitoring in the watershed.
- An outreach program to educate and involve watershed residents.

Sammamish

The City of Sammamish used its grant funds to complete a gap analysis to identify the program changes that the City needed to make to comply with the Phase II permit.

The City completed the *2009 Stormwater Management Program* (SWMP) document in the spring of 2009. The SWMP covers the five components identified in the Phase II permit providing a brief overview of permit requirements, summarizing the programs and activities currently underway that meet or contribute to meeting the Permit requirements, and identifying activities planned for 2009 and throughout the life of the Permit.

SeaTac

The City of SeaTac began implementation of the Phase II municipal stormwater NPDES permit with:

- A review of existing stormwater program elements and gap analysis of those elements as they pertained to the known Phase II requirements.
- Identification of staffing needs to sustain the stormwater management program (SWMP).
- Evaluation of future funding needs for program sustainability.

To optimize its available resources, the City looked for opportunities to build upon relevant compliance-related efforts developed by City staff with King County and EPA.

The City used its grant funds to hire a consultant to develop a stormwater management program. The consultant prepared:

- A Stormwater Management Program document.
- A detailed compliance schedule.
- A Surface Water Rate Study.
- A staffing analysis Technical Memorandum.

City staff presented these documents to the City Council for review and approval. In addition, the consultant and City staff updated the existing SeaTac stormwater website.

City of Seattle

The City of Seattle researched alternative approaches to complying with portions of the Phase I Permit. The City focused on three specific sections:

- Section S5.C.9.2.b.ii, which requires the permittee to develop an inspection program for stormwater facilities. The City researched the feasibility of outsourcing this component of the permit.
- Section S5.C.7.b.iii, which requires auditing/inspections for illicit discharges. The City researched the 'business self certification' aspect of this section of the permit.
- Section S5.C.8, the Illicit Discharge and Detection and Elimination (IDDE) program requirements. The City wanted to develop a cost estimate for a vendor-supplied IDDE program.

The City's consultants provided reports on the relative merits/costs of complying with those sections of the permit using in-house resources versus outsourcing the tasks. The City also received planning tools for proceeding with implementation of these aspects of its stormwater program.

Port of Seattle

Through its consultant, the Port of Seattle completed extensive tenant outreach to 27 tenants based on an outreach and education plan completed in September of 2008. The outreach efforts included:

- Distribution of SWPPP templates, including GIS maps of the stormwater infrastructure and source control manuals for individual sites.
- Site assessment of stormwater management practices (five sites).
- Providing spill contingency plans and spill response materials to ten tenants; technical assistance on BMP implementation to nine tenants; and spill response training to three tenants.
- Conducting baseline and follow up surveys.

Town of Selah

Selah focused its work on the following eligible project components:

- Review of existing and model stormwater regulations.
- Mapping or geographic information systems of stormwater system infrastructure.
- Source control activities, such as drain stenciling, business inspections and public information and communication.
- Identification and removal of illicit stormwater discharges into municipal separate storm sewer systems.

Shoreline

The City of Shoreline drafted and adopted a new stormwater code that meets Phase II permit requirements in early 2009. The City also completed an updated map of all 567 confirmed stormwater outfalls. It now has a more accurate GIS stormwater infrastructure map and a database of outfall characteristics. Photos have been hyperlinked to each outfall for reference. The City prepared an Outfall Inventory Data Collection Manual and PowerPoint presentation on the methods used to complete the project.

Skagit County

Skagit County used its grant funding to:

- Dedicate two employees to Phase II permit compliance.
- Develop a stormwater web page, www.skagitcounty.net\stormwater, which provides access to annual reports and SWMP updates.
- Map its stormwater infrastructure in an electronic format, as well as begin development of asset management software.
- Establish a Stormwater Pollution Hotline has been that allows the public to report illicit discharges or other water quality concerns.
- Contract with a consulting firm to modify of the existing drainage code to be compliant with the Phase II Permit.

Port of Skagit County

The Port held two stormwater educational workshops for industrial tenants and port staff, purchased GIS/GPS and confined space safety equipment, prepared a GIS map of its stormwater facilities, installed catch basin labels and filter inserts, added pet waste stations and additional garbage cans along its trail system, published a 'pet waste' brochure, and posted educational signs along the trails to increase compliance.

Skagit Drainage District 19

The District successfully:

- Prepared and published its Stormwater Management program.
- Adopted specific drainage maintenance system BMPs.
- Labeled all stormwater facilities.
- Participated in regional coordination meetings.
- Adopted an IDDE policy and provided orientation to the Commissioners on reporting requirements.
- Completed a map of the entire stormwater system

Snohomish

The City of Snohomish used its Local Government Stormwater grant funds to purchase equipment needed for stormwater facility inspection and mapping and for water quality monitoring. The City purchased the following equipment:

- A pH/DO/Conductivity meter
- A tri-meter kit (turbidity, chlorine, color)
- A trailer-mounted CCTV and accessories
- GPS hardware and software
- GIS software

Snohomish also provided CESCL (Certified Erosion and Sediment Control Lead) Training for ten field staff involved in stormwater construction permit inspection.

Snohomish County

Snohomish County proposed to use its Local Government Stormwater grant to:

- Help fund its Illicit Discharge Detection and Elimination (IDDE) program.
- Coordinate with Department of Information Services (DIS) to upgrade the water quality Compliant Investigations and IDDE databases.
- Plan improvements to the County's drainage system mapping to meet NPDES requirements.

The table below shows the activities of the IDDE program during the period funded by the grant. In addition, the County continued its work with DIS on its databases and with planning improvements to its drainage system map. These latter two tasks were still in progress at the end of the grant period.

Month/Year	Complaints investigated	Site Visits	Severe Illicit Discharges Removed	Non-severe Illicit Discharges Removed	Outfalls Screened
3/08	37		1		
4/08	10	21	2		
5/08	9	21		4	20
6/08	8	22	1		75
7/08	10	12	2	4	145
8/08	9	15	1	6	16
9/08	10	16	1	3	256

Spokane

The City of Spokane undertook a variety of permit-related tasks:

- **Required Plans.** The City updated its Stormwater Management Plan, developed an Operation and Maintenance Plan, and is drafting a Stormwater Pollution Prevention Plan.
- **Stormwater Hotline.** The City established a hotline for stormwater complaints along with record keeping procedures for those complaints and other stormwater investigations.

- **Training.** Many of the City's stormwater staff were trained in identifying illicit discharges, protocols, and general information about stormwater and the city's permit.
- **Education.** The City of Spokane participated in and developed a variety of education and outreach activities, including participating in Earth Day, Arbor Day, the County Fair, and Leaf Fall Festival to educate the general public about stormwater, and developing a stormwater slogan, mascot and letterhead to help with educational efforts.

Spokane County

Spokane County used its Local Government Grant to:

- Inventory locations where stormwater is discharged into surface waters and to update the inventory of locations where stormwater is discharged into the ground.
- Work with the cities of Spokane and Spokane Valley on crafting public information about ways to reduce water pollution related to stormwater. The County developed an overall theme and sketch (Storm Drain Dan) for all three agencies to use for stormwater education materials. The County also crafted a brochure, "Maintaining Pools and Hot Tubs to Prevent Stormwater Pollution."
- Draft a Stormwater Management Program for the County's website that describes how Spokane County plans to reduce potential for water quality degradation due to stormwater.

- Develop the strategy and implementation criteria for a Neighborhood Drainage Assistance Program (NDAP) that will focus on small projects to improve treatment of runoff from the municipal storm sewer system prior to discharge to surface water and to the aquifer. The intent is to focus on restoring natural drainage systems, using low impact stormwater facilities to remove pollutants from stormwater and the retrofitting of stormwater outfalls to provide for stormwater treatment prior to discharge. The County budgeted funds for the NDAP, and projects are scheduled for the summer of 2009.

Steilacoom

The Town of Steilacoom staff inventoried all stormwater structures for the first time, including over 750 catch basins. The Town employed a consulting firm to develop a stormwater facility base map based on the system inventory.

Stillaguamish CWD

Snohomish County used its grant to develop a shellfish restoration plan in consultation with key stakeholders. The plan defines the water quality problems affecting shellfish certification, goals, objectives, and action commitments of Snohomish County and its tribal, state government, local government, special district, and non-profit partners. This plan will serve, in part, as Snohomish

County's shellfish protection program for the Stillaguamish River Clean Water District, which is one of the requirements under RCW 90.72 for local jurisdictions with shellfish protection districts.

Sumner

The City of Sumner used its grant funds to:

- Hire a consultant to do gap analysis of the City's code and development specifications dealing with stormwater.
- Construct a monitoring station for a residential low-impact development. (See photo.)
- Conduct a review of a large stormwater facility proposed within the City that would serve both a section of a Pierce County roadway and a private development within the City.
- The proposed shared stormwater facility is under final design and will be constructed in 2009.

Sunnyside Valley Irrigation District

The District used its grant funds to develop an electronic map of its stormwater facilities. Accurate mapping of all drains and inlets will assist in detecting illicit discharges and prioritizing stormwater monitoring after rain events.

The District also installed a Nu-Way flume in one of its major drains at the end of the agricultural irrigation return flow. This flume allows direct measurement of water discharge in cubic feet per second. Collecting and analyzing the differences between the agricultural contribution versus the urban contribution of water discharged and their differences in quality, if any, will assist in finding any illicit discharge point sources.

Finally, the District prepared a Stormwater Management Plan (SWMP) and posted it to its official website for all landowners and the public to review.

Port of Tacoma

The Port of Tacoma:

- Purchased and installed stormwater monitoring equipment (samplers, data loggers).
- Prepared and submitted to Ecology the required Quality Assurance Project Plans (QAPPs) for the monitoring program.
- Analyzed drainage basins to select the most representative for stormwater monitoring.
- Selected an accredited laboratory for analysis of monitoring samples.

City of Tacoma

The City of Tacoma used its Local Government Stormwater grant funds for a variety of tasks required by its NPDES Permit:

- The City completed the public participation process to update its SWMP. The SWMP was updated, finalized, and submitted to Ecology along with the 2007 NPDES Annual Report.
- City staff conducted 503 business inspections and responded to 227 spills and complaints as part of the Source Control Program for Existing Development (NPDES Permit Section S5.C7.)
- City staff also worked on revision to the City's Surface Water Management Manual in response to Ecology's comments. The goal is to meet equivalency to Ecology's 2007 Manual Appendix 1.

Thurston County

Thurston County used its grant funds to support a multi-year effort to locate and map its stormwater conveyance system in the urban growth area. The GPS-based inventory complies with NPDES regulations and supports ongoing maintenance of County drainage facilities. The County is working to inventory all catch basins, pipes, culverts, ditches, swales, and ponds within the study area. Staff are not only mapping each facility, but also assessing and rating its condition.

Tukwila

The City of Tukwila used its grant funds to support consulting work to prepare a surface water management program (SWMP) as required by the NPDES permit. The City's consultant evaluated its existing drainage and inspection program, conducted a gap analysis, prepared an implementation schedule, and drafted a SWMP. The draft SWMP was posted to the City's web site in mid-2008.

In addition, the City used a portion of the funds to support ongoing efforts to inventory and map all stormwater facilities within the City as required by the permit. The inventory work began in 2002, and the grant funds supported work within an area bounded by I-5, SR 405, and Interurban Avenue. Within the area, the consultant inventoried and mapped manholes, approximately 600 catch basins, 250 culverts, pipe and ditch invert elevations, sizes, materials and direction of flows.

Tumwater

The City of Tumwater used its grant funds to:

- Provide training to staff to identify and address sources of stormwater pollution.
- Revise its drainage manual and stormwater ordinance.

- Expand stormwater educational resources.
- Implement a private stormwater inspection program that will use a ruggedized field laptop to track stormwater data and technical assistance, and provide support in the event of an emergency response.

University Place

The City of University Place:

- Developed, updated, and began to implement a Surface Water Management Program (SWMP) that is in compliance with the NPDES Phase II permit.
- Held public education workshops and public meetings presenting the SWMP and updates to the public and soliciting public comments. These meetings were taped and aired on television. The City also published a stormwater-oriented newsletter.
- Revised City regulations to be in compliance with the NPDES requirements.
- Provided stormwater training to field personnel.
- Acquired tools and equipment for use by field personnel implementing the SWMP.

Port of Vancouver

The Port of Vancouver developed a Stormwater Management Plan (SWMP). The Port also drafted stormwater facility maps showing all stormwater lines, catch basins, and manholes, separated by drainage basin.

Other grant-funded efforts include:

- Initiating the design phase for the construction of a dewatering pad for street sweeper material disposal.
- Purchasing approximately 400 custom drain markers for labeling all Port catch basins.
- Conducting a *Tenant Environmental Lunch Forum* to provide stormwater education and information about municipal permit requirements to Port tenants.
- Purchasing used video pipeline inspection equipment and related support equipment.
- Purchasing and installing sediment catch basin inserts in areas with high sediment and debris loading.

Whatcom County

Whatcom County compiled data on private stormwater facilities within the county and integrated that data into its geographic information system (GIS) database. The project also provided improvements to the county's stormwater database management and mapping procedures.

Woodinville

The City of Woodinville inventoried existing stormwater facilities and to put the inventory into geographic information system (GIS) format for later use for modeling and Phase II permit compliance.

The City began the inventory in the summer of 2008, mapping catch basins, pipes, ponds, and outfall locations. The City completed the inventory in 2009 and entered the data into GIS format. The City also acquired complaint data from King County and City of Woodinville Maintenance and began mapping that information to start a CIP (capital improvements planning) process for the City.

Yakima (includes Yakima County and the cities of Sunnyside and Union Gap)

The cities of Yakima, Sunnyside and Union Gap, along with Yakima County, started work on regional stormwater planning with their 2006 Phase II Stormwater Grant (the stormwater grant program that preceded this 2007 Local Government Stormwater Grant program). With this second grant, the group expanded its efforts to promote regional consistency and facilitate permit compliance.

The following tasks were completed:

- Maintained a regional stormwater website.
- Developed a GPS data dictionary and attribute list for use by regional partners.
- Drafted a Regional Stormwater Manual and an IDDE procedures document.
- Union Gap purchased a GPS for mapping its stormwater infrastructure. Yakima County purchased GPS equipment, imagery analysis software, and other equipment to support the stormwater program.
- Completed an Operations and Maintenance manual for the regional MS4s.

Appendix: Grant Activities Summary Table

Grant Activities as listed in the Guidelines		Algona	Anacortes	Anacortes, Port of	Annas Bay SPD	Arlington	Asotin County Partnership	Auburn	Bainbridge Island	Bellevue	Bellingham	Bellingham, Port of	Black Diamond	Bonney Lake	Bothell	Bremerton
Conduct inventories of stormwater sources.	38			■		■	■	■							■	■
Establish and refine stormwater utilities (including stable rate structures).	15					■	■						■			
Develop stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).	39					■	■	■	■	■		■	■			
Review existing and model stormwater regulations.	23		■													
Map or develop geographic information systems of stormwater system infrastructure.	49			■		■	■	■	■			■	■			■
as drain stenciling, business inspections, and public information and communication.	53	■	■	■	■		■		■	■		■				■
Identify and remove illicit stormwater discharges into municipal separate storm sewer systems.	13		■												■	
Complete detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.	58	■		■			■	■				■	■	■		
Purchase equipment for conducting stormwater monitoring.	19										■					
Evaluate stormwater quality.	10				■											
Other activities	7				■									■		

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Grant Activities as listed in the Guidelines	Brier	Burien	Burley Lagoon SPD	Burlington	Camas	Centralia	Chelan, Port of	Clark County *	Clyde Hill	Consolidated Diking Improvement Dist. 1	Covington	Cowlitz County	Des Moines	Discovery Bay SPD	Douglas County Partnership
Conduct inventories of stormwater sources.		■	■				■			■			■		■
Establish and refine stormwater utilities (including stable rate structures).											■				■
Develop stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).	■			■	■		■				■		■		■
Review existing and model stormwater regulations.	■								■						■
Map or develop geographic information systems of stormwater system infrastructure.	■					■		■			■		■		■
as drain stenciling, business inspections, and public information and communication.			■	■	■	■				■	■		■		
Identify and remove illicit stormwater discharges into municipal separate storm sewer systems.			■			■									
Complete detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.	■						■		■	■	■		■		■
Purchase equipment for conducting stormwater monitoring.		■	■		■										■
Evaluate stormwater quality.				■			■							■	
Other activities															

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Grant Activities as listed in the Guidelines	DuPont	Duvall	Eastmont Metropolitan Park District	Edgewood	Edmonds	Ellensburg	Enumclaw	Everett	Federal Way	Fife	Filucy Bay SPD	Fircrest	Gig Harbor	Granite Falls	Henderson Inlet SPD	Holmes Harbor SPD
Conduct inventories of stormwater sources.		■		■	■						■	■		■	■	
Establish and refine stormwater utilities (including stable rate structures).						■	■									
Develop stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).					■		■					■	■	■		
Review existing and model stormwater regulations.	■															
Map or develop geographic information systems of stormwater system infrastructure.		■		■	■				■			■	■	■	■	
as drain stenciling, business inspections, and public information and communication.	■		■					■	■	■	■		■	■		■
Identify and remove illicit stormwater discharges into municipal separate storm sewer systems.											■					
Complete detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.	■					■	■	■				■				■
Purchase equipment for conducting stormwater monitoring.									■		■		■	■		
Evaluate stormwater quality.																
Other activities																

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Grant Activities as listed in the Guidelines	Issaquah	Kelso	Kenmore	Kennewick	Kent	King County *	Kirkland	Kitsap County	Lacey	Lake Forest Park	Lake Stevens	Lynnwood	Maple Valley	Marysville	Medina	Mercer Island
Conduct inventories of stormwater sources.						■				■					■	
Establish and refine stormwater utilities (including stable rate structures).			■	■									■			
Develop stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).		■	■	■	■		■		■	■		■	■			■
Review existing and model stormwater regulations.	■		■				■						■	■		■
Map or develop geographic information systems of stormwater system infrastructure.	■			■		■	■			■			■		■	
as drain stenciling, business inspections, and public information and communication.		■		■		■	■	■				■				
Identify and remove illicit stormwater discharges into municipal separate storm sewer systems.							■					■				
Complete detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.		■	■	■			■		■	■	■	■	■	■		■
Purchase equipment for conducting stormwater monitoring.	■			■							■					
Evaluate stormwater quality.												■				
Other activities						■										

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Grant Activities as listed in the Guidelines	Mill Creek	Milton	Monroe	Moses Lake	Mountlake Terrace	Mukilteo	Newcastle	Nisqually Reach SPD	Normandy Park	Oakland Bay SPD	Olympia	Pacific	Pierce County *	Poulsbo	Pullman	Puyallup
Conduct inventories of stormwater sources.						■		■	■				■			■
Establish and refine stormwater utilities (including stable rate structures).		■		■			■								■	
Develop stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).		■		■		■			■					■		
Review existing and model stormwater regulations.					■		■					■		■		
Map or develop geographic information systems of stormwater system infrastructure.				■		■		■	■							■
as drain stenciling, business inspections, and public information and communication.	■	■		■		■				■		■	■	■		
Identify and remove illicit stormwater discharges into municipal separate storm sewer systems.													■	■		
Complete detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.		■	■	■	■	■	■				■		■		■	
Purchase equipment for conducting stormwater monitoring.																
Evaluate stormwater quality.										■						
Other activities										■	■		■			

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Grant Activities as listed in the Guidelines	Redmond	Renton	Richland/Port of Benton	Rocky Bay SPD	Samish Bay SPD	Sammamish	SeaTac	Seattle, City of *	Seattle, Port of *	Selah	Shoreline	Skagit County	Skagit County, Port of	Skagit Drainage District 19	Snohomish	Snohomish County *
Conduct inventories of stormwater sources.		■		■							■		■	■		
Establish and refine stormwater utilities (including stable rate structures).							■									
Develop stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).											■	■		■		
Review existing and model stormwater regulations.						■	■			■						
Map or develop geographic information systems of stormwater system infrastructure.		■								■	■	■	■	■	■	■
as drain stenciling, business inspections, and public information and communication.				■	■			■	■	■		■	■	■		
Identify and remove illicit stormwater discharges into municipal separate storm sewer systems.				■						■						■
Complete detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.	■					■	■		■		■			■		
Purchase equipment for conducting stormwater monitoring.				■											■	
Evaluate stormwater quality.					■											
Other activities			■													

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Grant Activities as listed in the Guidelines	Spokane	Spokane County	Steilacoom	Stillaguamish CWD	Sumner	Sunnyside Irrigation Distric	Tacoma, Port of *	Tacoma. City of *	Thurston County	Tukwila	Tumwater	University Place	Vancouver, Port of	Whatcom County	Woodinville	Yakima County
Conduct inventories of stormwater sources.		■							■	■			■	■	■	
Establish and refine stormwater utilities (including stable rate structures).																
Develop stormwater ordinances and regulations, initial staffing, and other capacity building activities to facilitate ongoing stormwater management needs).	■							■				■				■
Review existing and model stormwater regulations.	■				■					■	■	■				■
Map or develop geographic information systems of stormwater system infrastructure.			■			■			■	■			■	■	■	
as drain stenciling, business inspections, and public information and communication.	■	■									■	■	■			
Identify and remove illicit stormwater discharges into municipal separate storm sewer systems.								■			■					
Complete detailed plans, for example, stormwater management plans, engineering reports or facilities plans (including financing options and choices), education and outreach plans, source control progress reports.	■	■		■	■	■	■	■		■	■	■	■			■
Purchase equipment for conducting stormwater monitoring.					■	■	■					■	■			
Evaluate stormwater quality.					■		■									
Other activities																■

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