



Before maintenance



After maintenance

Before and after shots of a private stormwater management facility illustrate the benefits of technical assistance. 16, 708 cubic feet of stormwater management detention restored in the Chambers Creek Watershed.

## ***2013 Stormwater Management Program – March 2013***

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**Pierce County**

**Public Works and Utilities  
Surface Water Management**

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## **A Message from Pierce County.**

Greetings.

This report is a summary of goals, activities and projects that Pierce County is taking in 2013 to help reduce the negative effects of polluted runoff. Polluted runoff is a leading cause of the decline of the nation's surface waters. Pierce County's stormwater program plays an important role in protecting our water.

This report is one of over a hundred requirements contained in a federal clean water permit issued by the Department of Ecology to Pierce County. In reality, the "Permit" (NPDES Phase I Municipal Stormwater Permit) is a set of regulations almost 200 pages long, referenced by over a 1000 additional pages of guidance documents. Together, these requirements add up to about \$17 million of projects, programs, plans, rules and regulations that Pierce County is responsible for in 2013, implemented by seven different County departments.

It is a huge program. By the nature of its objective, it must be because the challenge of preventing and controlling pollutants that get into rainwater or snow melt as it flows across the land comes from virtually every activity we do as a society.

As those contaminants mix with one another and enter our waterways and foodchains, they come back to us by way of human health complications, disease, fish kills, and loss of native plants, animals and organisms.

Polluted runoff from stormwater is a national problem. No area of the country is immune. In Washington, the fate of Puget Sound and its freshwater streams depend on our success in preventing and controlling it.

But we can't do it alone. Pierce County tax payers and surface water management utility rate payers can shoulder only so much of the cost. Recognizing this, Pierce County has worked hard to convince the state Legislature that State and Federal governments need to provide operational funding to meet the terms of the Stormwater Permit. We will continue to do so because the problem is so big and the costs so great.

Even so, we see glimmers of hope from the efforts of our labors. In 2012, we continued the trend of reducing the worst violations of stormwater management facilities. In fact, since 2008, “significant noncompliance” has been reduced by over 50%. Additionally, through our ambient monitoring program and annual watershed health report card, in 2012, we registered the first ever improvement in the County’s overall water quality grade from a C to a C+. Also in 2012, the Washington Department of Health was poised to reclassify bed closures in Minter Bay and near Wauna in Pierce County from “prohibited” to “open” as a result of Pierce County’s work to fix failing septic systems. Pierce County enters 2013 as the winner of the National Environmental Achievement for Innovation in Operations from the National Association of Clean Water Agencies as a result of this work.

Furthermore, the US Environmental Protection Agency found that the Pierce County Stormwater Program is working well in so many areas challenged around the country when it audited the County in 2012. EPA’s audit credited the County for its approach to providing technical assistance to homeowners associations to get them to step up and maintain those systems. The audit also credited our response to illicit discharges; our planning for and meeting new Permit requirements in a strategic way; and our comprehensive use of technology and geographic information systems.

So in 2013, Pierce County will continue to fully implement the stormwater permit. We will struggle with how to meet the additional requirements as they come due in the last half of the year. And, frankly, we will need to be more frugal, more efficient and even more effective as we look to 2014. That is because so much of the additional new work starts then. Meanwhile, in 2013, we prepare. We continue to partner. We continue seek to “raise the grade” in all of our streams.

As we do every day, we will work hard to improve the health of Pierce County watersheds and to reduce the negative effects of polluted runoff.

Thank you

Dan D. Wrye  
Water Quality Manager

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# 2013 STORMWATER MANAGEMENT PROGRAM

## 1. Introduction.

This document is **Pierce County's 2013 Stormwater Management Program (Program).**

Under a federal water quality “permit” (really, more of a series of regulations) issued to Pierce County by the Washington Department of Ecology, each year, Pierce County is to publish a Stormwater Program of activities each year.. The permit that requires this annual Program is the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit (Permit). Other jurisdictions in Western Washington have the same requirement. These include Snohomish, King and Clark counties, and the cities of Tacoma and Seattle.

The requirement for an annual Stormwater Program is only one of over a hundred requirements in the permit. The annual Stormwater Program helps people sort through the scores of pages of a complicated permit document to better understand what specifically Pierce County is doing to help reduce negative impacts of stormwater on surface water resources. And, of course, publishing it means the County has complied with this requirement.

## 2. Permit Coverage.

NPDES (Section 402 of the federal Clean Water Act) is a federal program that requires permits from United States Environmental Protection Agency, or, as in our case, a delegated state agency (Washington Department of Ecology) for the discharge of pollutants into the nation's water ways.

The NPDES Permit Program covers numerous types of discharges to waters of the United States, including process wastewater, construction sites runoff, and stormwater from industry and urbanized areas. Certain practices at specific sites are covered by various types of NPDES permits. By example, these include individual process wastewater permits (such as for the Chambers Creek Wastewater Treatment Plant); industrial stormwater permit (such as from the Narrows Airport); sand and gravel operational permits (such as for road maintenance shops and the Orting Quarry); construction activities for construction sites of one acre and larger in size; and the municipal stormwater permit for regulating runoff from lands and facilities owned or operated by the County. The NPDES Phase I Municipal Stormwater Permit covers discharges from the municipal separate storm sewer system (MS4) that Pierce County owns and operates. This Permit requires Pierce County to use stormwater best management practices (BMPs) to reduce the discharge of pollutants to the maximum extent practicable.

Pierce County has been under an NPDES Phase I Municipal Stormwater Permit issued by the Washington Department of Ecology (Ecology) since 1995. That first Permit was extended by the State in 2000 and again in 2005. Ecology made major changes and additions and issued the 2007-2012 Permit to Pierce County an effective date of February 16, 2007. In February 2012, the Department of Ecology expended the Permit to August 2012. In response to direction of the Washington Legislature, Ecology issued a new one year permit in August 2012 that carried

forward most of the 2007-2012 Permit requirements and added electronic data transfer requirements. Ecology made the decision to extend this Permit with “minor changes” because it was required by the Legislature to provide an administrative extension of its Phase II Municipal Stormwater Permit.

At the same time, Ecology issued another Permit to Pierce County and other jurisdictions with an effective date of August 2013. Thus, Pierce County and other jurisdictions were subject to three different NPDES municipal stormwater permits in the one year period of July 2012 to August 2012! No wonder citizens can get confused about what is happening with municipal stormwater. Part of our intent writing this report is to clear up some of the confusion for citizens by getting specific on what we are doing about it.

The Permit affects the County in a number of its roles.

1. As the local land use authority for the unincorporated area, the County must have appropriate codes, regulations, enforcement, and education capacity to reduce water-polluting practices and to increase or promote practices that protect water quality.
2. As a landowner and property manager, the County must ensure that its own practices meet regulatory standards.
3. As a local government, the County must implement a monitoring program that measures stormwater pollutants and the effectiveness of commonly used practices. The County must also assess the appropriateness of the stormwater management practices for the components of the Stormwater Program to determine their effectiveness, and identify necessary changes.
4. As a regional government, the County must work in coordination with other municipalities, and ensure the coordination and cooperation between the various departments within the County to achieve compliance with permit requirements.

Various agencies within the County government have been identified as having significant roles in implementing different sections of the 2013 Stormwater Program.

Pierce County’s Public Works and Utilities Department, Surface Water Management Division (SWM), is charged with coordinating the Stormwater Program and annual reporting. SWM also manages the coordination, public involvement, maintenance and source control inspections, manual equivalency, structural stormwater control, and public education portions of the SWMP. SWM also has a significant role in the County’s response to illicit discharges, training, and operations and maintenance programs. Finally, SWM maintains and operates over 400 public stormwater ponds and associated conveyance systems as well as a rock quarry.

Several Pierce County divisions manage and develop properties and facilities that are covered under the Permit. These divisions include Solid Waste Division, Road Operations Division, Ferries and Airports Division, Facilities Management Department, and Parks and Recreation Division. Drainage facilities on any lands owned by these Pierce County Divisions must be mapped, designed, and maintained in a manner consistent with permit requirements, and Pierce

County's source control practices for pollutant-generating activities must be used. Some staff training requirements also apply. The Permit also requires Stormwater Pollution Prevention Plans to be prepared for applicable facilities.

Finally, the County's Planning and Land Services Department is responsible for ensuring the equivalent manual requirements are applied to new development and re-development sites through inspections and permitting. For the County, this action includes not just the Stormwater Management and Site Development Manual and Stormwater Pollution Prevention manuals but also related codes, which are applied to new development and re-development sites.

### **3. Organization of 2013 Stormwater Management Program.**

The 2013 Stormwater Management Program is organized under the following headings, most of which refer to specific sections of the County's NPDES Phase I Municipal Stormwater Permit:

- Goals for 2013
- Legal Authority
- Mapping
- Intra-governmental Coordination
- Public Involvement
- Control of runoff from new development, redevelopment and construction sites
- Structural Stormwater Controls
- Source Control Program for Existing Development
- Illicit Connections and Illicit Discharges Detection and Elimination
- Operation and Maintenance Program
- Education and Outreach Program
- Monitoring Program
- Water Clean Up Plans (TMDLs)
- Raise the Grade
- Watershed Health Website

## 4. Goals for 2013.

The goals of Pierce County's 2013 Stormwater Management Program are:

- A. Continue full compliance with the current Permit.
- B. Prepare for the next Permit that goes into effect in August of this year.
- C. Work for federal and state funding to be prioritized for stormwater program implementation
- D. Continue successful programs and enhance other programs identified in a 2012 EPA Audit of Pierce County's Stormwater Program
- E. Continue to use parts of the NPDES Phase I Stormwater Permit to further Pierce County's watershed health improvement goals

### A. Continued full compliance with existing Permit.

A major goal of Pierce County's 2013 Stormwater Management Program is to remain in compliance with all of the 100-plus requirements of the NPDES Phase I Municipal Stormwater Permit so that negative stormwater impacts are reduced to Pierce County's water resources.

Pierce County fully implemented all requirements of the NPDES Stormwater Permit since it was first issued in 1995 for some 13 years through 2008. At that time, the Department of Ecology issued a new Permit to Pierce County. That new Permit contained 12 years of scientific, technical, and legal advances in the realm of municipal stormwater. Not surprisingly, it came with a huge additional cost (more than \$3m per year) to County surface water management utility fee rate payers and tax payers.

In fact, a County Council Performance Audit Committee Report in 2008 concluded that the new permit added so many new and more responsibilities to the County that it would require 29 new staff to meet them all. Most of these new duties relate to operations and maintenance of County-owned stormwater facilities, inspections and technical assistance of private facilities, site development reviews and regulation, stormwater monitoring, and education and outreach. Late that year and continuing into 2009 and 2010, the local and regional economies decline in a financial crisis still lingering and adversely affecting citizens and business throughout the County, region and country as a whole.

Nonetheless, in 2010, the County Council acted to fund the new Permit requirements. Thus, 2011 was the first year Pierce County was fully resourced to meet all its legal obligations under the new Permit and positioned the County to make major strides in protecting water resources from negative impacts of stormwater.

In 2012, Pierce County re-hired the consulting firm that did the cost of compliance analysis for the County Council in 2009 to prepare an updated cost of compliance report of the Department of Ecology's new 2013 Stormwater Permit. The results of that analysis, once again, conclude that an additional \$3m per year is needed to meet the terms of the new Permit. Pierce County will continue and build upon these efforts in 2013.

Some of the areas of focus for 2013 are as follows:

- Stormwater Management Facility Inspections (County-owned facilities) and update facility assessments
- Continued implementation of the Illicit Discharge Discovery and Elimination program. Conduct IDDE sweeps in the Deer Creek, Salmon Creek and Alderton Creek drainage basins.
- Complete all submitted Site Development Reviews
- Complete all Site Development Inspections and proceed with enforcement as needed.
- Conduct Stormwater Outreach and Education workshops on yard care and landscaping; watershed health; site development and low impact development; and home based businesses and stormwater.
- Complete Stormwater Monitoring programs required by the 2007 permit.
- Publish the 2012 Watershed Health Report Card.
- Continue existing GPS/GIS mapping programs.
- Track, manage and document continued compliance with the County's Stormwater Permit.
- Manage Stormwater Facilities Inspection and Monitoring data base software programs
- Negotiate terms for cleanup plan for Clarks Creek Dissolved Oxygen TMDL.
- Continue "Raise the Grade" targeted focus in Swan creek, Minter creek, Horn creek and Spanaway Lake watersheds. This program received recognition from the [National Association of Clean Water Agencies](#) with the 2013 National Environmental Achievement Award for Innovation in Operations.

- Complete construction on a vector waste handling facility at the Central Maintenance Facility.
- Complete retrofit of drywells in the Chamber/Clover Creek basin.

B. Prepare for next Permit.

The second major goal for the County's 2013 Stormwater Management Program is to prepare for changes to the Permit that go into effect August 1, 2013.

The 2013 Permit cost of compliance, an additional \$3m per year, continues to put a significant constraint on Pierce County and other jurisdiction. Most jurisdictions have been forced to increase local stormwater fees to meet these new requirements. Pierce County is attempting to meet the new requirements through a variety of means. 2014 appears to be a major challenge unless the State or Federal governments provide local governments relief.

C. Work for federal and state funding to be prioritized

Another major goal of Pierce County's 2013 Stormwater Management Program is to secure state and federal funding to help pay for programs to reduce the negative effects of municipal stormwater. In 2010, the Puget Sound Partnership estimated costs of retrofitting existing stormwater facilities in Puget Sound to be between \$3 Billion to \$16 Billion (*Task 1: Urban Stormwater Runoff Preliminary Needs Assessment, Puget Sound Partnership*). It also estimated the cost of implementing existing NPDES Municipal Stormwater Permits to be approximately \$250 Million a year. Current funding levels are approximately \$160 Million to \$180 Million a year for implementation of existing NPDES Stormwater Permits, with over 90% of that being funded by local governments, including Pierce County. Retrofitting funding in the last few years being made available through state grants but have not been requested by Department of Ecology or have been included in the current Governor's budget. This is particularly unsettling since the Legislature has established the goal of a healthy Puget Sound by 2020. That is impossible without a major state and federal contribution to funding local stormwater management programs.

Since 2009 Pierce County has worked to increase the federal and state proportionate share of addressing municipal stormwater to help fill these gaps for operational and retrofitting costs. Pierce County will continue to work towards receiving additional federal and state funding in 2013 in to reduce the negative impacts of municipal stormwater on the State's water resources.

D. Continue successful programs and enhance other programs identified in a 2012 EPA Audit of Pierce County's Stormwater Program.

In 2012, Pierce County and other Phase I Stormwater communities participated in EPA's national initiative to audit certain large jurisdictions' stormwater programs. The audit was a wide ranging, comprehensive and complete review of the County's Stormwater Program. That review found numerous County programs to be well-functioning, including our illicit discharge

response program; our strategic and tactical approaches for planning and integrating Permit requirements; our fully integrated and extensive GIS and mapping functions; and our technical assistance programs for homeowners' associations stormwater management facilities. The EPA team also made some technical and minor suggestions to improve our Ecology-supported Stormwater Pollution Prevention Plans, such as adding additional paragraphs to describe onsite activities, and some maintenance actions. In 2013, Pierce County will continue to implement the programs the audit found to be successful and has already implemented maintenance and Pollution Prevention Plan revisions.

#### E. Continue to use parts of the NPDES Phase I Stormwater Permit to further Pierce County's watershed health improvement goals

Since 2008, Pierce County has reduced significant noncompliance of stormwater facilities by over 50% and has helped improve overall water quality with its partners by 10%. Our "Raise the Grade" approach to watershed management uses both Permit and non-Permit actions to achieve on the ground improvements. This program was awarded the 2013 National Environmental Achievement Award for Innovation in Operations by the National Association of Clean Water Agencies. In 2013, Pierce County will continue this program.

### **5. Legal authority.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have legal authority by way of codes and regulations to control discharges into and out of the County's stormwater drainage system, control and eliminate illicit discharges and spills, and to regulate site development equivalent to state standards.

In 2011, Pierce County adopted several technical amendments to its Illicit Stormwater Discharge Ordinance (PCC 11.05) to improve its effectiveness, streamline its processes, and to make it more consistent with other existing County enforcement laws. In 2012, the Pierce County Executive issued an Executive Order (EO 2012-1, Stormwater Management), that emphasized and clarified the County's response to reducing the negative effects of stormwater and establishing a central NPDES training functions.

### **6. Mapping.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to map and document its drainage system and interconnections with other municipalities, in particular, paying attention on an ongoing basis to outfalls and other system components. Pierce County is in full compliance with this requirement. In 2013, Pierce County will continue its mapping on an ongoing basis. Additionally, Pierce County has established a "GIS Team" whose function is to correct drainage feature location errors found by County water quality inspectors and to verify newly-permitted systems. In 2011 the County developed a digital link within the Public GIS showing watershed health of Pierce County. This link provides access through GIS to water quality data and results of management strategies throughout the County. Further enhancements to the Watershed Health Portal are planned for 2013.

## **7. Inter- and intra-governmental coordination.**

The NPDES Phase I Municipal Stormwater Permit requires coordination mechanisms among Pierce County departments to eliminate barriers to compliance with the Permit. The Permit has many requirements that apply to numerous County departments, which do not have stormwater management as a core business and may think differently about how the requirement applies to them.

The NPDES Permit also requires coordination mechanisms between Pierce County and other local governments responsible for stormwater management. This requirement is aimed at clarifying roles and responsibilities for the control of pollutants between interconnected drainage systems and for actions on discharges to shared watersheds.

In 2012, the Pierce County Executive issued Executive Order 2012-1 which strengthens the stormwater management program and emphasizes cross-departmental responsibilities. The Order clarifies that Surface Water Management is the policy and administrative lead for implementation of the Municipal Stormwater NPDES Permit. In 2013 Pierce County SWM will continue its internal technical assistance function for NPDES permit compliance by coordinating and conducting inspections of County-owned facilities, conducting staff trainings on NPDES stormwater, and by conducting periodic department-level director briefings on County compliance activities.

Pierce County has inter-agency memoranda of understandings with nine jurisdictions it prepared and solicited in 2010 clarifying expectations of roles concerning interconnections of drainage systems. In 2013, the County will continue to monitor and implement those agreements.

For watershed-based coordination, Pierce County will continue to provide staff and financial support to the Puyallup River, Chambers-Clover, and Key Peninsula/Gig Harbor/Islands watershed councils and participate in the Nisqually River Council, all of which have significant municipal and affected stakeholders' participation.

Pierce County will also continue to participate on the South Sound NPDES Stormwater Permit Coordinators' Committee; the Puget Sound Partnership's Ecosystem Coordination Board; the Alliance for a Health South Sound; the municipal caucus of the Stormwater Workgroup; and with other stakeholder and municipal organizations.

## **8. Public involvement.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to provide public involvement opportunities in this Program and other Permit-required submittals.

In 2013, Pierce County has given, and will continue to give, specific and detailed briefing on its water quality workplan for 2013 to the four watershed councils covering all of Pierce County and to the County's Storm and Surface Water Advisory Board (SWAB). It has also posted this Program on its webpage and has invited public commentary on managing municipal stormwater in Pierce County. Pierce County has furthered public involvement on its workplan by inviting

and scoping several public initiatives with watershed council participation, including Home Owners' Associations workshops on maintaining private stormwater systems and outreach activities including native plant landscaping.

## **9. Control of runoff from new development, redevelopment and construction sites.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to use drainage design and source control rules equal to those in Ecology's 2005 Stormwater Management Manual for Western Washington and to meet standards for staff training and inspections. Under the Permit, all County development projects must comply with the County's Site Development Manual which has been approved by the State as "equivalent" to the Ecology manual. The Permit also requires Pierce County's site development program to allow for Low Impact Development actions and techniques.

In 2013, Pierce County will continue its site plan reviews and require site plans to meet the design standards contained in its approved Site Development Manual. Because the number of site developments is strongly linked to the health of the local and regional economy, Pierce County can only estimate that site plan reviews for 2013 will be in the 2000 to 2500 range. Similarly, the number of site inspections and enforcement actions are tied to economic activity and can only be roughly estimated. That said, we assume the number of site inspections of sites with high sediment transport potential to be between 50 and 200; the number of permitted development sites to be between 2500 and 3500; the number of development site inspections to be between 2500 and 3000 and its associated number of enforcement actions between 120 and 200; and the number of inspections of completed construction sites to be between 1500 and 1800 and its associated enforcement actions between 500 and 700.

Additionally in 2013, Pierce County will conduct several training modules for site development reviewers, inspectors, and development community members and will continue to participate and support site development activities that use Low Impact Development (LID). Pierce County will also begin design on public infrastructure to retrofit and construct LID in the Clover Creek Basin, at Spanaway Lake Park and will continue to participate on the Department of Ecology's LID Implementation and Policy Committees.

Also in 2013 Pierce County will begin the process for updating its Site Development Manual to meet new requirements in the WADOE's 2012 Stormwater Management Manual for Western Washington. This permit requirement is due June 30, 2015 under the 2013-2018 Permit and is expected to take two years to update.

## **10. Structural Stormwater Controls.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to construct structural stormwater controls to prevent or reduce impacts to waters of the state.

In 2013, Pierce County will continue to implement its Six Year Capital Facilities Plan, modified in 2012. This six-year plan includes projects aimed at reducing stormwater impacts from public

infrastructure, mitigating effects from increased flows, and for improving instream beneficial uses. In total, the 2012-2017 Capital Facilities Plan details over \$11.1 Million of projects planned for 2013. It involves property acquisition, scoping, design, permit attainment, and/or construction of the following projects:

**D191 Rody Creek Stream Restoration (\$1,075,000)**

The project is intended to reduce flooding from Rody Creek downstream of the Pioneer Road crossing. This creek location is in the alluvial fan area as the creek enters the valley floor. Past farming practices straightened Rody Creek to more of a ditch which was periodically dredged out to restore flow capacity. Rody Creek is a tributary to Clarks Creek and is a fish bearing stream. The restoration project is intended create a designed sediment trap and restore some meanders and sediment storage capacity into the creek floodplain. This will reduce flooding and allow habitat and spawning areas for salmon occupying the creek.

**D192 Goodnough Cr. Culvert/ Restoration (\$470,000)**

Replace multiple culverts under County roads along Goodnough Creek and restoration work near the mouth of the creek to remove fish passage barriers.

**D200 Larchmont Wetland Reserve (\$1,400,000)**

The Larchmont Wetland Reserve is a 16-acre project in the Chambers-Clover watershed (WRIA 12). This site is in the headwaters of the North Fork of Clover Creek. The North Fork currently flows through the site within deep, straight ditches. Runoff from roadside ditches contributes to the flow within these internal ditches. The project as proposed will decommission most of the ditches that cut through the property. Dams will be placed strategically within the ditches to encourage water to sheet flow over wetland areas. A new channel will be created to replace the system of straight-lined ditches. The channel will be designed to regularly overtop during winter flood events, thereby re-connecting floodplain wetlands with the stream. The new stream channel will be designed to provide more suitable aquatic habitat. Channels and ponds with different hydrologic regimes will be created, which will improve water quality and hydrologic functions by allowing water to flow more slowly through the site. This will also provide improved habitat for breeding native amphibians. Habitat structures, such as boulder piles, snags, and brush piles will be created from materials found on site.

**D209 Lower Clover Creek Fish Passage Project (\$250,000)**

Develop a design and construct a fish passage project at Shera's Falls. This project will be a joint project with the City of Lakewood. SWM would take the lead in the design with participation from Lakewood staff. Lakewood would likely administer the construction contract.

#### **D223 Ball Creek Culvert Restoration/Replacement (\$230,000)**

Replace or remove culverts on Ball creek from 106th St. E. to the outfall at the Puyallup River and restore creek near outfall where grade barrier presents fish passage barrier.

#### **D411 Woodland Creek Drainage Improvements (\$50,000)**

Project will look at additional detention areas necessary to reduce flooding near Woodland Ave. and 112th St. E. Downstream conveyance improvements will also be considered if necessary and won't impact Woodland Creek further north.

#### **D413 Clarks Creek Basin Stormwater Retrofits (\$564,000)**

This project will retrofit numerous areas in the Clarks Creek Basin, unincorporated Pierce County. The retrofits will consist of biofiltration, bioretention, infiltration, cartridge filtration, hydrodynamic separation systems, rain gardens, and detention with nested water quality treatment to achieve improved water quality conditions, including sediment, nutrient, bacteria and metals reduction in stormwater. The need for this project is due to the Clarks Creek Dissolved Oxygen TMDL and the possible use of a surrogate parameter such as stormwater flow volume or % impervious cover in the TMDL. Also the draft 2012 NPDES permit is requiring the County to have a stormwater retrofit program to address runoff from existing older development with no runoff controls.

#### **D415 Spanaway Lake Park Stormwater Retrofits (\$775,000)**

The proposed project involves retrofitting storm drain facilities at the parking areas and access road of Spanaway Lake Park, a regional recreational facility. The County will retrofit three separate outfalls that discharge to Spanaway Lake and an additional outfall discharging into Spanaway creek with Low Impact Development (LID) techniques and other water quality/quantity best management practices. The area contributing pollution to the outfalls is approximately 11.5 acres. Pollutants include fecal coliform bacteria, nutrients, and high temperatures. The project will be constructed in phases. The first phase for the most part will predesign the entire site. The first phase will also concentrate on retrofitting the most southerly (paved) and northerly parking areas (approximately 2 acres) with LID techniques for water quality and quantity control. Also a couple of small bioretention areas will be installed to reduce the amount of direct discharge to Spanaway Lake, until such time the entire Park is retrofitted.

#### **D450 Van Ogles Creek Restoration (\$50,000)**

Replant riparian corridor, install fencing to restrict livestock where needed, install structures to stabilize banks.

### **1405 South Fork Levee – Phase 1(\$3,000,000)**

This Setback levee location on the Puyallup River is just upstream of the confluence with the Carbon River. The project was the #1 ranked project on the recently completed Setback Levee Feasibility Study.

### **1406 & 1408 Fennel Creek Revetment Improvement – Phase 1(\$254,000)**

Planting and some minor grading work as the first phase of a project to restore some forest cover in the riparian corridor between the Puyallup River and Fennel Creek. The planting will be done with a Terry Husseman Grant for \$30k. Removal of portions of the Revetment along the Puyallup to reconnect the floodplain and grading work along Fennel Creek will be part of a Salmon Recovery Funding Board grant that was applied for.

### **1400 Puyallup River/ Orville Rd Revetment and Riparian Habitat Restoration (\$3,000,000)**

Project is on the left bank of the Puyallup River upstream of where Kapowsin Creek enters the river. The project purpose is to protect Orville Road from being undermined by the River and at the same time allow the river more migration area. Pierce County already owns the land between the river and Orville Road.

In 2010 and 2011 Pierce County received funding through Washington Department of Ecology Grants that will enable it to construct additional projects aimed at reducing stormwater impacts from public infrastructure, mitigating effects from increased flows, and for improving instream beneficial uses. In total these projects will account for approximately \$3.4 m in additional investment in scoping, design, permit attainment, and construction of the following projects: CMF Vactor Waste Station; Chambers/Clover Drywell Retrofits; Spanaway Park LID Retrofits; and the Spanaway Creek LID Retrofit. Construction on these projects will be completed this year.

Also in 2013, Pierce County will continue to seek state and federal grants for retrofitting projects and will work to continue to improve its retrofit screening protocols.

## **11. Source control program for existing development.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to reduce pollutants in runoff from existing development by applying operational and structural sources to control pollution.

In 2013, Pierce County will conduct over 200 source control inspections of “potential pollutant-generating sources” (commercial, large developments). These inspections will focus on implementing best management practices aimed at separating potential pollutant sources from exposure to stormwater water. In addition, Pierce County will conduct at least three workshops for home owners’ associations that include best management practices for source control.

Finally, in 2013, Pierce County will conduct approximately 1,500 additional inspections of existing development, focusing on operational and maintenance best practices of private and public stormwater management systems, but also using these inspections to provide source control technical assistance as needed.

## **12. Illicit connections and illicit discharges detection and elimination (IDDE).**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to detect, remove and prevent illicit connections and illicit discharges, including spills.

In 2011, Pierce County substantially increased its capacity to address these needs. In 2010, two additional IDDE Specialists were established at the County to be dedicated to this function. In 2011, the County adjusted its existing Illicit Stormwater Discharge Ordinance (PCC 11.05) to improve its effectiveness and efficiency and to make it more consistent with other County enforcement codes. Additionally, the County deployed a new standard operating procedure that governs referrals from water quality inspectors of recalcitrant and persistent illicit discharges. Also in 2011, the County updated and converted its water quality complaint system to a Request for Action data base to better track and evaluate progress in water quality responses. The County also updated its spill response procedure in 2011 to better clarify roles and responsibilities.

In 2013 Pierce County will work to strategically deploy its IDDE resources where appropriate in response to the development of total maximum daily loads in the Clarks Creek, South Prairie Creek and Puyallup Watersheds and the “Raise the Grade” initiative in the Minter creek, Spanaway Lake, Swan Creek and Horn Creek watersheds. Pierce County estimates it will conduct approximately 125 IDDE investigations in 2012.

## **13. Operation and maintenance program.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program to regulate maintenance activities and to conduct maintenance activities to prevent and reduce stormwater impacts. This program applies to the County’s oversight of private development and oversight of County facilities.

In 2013, Pierce County will conduct approximately 500 maintenance inspections of County-owned stormwater management facilities. Pierce County will also complete facility assessments of Facility Management Division, Public Development Division, and SWM Maintenance Section and will update 2011 facility assessments of Parks and Recreation, Solid Waste Services, and Ferries and Airports division. These assessments determine priorities and timing of maintenance needs at County-owned facilities.

In 2013, Pierce County will conduct over 1,000 maintenance and operations inspections of privately-owned stormwater management facilities. Pierce County will also update Stormwater Pollution Prevention Plans for all facilities required to have them under the Permit . Pierce County will also conduct staff training for maintenance and operations staff in 2013 as it did in previous years. 2010 and 2011.

In 2011 Pierce County completed the inspections of over 20,000 stormwater catch basins within the roads right-of way both to identify facilities needing maintenance and to provide baseline data for the drainage features asset management system. Pierce County uses the circuit based approach method for our NPDES inspections. This approach is founded upon the fundamental principles of asset management and years of practical experience maintaining and operating public infrastructure. Pierce County has modified and expanded baseline asset management criteria to meet permit requirements in order to achieve and sustain compliance. The inspection includes verifying the attribute information for each feature is correct and make changes where needed as well as getting an operation and structural condition of the feature. In 2013 Pierce County will inspect catch basins using a circuit based approach to identify systems needing maintenance and add to the data set for this facility type. The goal of our inspection and maintenance program is to insure we continue to maintain our systems for maximum water quality benefit at the most cost effective schedule.

#### **14. Education and outreach program.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to have a program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the County.

In 2013, Pierce County will continue to educate County Council Members and other elected officials as to the benefits, liabilities, and costs of implementing the NPDES Phase I Municipal Stormwater Permit. This education will be associated with permit reissuance concerns and annual budget development and will be in the form of briefings, and staff reports. Also in 2013, Pierce County will continue to sponsor and participate in public outreach campaigns to provide outreach on yard care techniques, pesticides and fertilizers, mobile businesses, and Low Impact Development. Pierce County will also continue a storm drain marking campaign initiated in cooperation with watershed councils in 2013. These campaigns will involve printed materials and public workshops. Pierce County will also update and prepare for another round of site development plan outreach workshops with the development community and site plan reviewers as the targeted audience. That workshop was developed in 2011 and will be conducted in early 2013.

Pierce County will also continue implement of its Surface Water Management Public Education and Outreach Plan in 2013 that contains many additional outreach initiatives such as shellfish water quality, public events, publications, and displays.

#### **15. Water cleanup plans (Total Maximum Daily Loads).**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to implement completed Total Maximum Daily Loads (TMDLs). In 2013, Pierce County will continue to review and inspect site development activities in the South Prairie Creek area as part of the South Prairie Creek Fecal Coliform TMDL. We will also continue to work with Department of Ecology, Tacoma/Pierce County Health Department, and Pierce Conservation District in tracking and evaluating progress towards water quality standards and will investigate areas as appropriate for bacterial sources impacting the County's drainage system.

Also in 2013, Pierce County will finalize the IDDE sweep in the Swan Creek Basin and conduct IDDE sweeps in the Alderton, Salmon and Deer Creek basins as part of the Puyallup Watershed Fecal Coliform TMDL.

Finally in 2013, Pierce County will continue to seek agreement on a straight to implementation restoration program for Clarks Creek in lieu of using non-pollutants such as stormwater flow as surrogate measures for wasteload allocations (WLAs) which have been found to be illegal in federal court.

## **16. Monitoring Program.**

The NPDES Phase I Municipal Stormwater Permit requires Pierce County to implement a stormwater monitoring program to characterize stormwater; targeted stormwater management program effectiveness; and best management practices evaluation.

In 2011, Pierce County completed Quality Assurance Project Plans for program effectiveness, flow reduction, and BMP effectiveness monitoring. Pierce County will continue to take the required samples from each rain event and have them sent to laboratories for analysis. The County will complete full water year cycle monitoring for these and for stormwater characterization.

Pierce County hired two additional monitoring staff in 2010 to support these monitoring efforts, one with specialty in GPS and GIS, and the other, a water quality scientist. Those additional resources are specifically targeted to spatial analysis of permit-required monitoring and analytical and laboratory controls of permit-required stormwater monitoring data.

In 2013, Pierce County will continue stormwater characterization monitoring at Canyon Road Outfall, Lake Sylvia Outfall, and Collinswood Outfall. Pierce County will continue BMP effectiveness monitoring at Canyon Road, Sunrise Pond, Crimson Pond, and Magnolia Grove sites. Pierce County will continue flow reduction monitoring at Sprinker Recreation Center Low Impact Development and will begin the transition to the Puget Sound Regional Stormwater Monitoring Program. Finally, in 2013, Pierce County will complete program effectiveness monitoring in phase two of a study to assess the relationship of biologic integrity index and fish carcass placement.

Finally, throughout 2013, Pierce County will continue to maintain 65 water quality index sites for monthly monitoring, 12 flow sites, numerous ground water wells, 16 weather stations, shellfish districts monitoring, benthic index of biological integrity (BIBI), and salmon recovery adaptive management monitoring. Pierce County will also publish its annual Water Quality Report for 2012.

## **17. Raise the Grade.**

In 2012, Pierce County Public Works and Utilities, Surface Water Management (SWM), initiated an effort aimed at improving the surface water quality of Minter Creek, Horn Creek Swan Creek and Spanaway Lake, using NPDES Stormwater Permit and local resources.

Since 2008, Surface Water Management (SWM) has been tracking and reporting the water quality status of Pierce County waterbodies in an annual Watershed Health Report Card. Streams and lakes are graded on a scale of “F” (failing) to “A” (excellent) based on an index of water quality and biological indicators. Monitoring data and the Report Card are available on the web at [www.piercecountywa.org/watershedhealthdata](http://www.piercecountywa.org/watershedhealthdata).

Also, SWM routinely inspects stormwater facilities for potential sources of pollution and rates their status of compliance with stormwater requirements. Facilities are graded on a scale of “1” (significant noncompliance) to “5” (exceed requirements).

The goal of the “Raise the Grade” initiative is to improve water quality in Minter Creek, Horn Creek, Swan Creek and Spanaway Lake so that their existing grades and the compliance ratings of stormwater management facilities contributing pollutants to those waterbodies, are improved (“raised”).

In October 2011, SWM analyzed water quality and watershed health data from each of four watersheds in the County (Puyallup, Chambers/Clover, KGI, and Nisqually). A water body was selected from each watershed based on its likelihood for improvement. Criteria considered included: water quality status and trends, pollutant source identification, placement in the watershed, and stakeholder interest.

2010 grades in Pierce County’s Annual Report Card for the Raise the Grade waterbodies are used as the baseline for evaluating progress:

- Minter Creek (KGI Watershed) is currently (2011) graded a C-
- Horn Creek (Nisqually Watershed) is currently (2011) graded a C+
- Swan Creek (Puyallup Watershed) is currently (2011) graded a C
- Spanaway Lake (Chambers/Clover Watershed) is currently (2010) graded a C+

## **18. Watershed Health Website.**

In 2011, the Pierce County Public Works and Utilities Department released its Watershed Health Website ([www.piercecountywa.org/watershedhealthdata/](http://www.piercecountywa.org/watershedhealthdata/)). This website allows citizens to access information regarding the quality of Pierce County’s local watersheds and streams. You can view monitoring data using the interactive map that shows the location of streams and links to results collected since the year 2000. The website is updated automatically as new data is collected.

Features of the website include:

- An interactive map provided by Pierce County Geographic Information Systems (GIS).
- The ability to query the map, identifying streams and providing access to monitoring data.

- The location of streams monitored by Pierce County.
- A link to water quality summaries for each stream monitored by Pierce County dating back to 2000.
- A link to the Puget Sound Stream Benthos database. This on-line database houses the macro-invertebrate (bugs living in streams) scores for streams throughout the Puget Sound Region.
- The “grade” of some streams, from the annual Pierce County Surface Water Health Report Card.
- A link to download the annual Pierce County Surface Water Health Report Card.
- Downloadable (in Excel or PDF format) monthly water quality data collected for each stream, including: Dissolved Oxygen (mg/L), Ph, Fecal Coliform (FCU/100 ml), Nitrogen (TKN mg/L), Total Suspended Solids (mg/L), Conductivity, Total Phosphorus (mg/L), Turbidity, and Temperature (°Celsius).

Pierce County intends to increase the functionality of the website in 2013 by incorporating access to other forms of watershed health monitoring data.