

# WELL FIELD PROTECTION PROGRAM OREGON DEQ CERTIFICATION

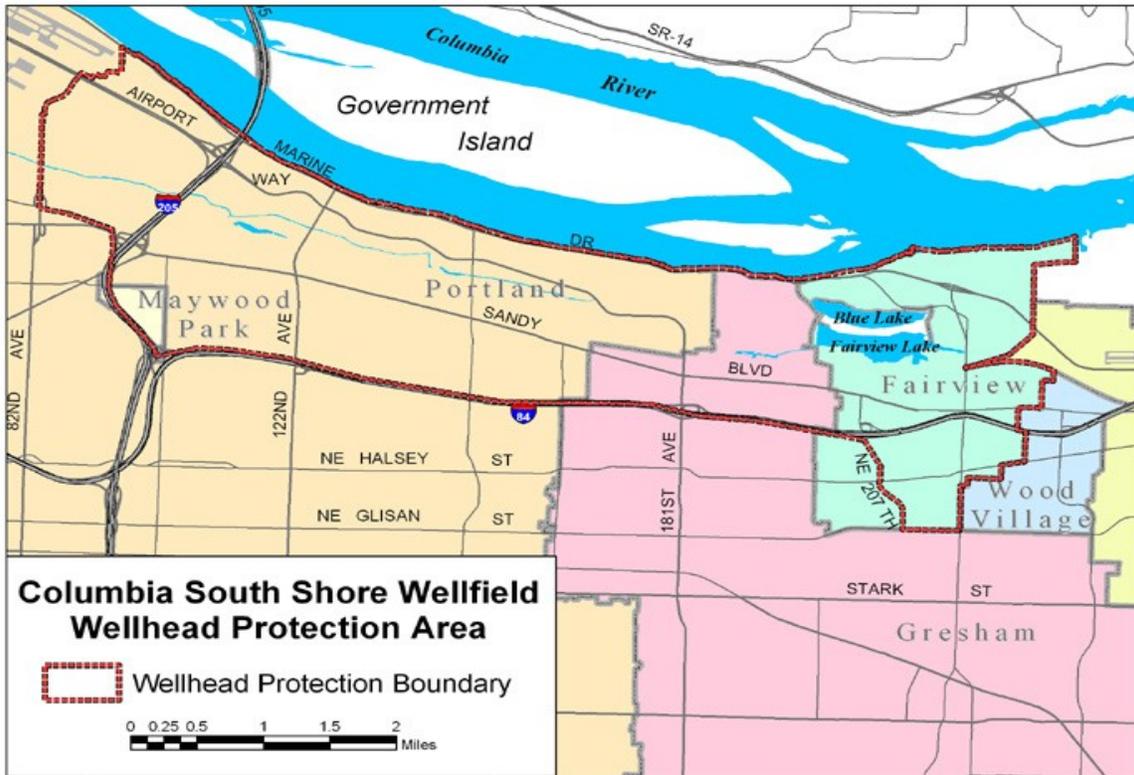
## COLUMBIA SOUTH SHORE WELL FIELD

Portland Water Bureau

Portland, Oregon

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## Section 4 – Management of Potential Contaminant Sources

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The *Columbia South Shore Well Field Wellhead Protection Area Reference Manual*, (Appendix E) describes in detail the required and recommended management actions to protect groundwater. Developed in partnership with the business community during the Coordinating Committee planning process, the manual applies to industrial and commercial businesses. The manual and supporting ordinances were adopted in Portland, Gresham, and Fairview and went into effect in Portland in July 2003. Requirements have been phased in over time to allow businesses to plan and budget for required improvements. The chosen management approach does not target specific locations (e.g., businesses within the one-year time-of-travel); rather, it phased in the requirements over a five-year period applied uniformly over the entire (i.e. 30-year time-of-travel) area and uses facility inspections (performed every two years) and the amount of chemicals used and stored as the primary protection mechanisms for higher-risk land use activities. The uniform application of the new requirements coupled with existing inspection activities were very important to the stakeholders in the business community.

While there is no regulatory component for residential uses, a vital element of the program is outreach and education specifically targeted to residential users and non-regulated agriculture to reduce the likelihood of impacts from “non-point source” pollutants. The outreach methods are described later in this section. Approximately \$280,000 is budgeted by the city each year to implement this program. The \$280,000 includes inspections, enforcement, program management, outreach, education and technical assistance. The cities of Gresham and Fairview also conduct residential and business education programs as described in their annual reports for their National Pollutant Discharge Elimination System Permits.

### **Management of Industrial and Commercial Sources of Contamination**

Industrial and commercial businesses are regulated based on the quantity and type of chemicals used at the site. Requirements range from structural improvements to operational changes. The program was heavily modeled on the Uniform Fire Code (UFC) and the Stormwater Management Manual. The UFC covers handling and containment of chemicals. The Stormwater Manual provides structural and non-structural solutions that focus on minimizing risks of spills and limiting the potential for spilled materials to reach surface water and groundwater through stormwater runoff or collection systems. This approach was taken so that new requirements would be compatible with other existing regulatory approaches. Fire Bureau

inspectors conduct the inspections and provide enforcement for this program in conjunction with routine fire inspections.

Unlike the previous protection program, no businesses or chemicals are prohibited in the protection area. Instead, the quantities and types of chemicals used dictate the requirements and timelines to comply. This approach was considered more equitable to businesses. As mentioned, the program was developed with a large stakeholder group—the Coordinating Committee. A business and industry technical group worked with other stakeholders to ensure that the regulatory program requirements would

- maximize risk reduction for investments made
- avoid duplication of or conflict with other regulations
- be realistic and practical

A summary of the regulatory program requirements is included below for the four basic functional areas in a typical business:

**Indoor Storage** – Meet UFC spill control and (secondary) containment requirements and provide impermeable surfaces. Floor drains cannot be connected to storm drains or surface water.

**Outdoor Storage**– Apply best management practices (BMPs) on outdoor storage of liquid hazardous materials in containers or tanks and storage of solid hazardous materials. Requirements also include paving storage areas, providing spill containment, isolating drainage, and providing required signs.

**Load/Unload Areas** – Apply BMPs or meet additional requirements in Portland requiring paving loading and unloading areas and providing spill containment and signs. If a loading dock is uncovered, inspections will be conducted.

**Transportation Routes** – All transportation routes in public and private rights-of-way must be paved (except rail) and spill containment must be provided. Some exceptions to the regulations in Portland include some local streets in residentially zoned areas. The bureau has been working with Gresham, Fairview, and the Portland Department of Transportation and BES on street designs that help manage stormwater and protect groundwater.

### Implementation

Program funding supports two key efforts forming the foundation for program implementation:

- Education and technical assistance activities
- Reporting, inspection, and enforcement activities

### Education and Technical Assistance

Education and technical assistance are keys to helping businesses understand and successfully comply with both regulatory requirements and best management practices. The bureau has a five-year contract with the CCA through 2008 to provide services to the regulated community.<sup>1</sup> The bureau has committed funds to continue technical assistance and outreach to the business community into the future and is in the process of pursuing another 5-year contract for technical assistance and outreach.

The CCA represents business, industry, and landowner interests in the Columbia Corridor and is well-positioned to provide outreach, education, and technical assistance to affected businesses.<sup>2</sup> The CCA and its membership were actively involved in the stakeholder process and development of the program. Portland, Gresham and Fairview all support websites with groundwater protection information.

**Outreach and education** – For the duration of the contract, the CCA and the bureau have prepared and distributed educational materials, decision-support tools and fact sheets, and conducted workshops to help businesses comply with requirements.

**Technical assistance** – Technical assistance includes one-on-one consultations to assist businesses in evaluating compliance requirements, and identifying and evaluating devices, equipment, and structures that will satisfy requirements. CCA has also provided free spill kits, signs, secondary containment totes, and storm drain covers to help regulated businesses meet requirements. CCA maintains a web page as a resource for businesses on the CSSW WPP, [www.columbiacorridor.org/wellfield](http://www.columbiacorridor.org/wellfield). To date, four workshops have been conducted on reporting requirements and how to meet program requirements.

### Reporting, Inspection, and Enforcement

The business and industry participants in the process recommended that reporting, inspection, and enforcement approaches be made compatible with other regulatory requirements to the greatest degree feasible. The degree of overlap in requirements between the UFC and the proposed CSSW WPP provided an excellent opportunity to achieve this desired outcome. Most businesses are familiar with UFC requirements and the inspection and enforcement approaches used by fire departments to ensure that code requirements are met. The basic approaches identified in the UFC for dealing with hazardous materials used or stored at a site apply very well to the

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<sup>1</sup> The Columbia Corridor stretches along the south shore of the Columbia River, from the Willamette River in the west to the Sandy River in the east.

<sup>2</sup>For more information on CCA, visit [www.columbiacorridor.org](http://www.columbiacorridor.org).

purposes identified in the wellhead protection program, although the threshold quantities of some regulated chemicals are lower for the UFC than for the CSSW WPP. Required reporting to the State Fire Marshal, both in form and content, provides most of the information needed by the Water Bureau to assess and monitor conditions in the wellhead protection area.

In summary, a facility or applicant must submit a Hazardous Materials Inventory Form each year in addition to a Facility Information Report that shows locations of functional areas, hazardous materials or fuels, transportation routes, storm drain and drainage area boundaries, dry wells or sumps used for disposal of storm or wastewater, control valves and spill containment kits. The preparation of an Operations and Maintenance Plan is recommended.

Portland Fire and Rescue is responsible for carrying out inspections of all businesses in Portland in the well field every two years. Gresham Fire and Emergency Services conducts inspections in Gresham and Fairview. An estimated 1,300 businesses (some with multiple inspection sites) are in the Portland portion of the protection area. Of those 1,300 businesses, approximately 130 are regulated under this program. There are about 50 regulated businesses in Gresham and Fairview. The two-year inspection schedule ensures that new and existing businesses have a regular inspection and that any new businesses are captured in the inspection process within a reasonable timeframe. Portland Fire and Rescue, Gresham, and Fairview are also reviewing permits for new construction and improvements to ensure that, as new development and redevelopment occurs, it is in compliance with the protection area requirements.

### **Management of Non-Regulated Sources of Contamination**

The regulatory portion of the CSSW WPP focuses on industrial and commercial activity. However, a tremendous amount of work is being done to address and prevent potential contamination from non-regulated activities identified in the inventory of potential contaminant sources. Management areas are highlighted below:

#### Unsewered Areas

The only unsewered portion of the well field is Maywood Park. Maywood Park is outside of the 30-year time of travel boundary and also outside of the jurisdiction of the City of Portland. The city of Maywood Park has no plans to construct a sewer system. Outreach to Maywood Park has been limited to a brochure mailing and general population outreach and events. In the next year the Water Bureau will contact Maywood Park to see if the bureau can participate in a homeowner meeting to further educate residents about groundwater protection, specifically what residents can do to prevent groundwater contamination from their septic system.

## Residential Uses

In Portland, the majority of residential uses are concentrated south of Sandy Boulevard. Additional residential areas are located in Fairview.

The bureau has a five-year contract with the CSWC for outreach and education to residents and non-regulated agriculture. The city's CSWC contract ends in June 2008. The bureau anticipates continuing a contractual relationship with CSWC for an additional five years. Additionally, we coordinate with Gresham and Fairview on outreach and education efforts.

The brochure in Appendix I kicked-off the Water Bureau's educational effort and advertised a calendar of events, including a treasure hunt (Adventure in the Well Field), bike ride, tour, and Groundwater 101 class. Future efforts include outreach to the agricultural community and Maywood Park.

Over the past five years the bureau and CSWC have planned and conducted the following activities to educate and encourage the local community to take actions to protect groundwater. Events are on-going:

- Annual Adventure in the Well Field (now called Aquifer Adventure) – Family event with hands on activities about groundwater and waste minimization with a pirate treasure hunt theme. This event kicked off the start of the Protection Program in 2003 with around 100 attendees. In 2007 the bureau had over 400 attendees and intends to continue this event into the future. Family activities include building edible aquifers, providing an aquifer obstacle course, conducting the All the Water of the World game, a canoe trip, and a water conservation activity.
- Annual Cycle the Well Field Tour – This annual event, started in 2003, takes an average of 30 bikers on a 16-mile ride around the Columbia South Shore with stops along the way to provide an opportunity to talk about the role of groundwater and what people can do to protect it.
- Groundwater 101 – This class has been offered for almost 10 years. It is an introductory class on the basics of groundwater, hydrology, geology, and Portland's well field. Classes are held each November and typically attract 30–40 interested citizens. In 2006 the bureau also offered a more advanced class called Groundwater 201.
- Water System Tours – Tours of the Bull Run watershed and the well field are led by Water Bureau staff and are ongoing.
- Brochure – A colorful and informative brochure with calendar of events was sent to every address in the wellhead protection area, including Fairview, Gresham and Maywood Park. The brochure highlights the role and importance of groundwater and has an illustrated stand-alone poster showing good homeowner practices and

practical things people can do to protect groundwater. This brochure is distributed at all of the bureau's events. The bureau is planning a third printing of the brochure.

- Groundwater Protection Signs – In 2004, the city installed street signs along major roads in the wellhead protection area (see Appendix I for example). The signs alert drivers that they are in a groundwater protection area and a number is provided to report spills.
- Household Hazardous Waste Collection Days – The bureau has worked with Metro to locate and schedule collection days in the well field for residents to safely discard hazardous materials. So far two collection events have been held in the protection area attracting hundreds of people.
- Web site – The Water Bureau web site, [www.portlandonline.com/water](http://www.portlandonline.com/water), has information on the CSSW WPP and actions people can take to protect groundwater. Gresham and Fairview also have information on the wellhead protection program at [www.ci.gresham.or.us/cleanrivers](http://www.ci.gresham.or.us/cleanrivers) and [www.ci.fairview.or.us/wellfield.protection.htm](http://www.ci.fairview.or.us/wellfield.protection.htm).
- Neighborhood meetings – CSWC meets annually with local neighborhood associations about the CSSW WPP and what neighborhoods can do to help protect groundwater.
- Columbia Slough Watershed Council Events – CSWC holds dozens of events every year, many in partnership with the Water Bureau and listed here. All events include some education about the well field and the protection program since it is a prominent resource in the watershed.
- Education in Schools
  - Water Bureau provides tours of the Bull Run watershed and the well field to schools and visits the classroom to conduct groundwater activities.
  - Slough School is a program of CSWC to educate students about the Slough. The Water Bureau, Gresham and Fairview provide financial support to Slough School to incorporate groundwater education into the curriculum. The Water Bureau collaborates with CSWC on curriculum and provides a groundwater model to use in the classroom. Support for this program will be ongoing to reach students and teachers at schools located in the watershed and protection area.
  - Clean Water Festival – The Water Bureau's groundwater staff has participated in the Clean Water Festival for the past three years. The Clean Water Festival is designed for 4<sup>th</sup> and 5<sup>th</sup> graders to learn about water science and watershed ecology. Staff use a hands-on groundwater model to educate kids about basic

groundwater principles and ways to protect water quality. Last year this event reached more than 1,000 students in the region.

- Future programs include additional events and outreach in Maywood Park, Fairview, Gresham, and Blue Lake Park.

The CSSW WPP brochure also references many of Metro’s resources that highlight safe alternatives to household hazardous materials, waste minimization and “green” landscaping practices. The bureau is also a member of the Regional Water Providers Consortium which produces and distributes water conservation materials specifically focused on outdoor use and healthy landscapes. A selection of outreach materials can be found in Appendix I.

#### Stormwater Collection and Discharge

The City of Portland manages stormwater discharges under one of two permits issued by ODEQ. Stormwater discharging to surface waters is managed under the National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit (MS4 NPDES), regulated under the Clean Water Act (CWA). Stormwater discharging to the ground is managed under the UIC Water Pollution Control Facilities Permit (WPCF) regulated under the Safe Drinking Water Act (SDWA).

**NPDES MS4 Permit** – ODEQ issued the city and its co-permittees, Port of Portland and Multnomah County, the first MS4 NPDES permit in 1995 and issued the second permit in July 2005. The MS4 NPDES stormwater permit is the primary regulatory vehicle for management of stormwater quantity and quality for discharges to surface waters. Although the permit requirements apply only to areas within the Urban Services Boundary that drain to the municipal separate storm sewer system, Portland City Council directed BES that minimum requirements be exceeded and stormwater BMPs be implemented throughout Portland. In accordance with permit requirements, the city developed and implemented a *Stormwater Management Plan* which includes the following categories of BMPs and their purpose statements:

- *Environmental and Program Monitoring* – To track and evaluate the long-term water quality trends resulting from implementation of the *Stormwater Management Plan*.
- *Program Management* – To ensure effective program management, coordination, and reporting.
- *New Development Standards* – To prevent and mitigate pollutant discharges and other water quality impacts associated with new development and redevelopment during and after construction. The development and update of the *Stormwater Management Manual* is included in this category. The *Stormwater Management*

*Manual* includes stormwater management standards for new development and redevelopment, including requirements for stormwater treatment and infiltration.

- *Industrial/Commercial Controls* – To reduce and control the discharge of pollutants from industrial and commercial facilities to the municipal separate storm sewer system
- *Illicit Discharge Controls* – To identify, investigate, and, if appropriate, control/eliminate illicit discharges and non-stormwater discharges to the municipal separate storm sewer system.
- *Structural Controls* – To implement structural modifications (constructed facilities) to existing systems/development to reduce pollutants in discharges from the municipal separate storm sewer system.
- *Operations and Maintenance* – To implement operations and maintenance practices for public streets, sewers, and other facilities to reduce pollutants in discharges from the municipal separate storm sewer system.
- *Natural Systems* – To help preserve and restore the natural resources and functions that prevent pollutants from entering into, and discharging from, the municipal separate storm sewer system.
- *Public Involvement* – To inform and educate the public about the causes of stormwater pollution, the effects on local streams and rivers, and the need for stormwater management. To encourage active participation in pollution reduction efforts.

Portland's NPDES permit requires implementation of and annual reporting on projects and programs under each of the categories listed above. The *Stormwater Management Plan* and annual compliance reports can be found online at [www.portlandonline.com/bes](http://www.portlandonline.com/bes) or by contacting the City of Portland BES.

The cities of Gresham and Fairview are also co-permittees for their NDPES permit. ODOT has a separate NPDES permit for all ODOT jurisdictional areas including the Interstate 84 corridor through Gresham and Fairview. The efforts of Gresham and Fairview focus on the reduction of pollutants from runoff in commercial, industrial, and residential areas. The efforts focus on a combination of pollutant-removal measures—such as implementation of effective maintenance practices, retrofitting of existing facilities to provide water quality treatment, and illicit discharge detection—and pollution-prevention and -reduction measures—such as education, improved design standards and an integrated pest management (IPM) program. To comply with the permit, the two cities also prepare annual compliance reports that outline their activities for the previous year . More information on the two cities' permits, stormwater management programs and compliance reports can be obtained from City of Gresham's Department of Environmental Services or at

[www.ci.gresham.or.us/cleanrivers](http://www.ci.gresham.or.us/cleanrivers). Gresham maintains its own stormwater manual and Fairview utilizes Portland's manual in lieu of developing its own.

**WPCF Permit** – The federal UIC program was enacted in 1974 under the SDWA, a comprehensive national framework designed to ensure the quality and safety of drinking water supplies. The SDWA regulates all UICs and requires that any discharges from UICs be protective of drinking water sources.<sup>3</sup> In the state of Oregon, all groundwater is regulated as a potential source of drinking water. ODEQ regulates the UIC program in the state of Oregon.

In 2005, ODEQ issued the city a WPCF permit that established the construction, operation, and maintenance requirements that the city must implement to protect groundwater. The requirements of Portland's WPCF UIC permit are aimed at ensuring that the infiltration of stormwater runoff from urban areas through city-owned UIC structures protects the beneficial use of groundwater—including use of groundwater as a drinking water resource—and protects surface water quality. Specifically, the permit requires that stormwater influent to the more than 9,000 UICs does not exceed Maximum Allowable Discharge Limitations (MADLS) in stormwater. The requirements cover assessment, development, implementation and reporting for the UIC program.

*Assessment* – In 2006, the city submitted a City-wide System Assessment to ODEQ. The assessment evaluated all city UICs in relation to the following:

- Separation of the distance between the bottom of the UIC and seasonal high groundwater
- Proximity to domestic or public drinking water wells
- Potential for receiving drainage from industrial and commercial properties regulated under Superfund Amendments and Reauthorization Act (SARA) Title III
- Industrial and commercial properties that have site activities that could cause violation of permit conditions
- Vehicle maintenance floor drains, fire station bay drains, or indoor parking facilities
- Public and private facilities with NPDES 1200-Z permits

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<sup>3</sup> ODEQ defines an underground injection control (UIC) as any system, structure, or activity that is intended to discharge fluids below the ground surface. This includes but is not limited to sumps, French drains, and stormwater disposal wells.

*Program Development and Implementation* – The city developed a UIC Management Plan (UICMP) that outlines the policies and practices the city will implement to meet permit requirements and protect groundwater as a drinking water resource. The plan emphasizes actions the city will implement to prevent, minimize, and control pollutants prior to discharge to a UIC, including the following elements:

- System Management—including implementing BMPs city-wide to prevent, minimize, or control pollutants before they can discharge to a UIC. The UICMP includes BMPs similar to those in the *Stormwater Management Plan*.
- System Monitoring—establishes a statistically robust sampling program to evaluate stormwater quality entering public UICs and provides data needed to demonstrate that UICs are operated in a manner that protects groundwater and meets WPCF permit conditions. Permit conditions include compliance with MADLs. The permit requires that stormwater discharge limits are measured at the point of discharge to the UIC and are based on Oregon groundwater protection standards.
- Evaluation and Response—guidelines describe how data and information generated from the system management and monitoring activities will be used to assess UIC compliance status. The guidelines also define the process and criteria used to identify, evaluate, and prioritize action necessary to protect groundwater and meet permit requirements.
- Corrective Action Plan—establishes the process that will be used to evaluate, rank select, and implement corrective actions for UICs that do not meet permit requirements.

*Reporting* – The permit also requires development of a comprehensive UIC monitoring plan and the submission of annual monitoring reports. The monitoring reports must disclose information about all constituents found in stormwater draining to public UICs, even constituents not formally incorporated into the official permit. To adequately implement the permit, Portland was required to develop a UIC registration database with provisions for quarterly updates. Portland also must develop a system-wide inventory and assessment of all UIC facilities. The city's UIC management plan identifies the best management practices the city will implement for construction, operation and maintenance of public UICs. The plan is required to include detailed annual reports and must be updated on a comprehensive basis prior to 2010.

The city is implementing the UICMP and performing corrective actions for UICs that have been identified as non-compliant through system assessment and monitoring. The CSSW WPP requires that all Portland-owned UICs that receive drainage from commercial and industrial zoned areas and arterial or residential collector streets in

the protection area must have a sedimentation manhole or other appropriate stormwater treatment facility. Twenty-seven UICs have been identified as needing retrofits. This work is scheduled for December 2008.

The City of Portland also developed and implemented a corrective action plan. The plan describes the steps the city will take when individual UICs fail to comply with permit conditions. When this occurs, the city must take prompt corrective actions or decommission and close the UIC.

The City of Gresham has nearly 1000 dry wells, of which only a handful are located in the wellhead protection area. Like Portland, Gresham has applied for a UIC permit. The monitoring, reporting and compliance requirements of this permit will likely be similar to the permit issued to Portland.

#### Sewer Lines and Pump Stations

The City of Portland has NPDES discharge permits for its Columbia Boulevard and Tryon Creek publicly owned treatment works. The permits, which regulate the discharge of total suspended solids, biochemical oxygen demand, and *E. coli* to the Columbia and Willamette rivers, specify both technology-based and water-quality-based effluent limits. Technology-based effluent limits are based on the technology available to control the pollutants; water-quality-based effluent limits specify numerical criteria for discharges. Portland's permits require stringent public-notice requirements, monitoring of biosolid and effluent quality, maintenance protocols for both the treatment plants and the collection system; emergency response plans and programs, industrial pre-treatment and monitoring programs.

The City of Gresham also has an NPDES discharge permit for its wastewater treatment plant with similar requirements and measures. Gresham and Fairview are also responsible for developing and implementing Total Maximum Daily Load (TMDL) Implementation Plans. The TMDL Implementation plan will reduce the contribution of bacteria to surface waters from activities and discharges under their respective jurisdictions, including discharges that enter and exit the public sanitary and storm sewer systems. Although onsite systems (e.g., cesspools and septic systems) are regulated by ODEQ and Multnomah County, Gresham and Fairview have adopted policies in support of these agencies' missions to minimize the contribution of bacteria from onsite systems. Gresham and Fairview also respond to sewage spills from public or private collection systems as needed to protect public health, safety, and the environment.

According to ODEQ, there are three main potential sources of bacteria in the Fairview watersheds: stormwater, septic systems, and periodic sanitary sewer discharges. The *Stormwater Management Plan* describes many BMPs to protect water

quality from pollutants carried by stormwater. Although there are eight parcels within Fairview that have septic systems, only one parcel is located within the protection area. City of Fairview regulations require these parcels to connect to the sanitary sewer as they are redeveloped or the septic system fails. Sanitary sewer conveyance and regulation is also the responsibility of the city. The sewer rehabilitation program includes systematic pipe restoration to replace defective pipe and reduce inflow and infiltration. All pump stations are monitored by a Supervisory Control & Data Acquisition (SCADA) system and are equipped with standby generators. In addition, the Fairview Public Works Department responds promptly to reports of public and private sewage spills to ensure proper cleanup and repair.

#### Agricultural Uses

There are three commercial farming enterprises in the protection area. One of the farms is certified by the Food Alliance for its sustainable growing practices. The other two farms are currently part of ODEQ's Environmental Cleanup Site Information Database for contaminated sediments from heavy agricultural chemical use. Portland's BES is currently working with the two farms to reduce sediment loads into the Columbia Slough. CSWC will also provide additional outreach to these farms in the coming year to help educate them about the importance of protecting groundwater.

#### Parks

A written IPM program for Portland parks has been in place since the late 1980s. The policies in this program direct every aspect of pest management in Portland parks and serve as rules for all pest-management personnel. Updated continuously to respond to new information and new challenges, the IPM program has been hailed as a model of progressive methods and practices by other municipalities and agencies throughout the region. The program meets or exceeds local, state, and federal requirements. Gresham and Fairview have adopted IPM practices in plans based upon Portland's IPM program. However, additional outreach is needed to increase park managers' awareness of the groundwater protection area.

Portland is currently working with Metro staff at Blue Lake Park on proposed park improvements. The Water Bureau has been very active in reviewing reports and studies to ensure that groundwater quality is protected. Future plans include a jointly sponsored homeowner Naturescaping workshop at the park to help educate local residents about how to maintain their landscapes with native plants and less chemicals. Metro has recently opened a new exhibit at the park. The Blue Lake Natural Discovery Garden has native plants, low water use plants and promotes healthy gardening practices. Metro uses very limited amount of herbicides at the park, limited to occasional Round-up and a natural moss control.

### Transportation Corridors

Transportation corridors are addressed at the beginning of this section on commercial and industrial activities. However, some portions of the well field, primarily local (non-collector) residential streets do not have requirements. The Portland Water Bureau has been working with the Portland Department of Transportation and BES on street designs that help manage stormwater while protecting groundwater. In Gresham and Fairview, all arterials and collectors are either owned by the City of Gresham or Multnomah County. Gresham and Multnomah County have road maintenance BMPs that are similar to Oregon Department of Transportation's (ODOT's) *Routine Road Maintenance Water Quality and Habitat Guide*, which has been approved by the National Oceanic and Atmospheric Administration Fisheries to comply with the Endangered Species Act. Additional outreach and coordination is needed with ODOT because this state agency has jurisdiction over a significant portion of Sandy Boulevard, a major transportation corridor in the wellhead protection area.

### Vacant Land

As vacant land becomes developed, Portland, Gresham and Fairview will have the opportunity to review permits and apply the appropriate regulations to protect groundwater.

### Implementation of Management Measures

The Portland Water Bureau continues to provide overall management of the CSSW WPP and manages contracts with the CSWC and the CCA as well as intergovernmental agreements with Portland Fire and Rescue and the City of Gresham for the implementation of the program.

Staff from Gresham and Fairview have responsibilities for inspections and ensuring that businesses in their jurisdiction comply with program requirements. They also partner on outreach efforts and technical assistance. Annual work plans are developed with the CSWC and CCA. Future actions include new contracts for outreach and technical assistance. Current contracts with the Watershed Council and CCA expire June 30, 2008. With the new contracts the Portland Water Bureau hopes to take the program to a new level with expanded outreach opportunities in Maywood Park, Gresham, and Fairview, with additional events, school programs, and more partnering.

The objective for the regulated business community for the next five years is to promote proactive chemical assessment and management with the goal of helping businesses minimize or eliminate hazardous materials. The bureau plans to utilize existing assessment tools that can inventory, assess, and rank chemicals, identify chemicals of concern and provide less toxic alternatives. The goal is to reduce the quantity of hazardous materials used in the wellhead protection area and reduce the

number of businesses that are regulated under this program. Another project planned for completion next year is a better database for hazardous materials reporting forms to more efficiently assess and identify chemical usage.