

City of Bend Public Works Department Stormwater Master Plan

PRACTICAL TOOLS FOR MANAGING STORMWATER QUANTITY AND QUALITY

Project Fact Sheet
January 2007

OVERVIEW

The City of Bend, through its Public Works Department, has hired URS Corporation to assist in the development of a Stormwater Master Plan (SMP). The SMP team is multidisciplinary and includes engineering, geotechnical, public outreach, and financial expertise. The SMP will include recommendations for stormwater management throughout the City.

As the City has grown and the amount of impervious area has increased, flooding has become a frequent and serious problem. In addition, Federal and State laws now require the City to improve the quality of the stormwater it discharges to Mirror Pond and underground. Therefore, stormwater is now becoming a higher priority in Bend, requiring additional resources to those historically provided from the City's general and street funds.

In addition to flooding problems, stormwater is directly affecting Bend's most important icon, Mirror Pond. Non-point sources of pollution (oils, debris, nutrients, sediment, etc.) are all making their way to the Pond via stormwater outfalls. Similarly, stormwater injected underground may be posing a threat to the quality of our groundwater, often recognized as among the best in the world.

In an initial attempt to better manage the quality of its stormwater, and to satisfy requirements of state and federal regulations, the City recently adopted an Integrated Stormwater Management Plan (ISWMP). This plan is required by the two permits the city is required to obtain: one for its discharges to the Deschutes River (National Pollutant Discharge Elimination System (NPDES) Phase II) and another for its

underground discharges (Underground Injection Control (UIC) Water Pollution Control Facility (WPCF)). These regulations and permits require the City to use best management practices (BMPs) to improve stormwater quality.

The ISWMP is a publicly supported call to immediate action on the stormwater front. Accordingly, Bend has made a strong commitment to complete a thorough analysis of its stormwater system through the development of its SMP. The goal of the SMP is to emerge with a new stormwater program that is based on sound engineering analysis and incorporates the flow control and treatment BMPs most suited to Bend's unique set of conditions.

The City will need to bring its stormwater systems into compliance with water quality regulations and correct the problems that damage property and interfere with public safety. These increased costs require that a proposed mechanism for funding the program also be part of the SMP. We need, and the SMP will deliver, a technical and financial roadmap for Bend's stormwater future.

A draft SMP will be completed by October 31, 2007, and the final plan is due to be considered for adoption by the City Council in early 2008.

STORMWATER MASTER PLAN ELEMENTS

When completed, the SMP will include the following:

- Delineation of drainage areas and runoff quantities throughout Bend.
- A prioritized list of facilities and other capital improvements necessary to prevent flooding

and meet **state and federal water quality requirements**.

- Bend-specific recommendations for maintenance standards that protect water quality and ensure that stormwater systems continue to function properly.
- Recommendations for design standards for new development and re-development.
- The financing and utility structure necessary to support the entire stormwater program.

WHAT PROBLEMS ARE WE ADDRESSING?

Managing stormwater quantity (rate and volume) goes hand-in-hand with managing quality. The SMP team will use appropriate tools to identify drainage areas, estimate runoff quantities, and select appropriate BMPs throughout the City. The results will be used to determine where existing drainage and treatment systems are inadequate for design storm events. Where capacity or treatment is determined to be inadequate, fixes will be recommended. Detailed fixes and cost estimates will be recommended for several of the worst drainage problems.

Experience has shown that several different approaches to stormwater management will be required in the City. This is because of different slopes, soils, subsurface geology, rainfall patterns, and development density. This will be addressed in the SMP.

PHYSICAL STRUCTURES

The City's stormwater system includes approximately 20 river outfalls, 3,280 drywells, 1,020 drill holes, and 5200 catch basins along with a few infiltration ponds, swales, and manufactured treatment devices. (The drywells and drill holes are designed to inject stormwater underground.) The SMP team will evaluate the role of these facilities now and into the future.

The City does not have the flow control facilities necessary for good flood and water quality management. Stormwater detention facilities play an important role in flood control management because they collect stormwater

and slowly re-release it, protecting homes and property from flooding, while helping to minimize erosion. Use of these facilities in the future will also be evaluated.

The team will inventory existing capital facilities and determine whether or not they are adequate and aesthetically pleasing. Based on this work, the team will recommend which facilities should remain in place and which should be taken out of service. The team will also create a prioritized list of the capital facilities that should be built over the next 10 years.

MAINTENANCE

Maintenance programs, such as street and catch basin cleaning, are important stormwater management activities. When carried out on a regular basis, they can be effective in extending the life of injection and treatment systems, improving water quality, and preventing flooding. The team will review the maintenance practices currently in place, evaluate them for effectiveness and efficiency, and recommend changes.

PUBLIC EDUCATION

Bend residents need to understand the important role they play in helping to protect water quality. The team will evaluate current public involvement and education programs and recommend changes.

REGULATORY AND PUBLIC POLICY MEASURES

Regulations, ordinances, and standards are vital to protecting water quality. Based on what other jurisdictions have found successful, and on generally accepted standards, the team will recommend ordinance, code and standards changes. This will assist the City in reviewing new and re-developments and assure that water quality and drainage are properly addressed at the time of construction.

FINANCING AND RATES

Once capital facilities, maintenance, monitoring, regulatory and public education programs have been fully identified and budgets estimated, the team will analyze both the financing and the rate structure necessary to support the stormwater

program. This will include an evaluation of the program elements designed to serve growing areas of the City, as well as those that will serve developed areas. This determines where and how “growth will pay for growth” as well as the rate structure that will be used to fund the program.

MORE INFORMATION

The public can learn more about the planning process and become involved in its development, through workshops, printed materials, and the City’s website. Stormwater cannot be successfully managed in Bend without the strong support and buy-in of businesses and citizens. Everyone will be affected and everyone is invited to participate.

For more information, contact Ollie Fick, SMP Project Manager, at Bend Public Works, 541.317.3016

*City of Bend
Stormwater Program*

