

Abstracts

Thursday, May 1

Session L7: Making it Clear for the Public: Techniques in Data Communication, Part 1

1:30 – 3:00 pm | Room 231

Promoting Recreation in the Willamette River Post CSO Control

Peter Abrams

City of Portland, Portland, Oreg.

Abstract

Portland's first sewers, constructed in the late 19th century, combined sewage and stormwater in the same pipes and carried the wastewater directly to the Willamette River without treatment. In 1952, new interceptor pipes began collecting sewage from the combined sewers for conveyance to Portland's first sewage treatment plant.

The City of Portland and the Oregon Department of Environmental Quality (DEQ) agreed on a CSO control plan in 1991, and an amended plan in 1994. That plan, the Amended Stipulation and Final Order (ASFO), required Portland to control CSOs to the Willamette River by 2011. The city finished CSO construction and activated the Willamette River CSO tunnel system before its December 1, 2011 deadline.

Before the CSO program began, Portland's combined sewers overflowed an average of 50 times a year, spilling about six billion gallons of combined sewage into the Willamette River every year. The CSO program reduced overflows to the river by 94%. Today, combined sewers overflow to the river no more than four times per winter and once every three summers.

As you might expect, many citizens of Portland are convinced that the Willamette River is contaminated and unfit for swimming or other recreation. With the completion of the CSO project the Bureau of Environmental Services (BES) would like to change this perception, as well as promote further water quality protection.

Weekly summer bacteria monitoring was initiated in 2012 at five recreation points along the Willamette River and the results are posted on the city web page. There are organized events in the summer such as The Big Float, the Portland Triathlon and the Portland Bridge Swim, which provide the link to our bacteria results on their web sites for reference by their participants. The field sampling crew also provides information regarding the completed CSO program when approached by citizens.

The Willamette River is considered one of the greatest assets of Portland. Over time citizens will recreate in the river on a more regular basis and there will be a change in attitude towards the river, creating a greater sense of responsibility to protect the water quality.

Turning Monitoring Data from Numbers into Watershed Priorities

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Abstract

Sound science is the foundation for successfully managing and improving conditions in our watersheds. Interactions with regulatory agencies and communication with the public are also more effective when grounded in sound science. Water quality monitoring is a key element in forming this foundation.

In general, more data provide more understanding of watershed conditions. Given the potential pitfalls and challenges that can occur in each step of water quality sampling and analysis, successfully executing a substantial monitoring program can feel like a major victory and generate a sense of relief when the last sample is collected.

However, the completion of a monitoring program is only half the battle. Managing and interpreting data to tell the “story” about the watershed and form the foundation for effective management decision-making can be challenging when working with a voluminous dataset from an extensive water quality monitoring program.

SD1, which is responsible for wastewater and regional storm water management in Northern Kentucky (NKY), undertook a six-year water quality sampling program in sixteen local watersheds from 2006-2011. This program included base flow and intensive wet weather monitoring for more than 20 parameters at over 75 locations. SD1 also sampled 80 locations in the Ohio River for a reduced parameter list over the same six-year period. Over 40,000 measurements were made during the sampling program. SD1 developed a comprehensive approach and methods to evaluate the data in the context of the monitoring program objectives and Watershed Plan goals. The data analysis and resulting water quality “story” for each watershed were documented in a Water Quality Report.

This paper will present the scope of the sampling, the objectives of the program, the innovative approaches used to analyze the data, the insights gleaned from the data and how the results were and will continue to be used to prioritize, address and track water quality improvements in NKY’s local waterways.

Volunteer Monitoring for Science and Action

Tony Williams

Buzzards Bay Coalition, New Bedford, Mass.

Abstract

Excessive nutrient inputs from land use, sprawl impacts to the surrounding watershed are resulting in changes in habitat health and water quality along the coastline. At greatest risk are the Bay’s more than 30 harbors, coves and rivers which receive the bulk of the nutrient load from the watershed. The program task is collecting data on nutrient overloading. Nutrient pollution (eutrophication) is mostly rooted in the watershed’s ever-growing population with development and land use changes. Management is often challenging and difficult because of its widespread distribution from a wide array of sources—runoff, septic, sewage, agriculture. Involving more than 700 citizen volunteers since 1992 allows the Buzzards Bay Coalition to monitor all of Buzzards Bay’s major embayments – an area covering more than ¼ of the Massachusetts coast. The program has the dual benefit of collecting comprehensive water quality data while educating and empowering people. This program’s success relies in getting citizens involved with monitoring, management and restoration of the Bay’s resources at the local level. The program is recognized for providing water quality data to both the Local and State Environmental Managers as a cost effective alternative where other resources are absent for initiating 303(d) listing and TMDL reporting.

The monitoring objective is to collect data to better understand the Bay ecosystem and its response to human-related impacts, in order to guide restoration and protection. This citizen’s monitoring program has documented and evaluated nitrogen-related water quality going on 23 years. The data is then represented in a Bay Health Index, showing long-term ecological trends and as method to improve the public and town elected officials understanding of current local water quality.

The program is applying consistent methods while building collaborations and long-term data for watershed and ecosystem health.

How to Turn 3000 Water Quality Measures from 11 Sources into an 8 Page Report Written for the General Public

Daniel Obrecht and Anthony Thorpe

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Abstract

The Upper White River Basin is a large drainage (36,260 square kilometers) located in northwestern Arkansas and southwestern Missouri. Along with a network of clear-water streams and rivers, the area contains a chain of four large reservoirs: Beaver Lake, Table Rock Lake, Lake Taneycomo, and Bull Shoals Lake. The number of tourist visiting the area has increased over time, as has the number of year-round residents. This increased stress on water resources relating to the proliferation of human activity in the basin, combined with the importance of these

resources to the economy of the region, has led to a focused effort to educate the general public about water quality. Ozark Water Watch, a non-profit group operating in the basin, has produced a Status of the Watershed Report for five consecutive years. The goal of the report is to answer the question "How is the water?" Past reports focused on water quality data generated by the USGS and a limited number of stream invertebrate samples collected under an agreement with University of Arkansas. While the quality of these data was very good, the spatial coverage within this large basin was limited. In an attempt to include data from more sites, as well as highlight volunteer efforts, the report was reworked for 2012. Water quality data was gathered from 11 different sources that included: federal and state agencies, local governments, and five different volunteer programs. Altogether over 3000 water quality measures taken from 160 sites within the basin were included in the 2012 report. This presentation will review the transition to utilizing the copious and varied data set, and how the data were condensed into a colorful eight page report that targeted the general public.