AWRA newsletter
Washington Section
AMERICAN WATER RESOURCES ASSOCIATION
March-April 2008

PRESIDENT'S NOTES

Jacque Klug, WA-AWRA Section President

Happy Spring! Your WA-AWRA committees have been planning a series of events and activities for our chapter. We are investing a lot of time and effort this year into increasing opportunities for members across the state to participate in WA-AWRA events. To this end, we teamed up with the Society of Inland Northwest Environmental Scientists (SINES) to host a presentation and discussion on soil erosion with University of Washington professor David Montgomery in Spokane in March. We're also planning a dinner meeting in the Olympia area to provide an opportunity for South Sound members to connect. If you are interested in helping to organize an event in your area, please contact me, or any of the other board members. You can find our contact information in the back of the newsletter.

We have also been hard at work on the signature event for our chapter, the annual conference, held each fall. We have selected a topic and are working on securing the venue and date. This year we'll be focusing on water storage. If you have any interest or ideas on this topic, please contact the conference co-chairs, Steve Hughes or Rebecca Ponzio.

In addition to our state activities, our chapter has been selected to host the 2009 AWRA National Conference, which will be held November 8-12, 2009 in Seattle. The AWRA Annual Conference draws a large and diverse audience, and is a great opportunity for our chapter to highlight regional issues and share success stories with a national and international audience. It is also a great opportunity to learn from other parts of the country and world. Our chapter hosted two very successful AWRA National Conferences in 2005 and 1999, and we look forward to another. Keep an eye out for more information on how you can get involved in the conference planning.

INSIDE:

In this issue of the newsletter we are featuring municipal water supply and urban stormwater. We have a series of articles on the Municipal Water Law passed by the Washington Legislature in 2003, which addresses water rights and water planning issues associated with municipal water supply. In this issue we explore the controversies related to implementation and interpretation of the law, as well as its conservation and efficiency provisions and new requirements for water purveyors. This issue also includes an article describing implementation actions associated with water rights and water supply planning. Finally, we have an article summarizing the issues and current status on litigation over the MWL.

In addition to potable water supply issues, this issue also addresses urban stormwater, with a summary of a February dinner meeting on urban stormwater impacts on coho populations, and an article describing an innovative solution to permitting rainwater catchment systems in the City of Seattle. These articles highlight the technical challenges stormwater poses for cities and towns and some creative solutions that have been developed.

Our newsletter committee worked hard to put together a great series of articles on these topics. We hope you find them interesting and informative and a great example of the benefits of AWRA-WA membership. If you would like to author an article, please contact Chris Pitre, our newsletter editor. We strive to be a member-driven organization, and welcome your input.

The Municipal Water Law

Paul Fabiniak, Department of Ecology Water Resources Program

NOTE: The following article is for informational purposes only, and represents the opinions of the author. It does not represent the official position of the Department of Ecology or any other governmental or nongovernmental entity.

In 2003 a landmark piece of water legislation passed into law in Washington State. Formally known as the Municipal Water Supply Efficiency Requirements Act, Chapter 5, Laws of 2003 (2SSHB 1338) and more simply referred to as "the muni law", this sweeping piece of legislation made several changes affecting the way water is managed for certain water right holders. These changes had been five years in the making, and came about as a result of a significant court case. In order to understand exactly what the law did, a brief review of certain aspects of water law is in order, followed by a little history leading up to muni law, and finally its main provisions.

Water Law Basics

Like many other Western states, Washington currently operates under the so-called prior appropriation system for managing water. All water above, on, or beneath the state is considered "water resources" of the state, and the state has jurisdiction to regulate its use. For most uses, individuals wishing to appropriate water for a beneficial purpose must receive a permit from the state. A permit has a development schedule, and when the water has been put to full use the state issues a certificate attesting to that use. A crucial aspect of the system is that all purposes of use are regarded as equal. In times of water shortage, users are regulated strictly on the basis of the order in which they began beneficially using water. This means older "senior" users have a legal right to their water before newer "junior" users.

Water for Growing Communities

Even though water law historically didn't distinguish between the importance of different purposes of use, a real difference has always existed in the way water rights for cities, towns, and housing developments have been developed compared to other water rights. This is because it's difficult to know when a city's water right will be fully used, since a city has little control over how quickly people will be born or move there. This may require water rights for such entities to have very long development periods. For several decades, the Department of Ecology and its predecessor agencies resolved this by relying on a part of the water code which seemed to allow the agency to issue a certificate when the physical infrastructure necessary to move the water was in place. It was thought that subsequent beneficial use of water under the certificate could occur over whatever period of time was necessary. Because of this, these were referred to as "pumps-and-pipes" certificates.

In 1995, the Department of Ecology concluded it did not have the authority to issue pumps-and-pipes certificates after all. Ecology subsequently denied the issuance of a certificate to a developer named Theodoratus. He appealed the decision, and the resulting case made it all the way to the Washington State Supreme Court. Ultimately that court concluded that state statutory and common law does not allow for the final certificate of water right to be issued based upon physical infrastructure. Rather it must be based on actual beneficial use of water.

To say this decision caused great concern in the domestic water purveyor community would be an understatement. By this point, there were hundreds if not thousands of issued pumps-and-pipes water right certificates. Many wondered what the status of these certificates was after the Theodoratus decision. Some at Ecology thought administrative actions could correct the problem, but strong opposition from many conflicting interests made a statutory fix a more desirable solution. For the next five years from 1997 to 2002 various attempts were made based on input from utilities, Ecology, tribes, environmental groups, and other concerned interests. Finally, in 2003 a sweeping comprehensive bill was passed. Like most issues related to water, the passage of this bill involved a great deal of political maneuvering and compromise in order to reach Governor Locke's desk for signing.

Law Summary

Below is a summary of many of the changes and modifications incorporated into the new law:

- For the first time, the law defines a municipal water supplier and the criteria by which a water right would qualify for municipal water supply purposes. This is significant because up until passage of the bill no such statutory definition existed. The definition includes residential developments having fifteen or more connections, developments serving part time populations equal to or greater than a set number, and "governmental use" by cities, towns, public utility districts, counties, sewer districts, or water districts. It also includes the delivery of raw water for any of the above uses. This definition is important, because water rights that qualify as municipal are not subject to be taken away (i.e. relinquished) after five years of nonuse under the law. This affords the holder of such rights greater flexibility in use of the rights over time.
- The law also clarifies the status of the pumps-and-pipes certificates with regard to further development of water use by declaring them to be "in good standing". This was intended to alleviate uncertainty resulting from the Theodoratus decision. Ecology has offered its interpretation of the meaning of this phrase in its Policy 2030 (see below).

- The law clarifies that any historical connection or population figures in a water right record used to estimate water need are not limiting for the use of a municipal water supply purpose water right. Rather, the allocated instantaneous and annual quantities of water are the ultimate limit of use. In other words, municipal water suppliers are not limited to the number of connections or the population of people estimated at the time the right was applied for. Once again, this affords holders of such rights greater flexibility.
- The law allows the "place of use" of a municipal water right to be modified through planning or engineering documents submitted and approved by the Department of Health, provided several important conditions are met. The Department of Ecology must also ensure such documents are "not inconsistent" with local planning documents called watershed plans. This provides municipal water right holders with an alternative to the traditional water right change process for such place of use modifications.
- The law mandates the creation of a new Water Use Efficiency Rule by the Department of Health. This rule has since been promulgated. The rule specifically requires municipal water suppliers that fall under part of the definition described above to establish water saving goals through a public process, install service meters within ten years, meet a distribution system leakage standard, develop a water use efficiency program, evaluate or implement water use efficiency measures to manage water use, and report annually on progress towards meeting goals and using water efficiently. These are some of the requirements placed on utilities in exchange for the flexibility granted to them in other sections of the bill.
- The law increases the required level of coordination between state and local government entities. Specifically, greater coordination is required between the Department of Ecology and the Department of Health for the review of water related engineering documents. This has been facilitated through a Memorandum of Understanding between the two agencies. Coordination between state and local entities is also addressed, particularly between the Department of Health and regulated utilities. The bill requires the Department of Health to ensure that new service provided by utilities under water system plans is consistent with a variety of local planning efforts.
- The law states that a municipal water supplier has a duty to provide retail water service within its retail service area if: (1) Its service can be available in a timely and reasonable manner; (2) the municipal water supplier has sufficient water rights to provide the service; (3) the municipal water supplier has sufficient capacity to serve the water in a safe and reliable manner as determined by the department of health; and (4) it is consistent with the requirements of any comprehensive plans or development regulations adopted under certain statutes and under certain specific plans and regulations adopted by certain local government entities. The Department of Health recently adopted a Planning and Engineering rule to implement these requirements.

Since the passage of the law, Ecology has created a policy document which provides a detailed description of Ecology's interpretation of parts of the law the agency must implement. This is called Policy 2030, and the Municipal Water Law webpage at the end of this article has a section devoted to this document. The Department of Health has also created a variety of policy documents and rules. These are located at the Department of Health Municipal Water Law and Water Use Efficiency web pages also at the end of this article.

Litigation

In late 2006, several entities, including tribes, environmental groups, and private citizens filed lawsuits challenging the constitutionality of various sections of the bill. These challenges have since been consolidated into what is now known as the Lummi/Burlingame litigation. This litigation is ongoing. The substance of the objections is available in much greater detail at the Municipal Water Law Webpage address provided below. All agencies and entities are continuing to operate under their interpretations of the law until directed to do otherwise by a court.

Hopefully after reviewing this article, the reader has developed an appreciation of the complexity and the broad scope of this 2003 change to the law.

Web Resources

Department of Ecology Municipal Water Law webpage:

http://aww.ecydev/programs/wr/rights/muni_wtr.html

Department of Health Municipal Water Law and Water Use Efficiency webpages:

http://www.doh.wa.gov/ehp/dw/municipal_water/municipal_water_law.htm

http://www.doh.wa.gov/ehp/dw/Programs/wue.html

Saltwater anglers looking for a change of pace will soon have an opportunity to hook a **halibut**. The halibut season gets under way April 10 in marine waters throughout the region. The fishery will be open five days a week, Thursday through Monday, with a daily limit of one halibut. There is no minimum size limit for halibut caught in any area.

DOH Public Water System Rules Updated

David Christensen, Office of Drinking Water, Washington State Department of Health

When you turn on the kitchen faucet each morning, you probably don't give much thought to where your water comes from. That's because safe and reliable drinking water is a fact of everyday life for most of us. Illness caused by contaminated drinking water is rare in Washington state, in large part because of the regulatory oversight provided by local, state, and federal government.

Drinking water is supplied to most people in Washington State from Group A public water systems. Group A public water system must follow rules created by the U.S. Environmental Protection Agency (EPA) to implement the federal Safe Drinking Water Act. Roughly 5.5 million of the state's 6.5 million residents are served by about 4,200 Group A public water systems. Group A public water systems have 15 or more residential connections (homes), or serve a non-residential population of 25 or more people for at least 60 days a year.

The Department of Health (DOH) recently adopted new rules in chapter 246-290 Washington Administrative Code (WAC) for Group A public water systems. The most recent updates to the Group A public water system rules were required when the Washington State Legislature amended the Revised Code of Washington (RCW), and EPA adopted new federal rules. Through a formal agreement, EPA authorizes the Department of Health to implement the Safe Drinking Water Act, which establishes minimum standards for drinking water quality and protects public health.

Municipal Water Law

Some of the recent changes to chapter 246-290 WAC were required to implement the Municipal Water Supply-Efficiency Requirements Act of 2003, better known as the Municipal Water Law (MWL). The state legislature passed MWL to help meet communities' growing needs for our state's water resources.

The law requires that new water service to industrial, commercial, or residential users must be consistent with local development regulations and comprehensive plans. To comply with the rule changes, municipal water suppliers' planning documents (water system plans) must be submitted to local governments. Local governments are then able to identify whether the water system plans are consistent with their adopted comprehensive plans, watershed plans, and other relevant planning documents. Water system plans must be modified by the utility to address identified conflicts with the local plans.

Another element to the rule changes involves water systems' responsibilities to potential customers. Municipal water suppliers have a "duty to serve" all customers within their retail service area providing that several conditions are met:

• The supplier has sufficient capacity to serve water in a safe and reliable manner.

• The service request is consistent with adopted local plans and development regulations.

• The supplier has sufficient water rights to provide service.

• Service can be provided in a timely and reasonable manner.

The retail service area is determined by the municipal water supplier and identified in its water system plan. The retail service area must include all areas where the municipal water supplier currently provides service, and may include areas where new service is proposed.

One rule change provides more flexibility for municipal water suppliers. They are now able to expand the identified place of use on existing water rights to a service area outside of the area currently approved by DOH, under the following conditions:

• Planning and engineering documents must be consistent with adopted local plans and development regulations.

• Planning and engineering documents must be consistent with adopted watershed plans.

• Municipal water suppliers must comply with the terms of their approved water system plan or small water system management program.

Finally, MWL called for changes to water system plan approval for municipal water supplies. A water system's governing body must approve its water system plan prior to DOH approval. Systems owned by a public body must approve their plan in a public meeting. Water systems must hold an informational meeting for customers prior to water system plan approval. Water systems with 1,000 or more connections must complete a review under the State Environmental Policy Act.

More information about MWL and the regulatory impacts of the law can be found at: http://www.doh.wa.gov/ehp/dw/municipal_water/municipal_water_law.htm

LT2 Changes

Other changes to chapter 246-290 WAC require water systems to comply with the federal long term 2 enhanced surface water treatment rule (LT2). This rule only affects Group A water systems that use surface water, such as a stream, or groundwater under the direct influence of surface water (GWI), like a shallow well or a spring. LT2 affects 148 water systems in Washington.

The rule supplements existing microbial treatment regulations for public water systems that use surface water sources or groundwater sources under the direct influence of surface water because these water systems have a higher potential risk of carrying Cryptosporidium, a disease-causing parasite. The public health objective of this rule is to strengthen protection against Cryptosporidium, which is a particular concern because it is resistant to chlorine.

Many water systems using surface water or groundwater sources under the direct influence of surface water will need to monitor for Cryptosporidium. To reduce monitoring costs, small filtered water systems serving fewer than 10,000 people may monitor first for E. coli, a bacterium that is less expensive to analyze than Cryptosporidium. The small water systems would then monitor for Cryptosporidium only if their E. coli results exceeded specified concentration levels.

Based on the results of Cryptosporidium monitoring, a water system may be required to install more treatment. In addition, all water systems with unfiltered surface water sources would be required to use more than one disinfectant, and water systems with uncovered finished water reservoirs would need to treat the water or cover the reservoir.

Future Rule Changes

Despite the recent flurry of rule-making activity, there are several additional amendments to chapter 246-290 WAC on the horizon. First, the water use efficiency rule will undergo a minor amendment. When first adopted in 2007, the water use efficiency rule was written to give water systems the ability to set water use efficiency goals for either the water system (supply-side) or its customers (demand-side). However, MWL required a customer-based (demand-side) conservation goal. The rule revision, which we expect to have in place by this summer, will clarify that municipal water suppliers must set at least one demand-side goal that encourages customers to use water more efficiently. We are considering an exception rule process to minimize inconvenience for water systems currently in the goal-setting process.

Also, DOH has initiated rulemaking for the federal groundwater rule. EPA adopted the groundwater rule on Nov. 8, 2006. DOH filed a formal notice in the Washington State Register on December 04, 2007 (WSR#07-24-072) to begin revising chapter 246-290 WAC to implement the federal rule changes. The schedule for updating the groundwater rule will be developed later this year.

A detailed description of all drinking water rules, including a link to the current version of chapter 246-290 WAC, can be found at:

http://www.doh.wa.gov/ehp/dw/Our_Main_Pages/regula.htm

South Sound Science Symposium

March 26, 2008, Lacey Community Center, 6729 Pacific Ave. SE, Lacey, WA

You are invited to join a symposium of ecosystem issues unique to the South Puget Sound. Through presentations, discussions, and poster sessions, we will explore how to identify and relate changes in the health of the south sound's ecosystem.

Potential Topics
Marine Circulation
Water Quality
Marine Biota
Landscape Changes
Stormwater Impacts

Who should attend:
Scientists
Science Users
Educators

For more information, visit: http://www.psp.wa.gov/about_us/action_areas/aa_south_sound.htm,
Or contact Mindy Roberts at: 360-407-6804 or mrob461@ecy.wa.gov

Water and the Comprehensive Plan – King County Style

Steve Hirschey, King County Department of Natural Resources and Parks

For local government the comprehensive plan is a key document. The King County Comprehensive Plan (KCCP) is the guiding policy document for all land use and development regulations in unincorporated King County, and for regional services throughout the County including transit, sewers, parks, trails and open space. The first comprehensive plan for King County plan was adopted in 1964. Needless to say, it has evolved over the past 44 years to address a myriad of development, conservation, and preservation planning issues. For more information, see the history of the KCCP at http://www.metrokc.gov/ddes/compplan/history.htm

Every year KCCP can be amended by the King County Council to address technical updates and make revisions that do not require substantive policy changes. Every fourth year a process occurs to conduct a complete review of the plan. In this review, broader policy issues can be addressed and the plan amended accordingly. There is currently, this being a fourth year, a complete review of the KCCP underway. Executive Sims recently transmitted the Executive branch update to the King County Council for their consideration and approval. The Executive recommended plan for 2008 is now online at http://www.metrokc.gov/permits/codes/CompPlan/2008/. The vision and goals of the KCCP are based on the thirteen planning goals in the Growth Management act. The GMA provides guidance and direction as to required elements of a comprehensive plan for those counties required to plan to meet GMA. In addition to the mandatory elements, the plan provides guidance from the King County Council on how the County is to develop. The comprehensive plan amendment process allows individuals, groups and County departments to propose changes to the KCCP. It provides a way to address changing conditions and new considerations in how growth occurs throughout King County.

In some ways and not surprisingly, water runs though the plan and facets of water management or needs for water are found in numerous places. For example, the Rural Legacy chapter recognizes that natural resource lands (a zoning classification) provide environmental benefits such as enhanced water quality and quantity. Rural policy 101 then goes on to say that land use regulations and development standards shall protect and enhance aquifers used for potable water, surface water bodies including Puget Sound and natural drainage systems and their riparian corridors. Rural policy 104 talks about the inevitable balancing that is done so that County environmental standards for forestry and agriculture are protective of environmental quality, especially in relation to water and fisheries resources, while encouraging forestry and farming. Rural residential development is to be at very low densities, in part, so that there is land for on-site sewage disposal and local water supply. Even at low residential densities, the rural element of the KCCP recognizes the impacts of impervious surfaces, stormwater generation and potential negative impacts to the natural system. Low-impact development is one strategy to address the issue and rural policy 233 says that King County should work with residential builders and developers to encourage the use of low-impact development practices that protect native vegetation and soils and reduce impervious surface. King County should promote preservation of native vegetation and soils on rural-residential zoned parcels to the maximum extent practicable. Dispersion of runoff from impervious surfaces into native vegetation in accordance with the Surface Water Design Manual should be the preferred method of stormwater management in the rural area. Stormwater management is not just an urban issue.

Chapter 4 of the KCCP addresses the environment. Protecting and restoring water resources is listed as one of several primary goals. Every resident of King County has an equal right to a healthy and safe environment and that goal requires that our water be of a sufficiently high standard that individuals and communities can live healthy lives. This chapter contains ideas that range from critical aquifer recharge areas to water for fish. King County recognizes the need to coordinate many programs with other agencies and to rely upon those agencies to do their part. Environment policies 103 and 104 direct King County to coordinate with local jurisdictions, federal and state agencies, federally recognized tribes, citizen interest groups, special districts, and citizens to develop Water Resource Inventory Area plans for all areas of King County. There is not one plan that meets that that need and so functional plans are created for flood management, stormwater and other water issues. How those plans are knitted together so that the development of environmental regulations and restoration projects are coordinated with all the interests is a worthy challenge. Policy E-120 states that development should support continued ecological and hydrologic functioning of water resources. Our development should not have a significant adverse impact on water quality or water quantity, or sediment transport and should maintain base flows, natural water level fluctuations, groundwater recharge in critical aquifer recharge areas and fish and wildlife habitat, lofty goals indeed.

Chapter 7 of the KCCP is entitled Services, Facilities, and Utilities and it also has many ideas on water development primarily related to public or potable water supply and sewers. This is the place or chapter that that makes a link between capital facility planning at the local water or sewer district level and the capital facility element of the KCCP. King County is not a water utility and does not provide potable water to citizens in the region. However, it plays an important role in the coordination or linking of water supply and growth. In some ways a lot of rubber hits the road (or issues arise) when King County looks at local water plans or sewer plans for consistency with the comprehensive plan. Linking the development, with the water use and the land use to ensuring that consistency is the goal. The municipal water law of 2003, as codified in part at RCW 43.20.260, created a strong link of water planning to consistency with the local government comprehensive plan. King County has an ongoing discussion with the State Department of Health and local water purveyors as to what consistency means and how it is evaluated. If you are interested in the public water aspect of the KCCP, I encourage you to look at section H of chapter 7 as it contains most of the policies on point for delivery of water and linkage to other statues and planning actions. 〰

For more information or to participate in the public review process for the KCCP, please visit the King County Council web site at www.metrokc.gov/mkcc/compplan for additional information. Any views and opinions expressed herein are all Steve's and do not reflect positions of King County.〰

Montgomery Speaks at Joint AWRA-SINES Meeting

Stan Miller

On Wednesday March 12, 2008 the Washington section opened a new chapter in communication with water resources professionals across the state. At a meeting cosponsored by the Spokane-based Society of Inland Northwest Environmental Scientists and AWRA-WA, some 60 environmental professionals and guests came together to hear Dr. David Montgomery discuss his latest book Dirt; The Erosion of Civilization. Dr. Montgomery is the Director of the Quaternary Research Institute in the College of Earth and Planetary Science at the University of Washington. After earning his PhD at UC Berkley, Montgomery joined the faculty at the University of Washington in 1991. In addition to Dirt, Dr. Montgomery authored an earlier work, King of Fish, and co-edited The Restoration of Puget Sound Rivers.

Common wisdom has taught for decades that clear cutting forests for agriculture results in increased erosion. In Dirt, Montgomery pursues the alternative thesis that the plow, not the axe is responsible for the increased soil erosion that has followed the rise of human civilizations around the world. Plowing exposes the bare soil to erosion by the forces of wind and rain.

Using results from the emerging field of study, geo-anthropology and modern scientific studies, Montgomery traces parallels of increasing rates of erosion in ancient and modern cultures. Examples from the most ancient civilizations in the Middle East, the Mayan and Incan civilizations in Central and South America and the modern "dust bowl" of the 1930's U.S. Midwest all point to the plow as the causal factor in soil loss. Including the loss of soil in the neighboring Palouse Hill of southeast Washington stimulated considerable local interest. While acknowledging a multitude of factors leading to the demise of civilized cultures, Montgomery argued that loss of agricultural productivity, the ability to feed their people, was a factor in the decline of most civilizations. The average 1000-year span of most civilizations closely parallels the time needed for the land to lose its topsoil under cultivation.

Dr. Montgomery closed his formal presentation with the suggestion that humanity faces three major concerns that must be addressed by the end of this century: climate change, the availability of fresh water, and soil loss. Failure to address any one of these in a productive way could end the way of life we enjoy today.

A lively discussion followed the presentation. Local professionals were quick to note that as Dr. Montgomery had discussed earlier, better methods of farming are available and are being implemented in this region. One questioner wondered about the effects of the current trend toward pulling land out of the Conservation Reserve program to plant in corn and wheat now that prices are up. It was noted that as these lands qualified as CRP lands because of their susceptibility to wind erosion only, the best conservation tillage approaches should be used if they are returned to cultivation.

All present agreed that this was a very fruitful collaboration and will likely happen again. Hopefully, next year, another collaboration will lead to a second well-received event.〰

Seattle Area Rainwater Catchment Water Right Permit

Andrew B. Dunn, Department of Ecology Water Resources Program

Background

Unlike Oregon, Washington state water law does not currently have any exemptions for the capture and beneficial use of rainwater. Since water resources are defined as, "all waters above, upon, and beneath the surface of the earth, located within the state and over which the state has sole or concurrent jurisdiction" (RCW 43.27A.020), the Department of Ecology (Ecology) has interpreted that this includes rainwater and has determined that its regulation falls under the surface water code (RCW 90.03). The Washington Legislature has wrestled with the regulation of rainwater for several years, focusing on establishing a permit exemption in the water code for a certain scale of rainwater catchment. However, no consensus has been reached on an exemption and no water code changes relating to rainwater capture have passed. Ecology has been exploring ways to address rainwater permitting issues administratively with different local communities. This article highlights one effort to address the permitting issue with the City of Seattle.

As interest in Green building and LEED certification has increased, Ecology and Seattle Public Utilities (SPU) has been approached by architects and developers wishing to incorporate rainwater catchment and use into their buildings. After explaining the nuances of water law and the process for obtaining a water right, many groups scrapped their plans to use rainwater catchment.

SPU met with Ecology on the topic of rainwater catchment a number of times and it was through those meetings that SPU decided that they wanted to attempt to secure a water right permit for rainwater catchment for the benefit of property owners, architects, developers, citizens, the city, and the environment. Ecology reviewed the water code and agreed that we could issue a permit for rainwater capture to a municipal utility under the water code.

The Permit

SPU submitted water right application S1-28477 on January 30, 2007. Since Ecology is currently not processing new water right applications in Water Resource Inventory Areas 8 or 9 (Cedar-Sammamish and Green River basins), the decision was made by SPU to speed the process up by utilizing the cost-reimbursement process. SPU entered into a cost-reimbursement agreement with Ecology to hire a consultant to process their water right application.

In looking at the drainage and sewer network within the City of Seattle, three types of sewer systems were identified: sanitary, partially combined, and combined. In areas of the city served by the partially combined and combined sewers, all rooftop water is piped into the sewer, which ultimately ends up at a wastewater treatment plant before being treated and discharged to Puget Sound. In areas served by the sanitary sewer, the stormwater is routed through ditches and culverts under the influence of local topography to discharge into the nearest lake, stream, or marine water body. This assessment was important to the water availability and impairment requirements under the water code. For a detailed map showing the areas served by the different sewer systems, go to the SPU link at the bottom of this article.

As with all water right applications, Ecology had to make sure that the appropriation of water could pass the four tests of beneficial use, water availability, impairment, and public welfare before it could be approved.

Here's a summary of how the 4 tests were passed:

• Beneficial Use test –Use of water for municipal supply (non-potable domestic, commercial, industrial, irrigation, and other uses) is considered beneficial under the water code.

• Water Availability test – Legally, water was considered to be available because the captured rooftop water would not have otherwise made its way into any water bodies that are closed to future consumptive appropriation, such as Lake Washington. This test is why only areas served by the combined and partially combined sewer system could be included under this permit. Physically, when it rains, water is available on your rooftop.

• Impairment test – In looking at existing water rights in the area, it was determined that once the water enters the sewer system there are no water rights that will be impaired if the flow through that sewer system is reduced.

• Public Welfare test – When weighing the benefits of rainwater catchment and use under this application versus the potential for harming the public welfare, Ecology felt that it was not against the public welfare to issue this permit.

The annual quantity allocated as part of the water right was calculated based on average rainfall and estimated roof area at full build-out. Within the city the average annual rainfall is 33.6 inches per year. The rooftop area at full build-out, within the place of use, was calculated to be as much as 8,268 acres through the use of GIS. So, as a reasonable upper limit, it was calculated that 8,268 acres times 2.8 feet (33.6 inches) equals 23,150 acre-feet of water could potentially be captured and utilized under this permit.

Individual property owners in the place of use may choose to install a rainwater collection system under this permit, but they will not hold an individual water right. SPU will hold the water right and manage its development.

SPU will report an estimate of water use under this permit annually for the first 5 years and after that it will be incorporated into their water system planning process. SPU will not be required to report on rainwater systems outside of the City's Department of Planning and Development (DPD) or Department of Development and Environmental Services (DDES) permit processes.

Conclusion

I feel the primary benefits gained and to be gained through the issuance of this permit are:

• It simplifies utilization of rainwater for those covered by the permit. This gives clarity and legal coverage to those wishing to use rainwater, within the specified area, and will save time and money for both those entities and for Ecology since neither will have to devote resources to processing of individual rainwater collection and use permits.

• It allows for the creation of distributed stormwater management infrastructure through the voluntary installation of equipment to capture and retain precipitation falling on a rooftop. This system has little cost to the taxpayers, especially when compared to large-scale centralized infrastructure, and the reward to the participant for helping the community is the authorization to put that water to beneficial use.

• It has the potential to help reduce the storm pulse on the sewer system, which can help to reduce the incidents of combined sewer overflows and delay the need for constructing additional wastewater treatment plant capacity.

• It can offset some of the demand on the potable water supply system by using captured rainwater for non-potable uses. This is especially true during the high-demand summer months.

For a map of the areas generally covered under this permit, or for more information on utilizing rainwater under this permit, please go to:

http://www.seattle.gov/util/About_SPU/Water_System/Projects/RainwaterPermit/

If you have questions about this topic or would like to receive an electronic copy of the Report of Examination or Permit, feel free to contact me at the Department of Ecology, Northwest Regional Office, Water Resources Program (425) 649-7000.

The Board of AWRA WA seeks to provide through this newsletter a full range of views on water resource issues. Opinions expressed in this newsletter do not necessarily reflect the views of individual Board members, the section membership, or their employers.

The Air & Waste Management Association and the Canadian Water Resources Association present a symposium on:

Changing Climate, Uncertain Futures, & Evolving Practices

Vancouver, B.C.
April 21-23, 2008

One of the greatest climate change challenges facing British Columbia and the Pacific Northwest is applying uncertain predictions to engineering problems that demand immediate analysis and decisions regarding future impacts. In response to this challenge, local chapters of the Air & Waste Management Association (A&WMA) and the Canadian Water Resources Association (CWRA) are organizing a symposium to provide some guidance to practitioners on utilizing the available data for decision-making and understanding its limitations.

Monday, April 21
Half-Day Concurrent Courses
Regional Climate Downscaling
Water Power Resource Modeling with AnemoScope

Tuesday, April 22
Climate Change Science
Climate Scenarios & Impacts on Physical Processes

Wednesday, April 23
Physical Processes & Secondary Impacts
Assessment, Practices, & Guidelines

Registration and full agenda at:

www.climatesymposium.com

Coho Pre-Spawn Mortality around Puget Sound

February 28, 2007 Dinner Meeting Review

Steven Hughes, URS Corporation

AWRA-WA was proud to host Nathaniel L. Scholz, a research zoologist with the National Oceanic and Atmospheric Administration (NOAA), Northwest Fisheries Science Center (NWFSC), as this year's first dinner speaker. Mr. Scholz manages the Ecotoxicology Program at the Northwest Fisheries Science Center in Seattle, and researches the effects of non-point source pollution in the form of stormwater runoff as one of the most important threats to coastal ecosystems in the United States. The dinner meeting was held at the Pyramid Brewery across from SAFCO Field. The event was well attended with over 30 people in the audience.

Mr. Scholz began his talk by describing how the NWFSC studies living marine resources (e.g., salmon, groundfish, and killer whales) and their habitats in the Northeast Pacific Ocean, primarily off the coasts of Washington and Oregon and in freshwater rivers and streams in Washington, Oregon, Idaho, and Montana. For the past several years, NOAA's national Coastal Storms Program (CSP) has sponsored research in the Pacific Northwest focused on stormwater quality and the health and viability of salmon, including threatened and endangered species. He then turned his attention to the primary focus of his talk, current research on the recurrent die-offs of adult coho returning to spawn in Puget Sound urban streams.

There are 26 salmon and steelhead species currently listed as either threatened or endangered under the U.S. Endangered Species Act (ESA). ESA listed species include coho, chinook, chum, sockeye and steelhead. In the 1990's many urban streams in the Puget Sound area were restored to enable fish passage. However, post project monitoring is revealing that there are widespread die-offs of adult coho returning to spawn in the restored urban streams.

The die-offs, specific to coho, were documented in streams including Pipers Creek, Longfellow Creek, Thorton Creek, Fauntleroy Creek, and Des Moines Creek. Mr. Scholz presented video footage that was taken showing pre-spawning coho visibly disoriented and dying, while nearby chum appeared unaffected. Data collected in Longfellow Creek indicate that between 2002 and 2005 the pre-spawning mortality (PSM) ranged from 66% to 86% of female coho. In 2002, Fortson Creek, a non-urban creek had a PSM of less than 1%. Findings indicate that the coho PSM is a recurrent event, specific to coho salmon and likely tied to water quality.

Mr. Scholz discussed research on water quality as a cause of PSM. The findings indicate that degraded water quality plays a significant role in PSM:

- Pre-spawn mortality is closely associated with small streams that are receiving waters for urban stormwater discharges.
- Symptomatic fish show signs of acute neurological distress, and coho often die within hours of entering spawning habitat.
- Dead fish show no signs of disease or pathogens that might be expected to be lethal. Conventional water quality parameters (e.g., temperature, dissolved oxygen) are also unlikely to be involved.
- Initial evidence indicates that the severity of pre-spawn mortality is linked to the amount and timing of fall rains. In certain years (i.e., 2002), fish only survived to spawn after several rain events.

Mr. Scholz then described ongoing studies and their efforts to use correlate land use to PSM. Results obtained thus far indicate that PSM rates are strongly correlated with road density, and that a large area of the Puget Sound is affected. However, the specific substance(s) causing the PSM of coho have not yet been identified.

The second half of the talk focused on research into embryonic development, population modeling, and the effects of PSM on potential fish extinction. Research is showing that fish at sensitive life stages may be much more vulnerable to chemical contaminants than previously appreciated, toxic runoff via stormwater has the potential to undermine habitat restoration efforts, and wild coho populations are at risk from ongoing and future urbanization of coastal watersheds in the western U.S. Small quantities of dissolved copper, polycyclic aromatic hydrocarbons (PHAs) are being found to have sub-lethal impacts on embryos and fish behavior, and pesticides occurring as mixtures appear much more toxic than single pesticide contaminants.

Ongoing research will focus on clarifying the role of toxics in stormwater as a limiting factor, forecasting threats to wild populations, exploring the interplay between regional climate change and urbanization as current and future drivers for toxic terrestrial runoff, and researching cost-effective mitigation strategies.

Thanks Nat for a very engaging presentation and discussion. We look forward to learning more about this issue. ≈

AWRA Student Section Spring Snowshoe Odyssey Saturday/Sunday – April 5/6

YOU:

- Beg, borrow, steal snowshoes ($30 at R.E.I or "free" checkout with $30 year-long membership to UW Climbing Club)
- Bring food and minimal camping gear to UW at 7:00am on April 5 (contact below if unsure about gear)

WE:
(American Water Resources Association Student Chapter):

- Drive to Hex Mountain or similar snowshoeing area for a day of snowshoeing and snow education
- Drive to camping area for overnight camping, rain or shine
- Provide a safe, fun introduction to snowshoeing and snow-related issues in the Cascades

Contact: gleque@geoengineers.com

Enjoy a bird-watching weekend along the bays, estuaries and beaches near the Strait of Juan de Fuca at the 2008 **Olympic Peninsula Birdfest** in **Sequim April 4-6**. The fifth annual festival, sponsored by the Olympic Peninsula Audubon Society, Dungeness River Audubon Center and Jamestown S'Klallam Tribe, offers a full slate for beginning birders, experts and those who just enjoy the outdoors. Events include guided birding trips, boat tours, silent auction, salmon banquet and raptor presentations. For more information, call 360-681-4076 or visit the website at http://www.olympicbirdfest.org.

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2008 Membership / Change of Address Form

(↖ please circle, as appropriate ↗)

Annual membership in the state chapter costs $25.

Name_____Position_____Affiliation_____

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❑ Please indicate if you prefer to receive your newsletter electronically.

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You will be contacted by a board member.

2008 Membership Dues: $25.00. **Checks only.** Please make payable to **AWRA Washington Section**.

Mail to: American Water Resources Assoc. WA. Section
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The American Water Resources Association is a scientific and educational non-profit organization established to encourage and foster interdisciplinary communication among persons of diverse backgrounds working on any aspect of water resources disciplines. Individuals interested in water resources are encouraged to participate in the activities of the Washington Section.

Special Thanks!
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