AWRA
American Water Resources Association

May/June/July 1996
Newsletter

Washington Section

Upcoming Events

There will be no August Dinner Meeting.

Look for details about the September Dinner meeting in the next edition.

Start planning early to attend the Annual Fall Conference this November.

PRESIDENT S NOTES

by Rodney Sakrison, President, AWRA Washington Section

The past two months have resulted in fruitful contacts with parallel organizations in British Columbia and Oregon. We were contacted by the Canadian Water Resources Association British Columbia Branch in regard to the *Watercourses: Getting on Stream with Current Thinking* conference they are holding this fall. As mentioned in the last newsletter, we were also contacted by the Oregon Chapter of the American Institute of Hydrology, and we are now an active co-sponsor of the fall conference on *The Flood of 1996* to be held in Portland, Oregon on October 7 and 8. You should have already received the conference brochures that we distributed on behalf of these organizations.

As I read about the British Columbia Branch in their newsletter, *Runoff*, I was impressed by the role they play in Canadian water resources management. In addition to holding conferences, the BC CWRA has distinguished itself by making its views known, in a variety of ways, to governmental agencies responsible for water. A Water Issues Workshop was held by BC CWRA under contract to Environment Canada. The purpose of the workshop was to solicit views on future governmental water management strategies from the diverse participants representing government, industry, academia and non-governmental organizations. This approach was also followed on a national level for a CWRA report recommending future directions for water monitoring in Canada. I like what the Canadians are doing and think we can take note of their endeavours.

In this issue of our Newsletter, we welcome the thoughts of **Mark Shaffer**, a geological engineer with Associated Earth Scientists. Marc was intrigued by the comment in our newsletter that Ecology's Initial Basin Assessments had reported that base flows in Western Washington were declining in conjunction with increasing levels of urbanization. At my prodding, he agreed to write an exploratory article on the subject. Also in this newsletter is an article from Ecology's **Melanie Kimsey** about the *Implementation Guidance for the Ground Water Quality Standards.* **Adam Gravley**, a Washington Section board member and attorney with Preston, Gates and Ellis, introduces the topic for the June Dinner Meeting, the consolidated water rights permit litigation pending at the Pollution Control Hearings Board. Our speaker for the dinner meeting was **Rachael Paschal**, Director of the Center for Environmental Law & Policy, U.W. School of Law.

This newsletter is a publication of the Washington Section of the American Water Resources Association. It is published bi-monthly. This is a forum for members to share ideas and opinions; as such, opinions expressed in the AWRA Newsletter are those of the authors and do not necessarily represent the official position of the Washington Section of AWRA.

Announcements or articles are welcomed for the August/September/ October edition of the newsletter. The editor reserves the right to make changes for reasons of length, grammar, legality or clarity. The submittal due date August 12, 1996. Contact Teresa Platin at (206)-453-5000, or send submittals directly via the following methods:

FAX: 206-462-5957
Internet Mail:
tplatin@sea.ms.ch2m.com
(most document/graphic formats are acceptable)

JUNE DINNER MEETING

Rachael Paschal Speaks on Statewide Water Rights Issues at AWRA Dinner Meeting on June 27

On June 27 at 5:30 p.m., the AWRA hosted a dinner meeting at the Latitude 47° Restaurant in Seattle. Rachael Paschal spoke about statewide water rights issues and the hearing held earlier in the day before the Pollution Control Hearing Board. Ms. Paschal is the Director of the Center for Environmental Law & Policy ("CELP") and teaches water and environmental law at the University of Washington. As discussed in the accompanying article, CELP has appealed one of Ecology's recent permit decisions and is participating in the statewide issues hearing. Other persons involved in this important litigation were present to add different perspectives and initiate discussion.

At the time of this newsletter printing, details from the Pollution Control Hearing Board meeting and the dinner meeting are not available. However, these gatherings will be addressed in the next edition of the AWRA Newsletter.

Dinner meeting announcements were sent out well in advance of this event; however, if you did not receive one, please contact a board member to add your name to the mailing list.

UPDATE OF KING COUNTY SURFACE WATER MANUAL DINNER MEETING SETS HIGH STANDARD

The April Dinner meeting at the Latitude 47^{o} Restaurant was a big success, and based on the comments of some of the attendees, may have set a new standard for excellence. Bruce Dodds (Dodds Engineers, Inc.) and Curt Crawford (King County Department of Natural Resources) presented differing perspectives on the draft King County Surface Water Manual. Both are to be complimented for how well they handled the complicated subject. They added more dimension to the discussion by relating some of the background dynamics that have occurred during development of the new manual.

Bruce Dodds “went on record” as not opposing the new manual; in fact, he and Crawford can be expected to go together before the King County Council in support of the manual. In Dodds words, “We (the Master Builders) are not entirely happy with the manual, especially the cost impacts, but are agreed that it could have come out much worse.” The presentation was very timely; the King County Council is just beginning to schedule adoption hearings on the manual.

LOWERED SUMMER BASE FLOWS Opening a Dialogue About Causes

by Mark Shaffer, Associated Earth Sciences, Inc.

Rodney Sakrison's "President's Notes", in the March/April 1996 issue of this Newsletter, contains a proposition I find highly thought-provoking and more than a little interesting. The statement of note, talking mainly about recent flooding in western Washington and the Pacific Northwest, reads as follows "It has been observed that the hydrology of urbanizing watersheds has vastly changed from previous conditions. We are experiencing higher peak flows from impervious surfaces *and correspondingly lower base flows during the summer low-flow period*." While I think no one will argue with higher peak-flows as a fact of life, I submit that, as is true with so much in hydrology, impacts of urbanization on low-flows "ain't that simple." I called Rod to discuss this question and straight-away found myself committed to writing this critique, an unsuspecting tool of Rod's presidential delegating skills!

It turns out Rod's source for the low flow statement was Ecology's *Initial Watershed Assessments* for the Snohomish and Green-Duwamish river basins, completed in early 1995. These reports and others of the *Initial Watershed Assessments* series document a general decline in dry-season flows of certain streams over the past 10 to 30 years. There are various possible causes of these declines, and the assessments note that it is difficult to separate the effects of generally drier climatic conditions during recent decades from other potential influences on base flows. Ground water pumping may also affect base flows in some areas, but I'll leave that to another discussion.

The trend in cumulative departure from annual mean precipitation at Sea-Tac was generally downward from 1973 through 1994, after rising in the preceding decade. Base flow may be disproportionately influenced by reduced rainfall. During drought periods, infiltration typically decreases at the same time that potential evapotranspiration increases. Base flow is, to some degree, related to the difference between these elements of the water budget, albeit with a variable time lag. It will be interesting to see the trend in base flows if the current wet conditions persist for the next few years.

Climatic trends aside, conventional wisdom says increased impervious surfaces = decreased infiltration/recharge = decreased base flows. But exactly where in our maritime-Mediterranean climate can we document this effect of urbanization on a watershed scale? I don't know of anyone who has attempted to rigorously compare pre- and post-development gauged base flows in our particular climatic and geologic environment. I do know of a few candidate basins: Leach Creek near Tacoma seems to show the "expected" response of increased peak and decreased base flows subsequent to urbanization. However, surface diversions in that basin may be influencing the base flow data.

Two other basins, Juanita and Mercer Creeks in suburban King County, appear to show distinct increases in base flow subsequent to urbanization, counter to climatic trends. Conventional wisdom responds "it must be return flow from lawn irrigation or septic systems, especially if some water supply is imported from deep aquifers or a different basin." I don't know if this is a partial answer, but there are other possibilities: excess storm water runoff diverted to low areas, infiltrated, or stored temporarily in detention or retention basins may increase recharge; impervious surface runoff may be "focused" by downspouts, outfalls, drainage ditches, and uncurbed pavement into small areas, locally extending the recharge season by maintaining saturation into late spring or summer; bare or grassed surfaces intercept and transpire less water than native vegetation, also extending the recharge season; pavement is typically as permeable as glacial till; footing drains and utility corridors with permeable backfill may act like recharge galleries.

My point is that urbanization's impact on ground water recharge and base flow is just not as simple as the conventional wisdom. Probably someone reading this has looked closely at a basin subject to urbanization, or at some of the factors involved. This is an invitation to begin a dialogue!

Note: Mark Shaffer is a geological engineer with Associated Earth Sciences, Inc., Bainbridge Island; TEL (206) 780-9370, FAX (206) 780-9438.

IMPLEMENTATION GUIDANCE FOR THE GROUND WATER QUALITY STANDARDS

by Melanie Kimsey, Hydrogeologist, Washington State Department of Ecology Water Quality Program

The Ground Water Quality Standards (Chapter 173-200 WAC) were adopted in December 1990. While the standards provide the first comprehensive approach to protecting ground water quality in Washington State, the regulation does not specifically address how it should be implemented for various types of activities. The Implementation Guidance for the Ground Water Quality Standards explains and interprets the standards, providing clear direction to promote consistent statewide implementation for all activities that have a potential to degrade ground water quality. This document was developed with the assistance of an external advisory workgroup. The group was comprised of representatives from various business interests, environmental organizations, cities, counties and other state agencies. The Implementation Guidance document was also extensively reviewed by The Department of Ecology (Ecology) and other interested parties.

A regulatory approach to protection and preservation, the Ground Water Quality Standards are preventative in nature and protect all waters in the saturated zone. The goal of the standards is to maintain a high quality of ground water and to protect existing and future beneficial uses through the reduction or elimination of contaminants discharged to the subsurface. The goal is achieved through three mechanisms, as follows.

1. AKART - all known, available and reasonable methods of prevention, control and treatment. All wastes must be provided with AKART prior to entry into the State's waters, regardless of the quality of water.
2. The antidegradation policy, mandating the protection of background water quality and preventing the degradation of water quality which would harm a beneficial use or violate the Ground Water Quality Standards.
3. Human health and welfare based standards, including numeric and narrative standards.

The standards affect all activities that have a potential to impact ground water quality. This includes both point source and nonpoint source activities. Activities that are regulated by these standards include municipal wastewater treatment facilities, surface impoundments, industrial facilities, ground water recharge projects, land application projects, mines, landfills, injection wells, agricultural activities, and septic systems.

The Implementation Guidance document applies the Ground Water Quality Standards for all activities regulated by Ecology that have a potential to contaminate ground water. It applies to only those activities not covered by another regulation, general permit, guideline or BMP, including ground water protection provisions. Ecology will develop memorandums of understanding with other regulatory agencies where Ecology does not have direct regulatory oversight for activities such as agriculture, small on-site sewage systems and solid waste landfills. These activities are not necessarily required to use the guidance to implement the standards. Proponents of all activities that may impact ground water quality have a legal obligation to not violate these standards regardless of whether they are directly regulated by Ecology through permits or through other regulatory mechanisms.

There are no traffic jams when you go the extra mile. *nonymous*

UPCOMING HEARING TO ADDRESS STATEWIDE WATER RIGHTS ISSUES IN CONSOLIDATED PERMIT LITIGATION

by Adam Gravley, of Preston, Gates and Ellis

In January and February 1996, the Department of Ecology ("Ecology") issued over 500 water rights permit decisions in several basins around the state. Roughly half of Ecology's decisions

were denials. (Interestingly, Ecology approved most of the permit applications in eastern Washington and denied a majority of the western Washington applications.) Approximately a quarter of the decisions were appealed to the Pollution Control Hearings Board ("PCHB"), the body that reviews contested permit decisions made by Ecology. The PCHB consolidated the appeals in each basin (or "WRIA", water resource inventory area) for hearing because the appeals share common issues. Thus, there are approximately 120 water rights appeals grouped together in 13 basins, for which the PCHB has scheduled hearing dates during the late summer and fall.

The origins of these permit decisions can be traced to at least mid-1994 when Ecology used $500,000 from the Governor's emergency fund to commission "watershed assessments" in selected basins. The stated purpose of the assessments was to allow Ecology to "batch process" applications rather than research each one individually. At the time, Ecology's Water Resources Program had suffered staff and budget cutbacks that contributed to a large water right permit application backlog. Ecology identified the batch system, supported by the information gathered in the watershed assessments, as a more efficient way to make decisions.

Almost all of the appeals concern groundwater applications that Ecology disapproved on grounds that the proposed withdrawals would harm surface water bodies. Their regulations provide for minimum water levels in most streams and lakes. Ecology assumes that groundwater sources are connected to -- or in "hydraulic continuity" with -- surface water. Thus, Ecology concluded that the groundwater applications, if approved, would make it harder to meet the minimum flows and would impair existing water rights and instream interests.

Continued on Page 6...

1997 FELLOWSHIP ANNOUNCEMENT

The Washington Section of the American Water Resources Association (AWRA) is seeking nominations for a 1997 Fellowship Award. The Fellowship Award provides $1,500 to support the work of a full-time student completing an advanced degree in an interdisciplinary water resources subject. In addition to the cash award, the Fellowship recipient will receive a one-year membership in both the National AWRA and the State Section, a one-year subscription to the Water Resources Bulletin, and admission to the State Section Fall Conference.

During the first week in April, information on the Fellowship was mailed to graduate schools and college and university departments having water resources-related programs. Section members are asked to encourage deserving students to apply for the Fellowship. Note: Nomination for consideration for the fellowship is to be made by the chair of the academic department where the graduate work will be performed. Information can be obtained from graduate schools or directly from the Washington State Section by contacting:

Stan Miller, Fellowship Committee Chair
Washington State Section, AWRA
1329 S. Ferris Court
Spokane, WA 99202
(509) 456-3600

UPCOMING HEARING (continued)

The permit applicants contesting Ecology's decisions have raised numerous challenges. From a substantive standpoint, the appellants challenge Ecology's assumptions about the interrelationship of ground and surface waters and the resulting conclusions about water availability and impairment of other uses. The appellants also question whether Ecology had adequate legal authority and complied with procedural requirements in making the permit decisions in question. A pivotal issue in the lawsuits is the scope and meaning of water rights statutes enacted by the legislature and regulations adopted several years ago by Ecology.

In addition to the applicants and Ecology, Indian tribes have joined some of the cases to protect their water rights and fishery resources, and the Center for Environmental Law & Policy ("CELP") has filed an appeal, on "public interest" grounds, of one Ecology permit regarding flows in the Columbia River.

In the next event in the consolidated water rights litigation, the PCHB will hear arguments on "statewide issues" on June 27. A few weeks ago, attorneys for a group of appellants (of which the author is a member) asked the PCHB to hold a separate hearing on key threshold legal issues common to the cases in all of the individual basins. The PCHB agreed and, after a hearing at which all parties proposed issues, set a hearing for June 27 to address statewide issues. The statewide issues (as stated by the PCHB) include the following.

- Is there a statewide legal standard for determining that a proposed groundwater withdrawal is in "hydraulic continuity" with a surface water body; and if so, what is the standard?

- What legal standard governs decisions by Ecology (or the Board) to impair preexisting senior water rights?

- Where minimum flows have been established by regulation, may a groundwater application be denied, under the Water Code, if the source is found to be in continuity with those regulated surface waters?

- Was Ecology required to adopt a formal rule under the Administrative Procedures Act (APA) prior to denying groundwater applications based on hydraulic continuity with surface waters? Has Ecology effected de facto closure of any basin without following the formal rulemaking procedure of the APA?

- May the availability of water for an application for appropriation be established using data on the number of days on which minimum in-stream flows established by regulation have not been met?

- May cumulative impacts be considered in a water right application, and if so, what is the appropriate legal standard to apply to that consideration?

- In determining water availability, must the Board consider impacts on water quality?

- In reviewing Ecology's permit decisions, must the Board consider impacts to critical habitat for fisheries?

The appellants, Ecology, the Muckleshoot and Tulalip tribes, and CELP are currently briefing these issues. The hearing on these statewide water rights issues will be the topic for the next AWRA dinner meeting, which will also take place on June 27. (See the announcement on page 2 of this newsletter for details.)

Note from the Editor: This article was written and submitted prior to the June 27 PCHB hearing. Regrettably, the newsletter production schedule could not ensure publication before the hearing or dinner meeting.

An Important Message About Membership

All members-in-good-standing (dues paid) for 1996 receive monthly newsletters. Courtesy copies of the newsletter are mailed to some individuals, including members from the past two years.

If you have not registered yet for 1996, but would like to ensure that you continue to receive this newsletter and other benefits of membership, please complete and mail the membership form at the end of this publication. If you would like to have your name removed from our mailing list or a correction made to your mailing label, you may also use the membership application (with a short note detailing your request).

DEADLINE FOR $20K IN DATA GRANTS EXTENDED TO OCTOBER 31, 1996

Hydrosphere Data Products, Inc., Boulder, Colorado, announced that it will award $20,000 in data grants during 1996 to support environmental research worldwide. Researchers may immediately contact the company for grant applications. Applications for 1996 grant awards should be submitted to Hydrosphere before October 31, 1996. Applications will be evaluated on a first-in-first-out basis.

Grant recipients will receive free use of titles from Hydrosphere's commercial library of ready-to-use environmental databases on CD-ROM. Its Hydrodata and Climatedata CD-ROMs feature USGS hyrdologic, NOAA climatologic, EPA water quality, and other environmental databases. A complete listing of topics is available from the company.

The criteria for grant awards will be the potential of proposed or ongoing research to yield theoretical advances or technological innovations that encourage the establishment of sustainable development public policies or professional practices. Applicants must also demonstrate the inability to obtain necessary data with existing research resources.

The company's discs and its custom environmental database software will allow researchers to more rapidly locate, examine, and export data relevant to their work. The $20,000 grant allowance is approximately equivalent to the use of 80 separate titles for one year.

Sample research areas previously supported by Hydrosphere include the fate and transport of contaminants, endangered species protection, watershed ecosystems, hydrologic decision support systems, distributed hydrologic models, riparian habitat rehabilitation, and wetlands restoration. This data grant program expands and formalizes the company's commitment to support environmental research worldwide.

Contact: Tim Smith
Hydrosphere Data Products, Inc.
(303) 443-7839
E-Mail: tim@hydrosphere.com

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 to CH2M HILL, Bellevue, for their word processing and graphics support on this newsletter.

AWRA WASHINGTON SECTION
1996 MEMBERSHIP APPLICATION

NAME:

ORGANIZATION:

ADDRESS:

☐ Check if you would like to be actively involved on a committee during 1996. You will be contacted to determine what committee involvement you would like.

1996 Membership Dues (through October 1996): $25.00. Please make check payable to **AWRA Washington Section**.

Mail to: American Water Resources Association Washington Section
c/o Alan Bennett
14422 - 120th Place NE
Kirkland, WA. 98034-1153

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14422 - 120th Place NE
Kirkland, WA 98034-1153

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