SIERRA CLUB
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Upper Columbia River Group

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Spokane, Washington 99210
www.washington.sierraclub.org/uppercol/ucr/group/home.html

March 23, 2010

Dustin Bilheimer
Department of Ecology
Via e-mail to dbil461@ecy.wa.gov

Re: Sierra Club Spokane River DO TMDL
Dispute Resolution Documents

Mr. Bilheimer:

Enclosed please find copies of the pertinent excerpts of documents referenced in Sierra Club's May 15, 2010 dispute resolution letter regarding the Spokane River Dissolved Oxygen TMDL. This letter serves as an index to those documents.

(1) Sierra Club Comments on the DO TMDL

1.1 Sierra Club to Ecology, Comments on Draft 4, Spokane River DO TMDL (10-30-09)

1.2 Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07), pp. 1, 44-48, and Appendices Index pp. 1-2, 5, and including the following Appendices

- App. B:6, Keta Waters Review of Final (6-27-07) HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (10-8-07)
- App. B:11, PBSJ Review of Draft HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (6-27-06)
- App. B-12, PBSJ Review of Draft HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (1-15-07)
- App. F:1, Letter from Richard Koch, Dept. of Ecology to Bruce Rawls, Spokane County (2-8-07) and from Drea Traeumer, Dept. of Ecology to Bruce Rawls, Spokane County (3-14-07)
- App. F:4, Letter from Michael Gearheard, US EPA to David Peeler, Dept. of Ecology (6-16-04)
- App. F: 5, E-mail, John Storman to Dave Peeler (5-23-06) with attachment (Septic Tank and Drain Field Design for Nutrient Control (ECY 3-8-06))
- App. F:6, Letter from Sierra Club to Ron Lavigne (3-7-06)
- App. G-5, E-mail from Cusimano to Knight, et al. (7-8-05)

1.3 Sierra Club Comments on Draft 3 of Spokane River DO TMDL (May 2008) (6-24-08), pp. 1, 10, 21

(2) Sierra Club Comments to Spokane County

2.1 Sierra Club to Spokane County Commissioners (12-1-08), with Appendix 2 (please note that Appendix 1 documents are included as Appendices B:6, B:11, B:12, and F:1 to Document No. 1.2, and that Appendix 3 documents are not included)

- Letter, Dept. of Ecology to Spokane County (11-7-03)
- Letter, Dept. of Ecology to Spokane County (8-2-04)
- Letter, Dept. of Ecology to Sierra Club (8-18-04)
- Letter, Spokane County to Dept. of Ecology (8-12-08)

2.2 Sierra Club comments on Spokane County WWTP DEIS (5-24-04)
2.3 Spokane County Onsite Sewage Disposal Systems Phosphorus Loading Estimate (Final, June 27, 2007) (Please note that our 3-15-10 dispute resolution letter erroneously referred to the 2006 draft of this document. It was our intent to refer to the final, which may be accessed on-line at http://www.spokanecounty.org/utilities/rptdoc/2008jan/04-B%20Septic_Phosphorus_Study-FINAL.pdf)
2.4 Sierra Club comments on Spokane County WWTP Facilities Plan (2-7-07) (Please note that our 3-15-10 dispute resolution letter did not reference this document.)

(3) Other Documents

3.1 Letter, James Bellatty, Dept. of Ecology to Bruce Rawls, Spokane County (3-14-08)

Sierra Club has submitted many comments and documents regarding the various proposals for the Spokane River TMDL, Managed Implementation Process, Use Attainability Analysis and associated processes. We reserve the right to utilize all documents we have prepared and submitted over the years, along with documents prepared and submitted by third parties. This is particularly important, as the decision to include a waste load allocation in the TMDL for the County implicates fundamental aspects of the TMDL, including calculations regarding groundwater phosphorus loading to the River, tributary load allocations, and the Avista "responsibility."

Thank you for the opportunity to provide these documents to the Dispute Resolution Panel.

Yours very truly,

Rachael P Osborn

Rachael Paschal Osborn
Spokane River Project Coordinator

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.1 Sierra Club to Ecology, Comments on Draft 4, Spokane River DO TMDL (10-30-09)

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October 30, 2009

James Bellatty & David Moore
Water Quality Section
Washington Department of Ecology
4601 N. Monroe
Spokane, WA 99205

Re: Sierra Club & CELP comments
Draft Spokane River and Lake Spokane Dissolved Oxygen TMDL
(Pub. No. 07-10-073 (rev. 9/09))

Mr. Bellatty and Mr. Moore,

These comments, submitted on behalf of Sierra Club and the Center for Environmental Law & Policy, are addressed to the latest draft of the Spokane River/Lake Spokane Dissolved Oxygen TMDL. Sierra Club and CELP have commented extensively on previous drafts of the Spokane River Dissolved Oxygen TMDL. We presume that previous comments are included as part of the administrative record for the September 2009 draft. Because those documents number in the thousands of pages, we incorporate by reference all previous comments and all attachments, including:

- Sierra Club comments on Spokane River Dissolved Oxygen TMDL (12-28-04)
- Sierra Club/CELP comments on 2007 draft DO TMDL for Spokane River (11/13/07)
- Sierra Club/CELP comments on May 2008 draft Dissolved Oxygen TMDL for Spokane River and Lake Spokane (6/24/08)

General Comments

1. The draft TMDL fails to set forth a "total maximum daily load."

The draft TMDL does not identify the pollutant loading capacity for the Spokane River Lake Spokane, daily or otherwise, and is therefore incomplete. The load allocation (termed "responsibility") assigned to Avista appears to represent a third of the pollutant loading to the Lake, but is not calculated. The document also fails to quantify and analyze Idaho-based phosphorus/nutrient loading to the Spokane River to establish boundary conditions.

2. The draft TMDL fails to provide reasonable assurance that the dissolved oxygen water quality standard will be attained.

    a. Overall assumptions of the TMDL are flawed.

Waste load allocations (WLAs) assigned to dischargers are premised on reduction of phosphorus (P) loading in the tributaries and P reduction or oxygen improvements to be accomplished by Avista. As discussed below, the load reductions assigned to the tributaries and Avista are unrealistic and unattainable. Nonetheless, these LAs will drive (are driving) the dischargers toward selection of less-than-optimal treatment technologies.

The Table 4 "projected flow rates" include as-yet unauthorized increase in flows at the City of Spokane WWTP and a new discharge permit for the Spokane County. It is improper for the draft TMDL to assign WLAs for this new loading to the Spokane River when the plan itself does not include reasonable assurance that water quality standards can be achieved.

b. Avista & Long Lake Dam

Sierra Club & CELP support the allocation of partial responsibility for the Lake Spokane dissolved oxygen deficit to Avista Corp. However, it appears that the allocated "responsibility" is exceptionally large and not attainable.

As noted in Comment 1 above, the draft TMDL is deficient for its failure to identify the quantity of phosphorus loading that equates to the dissolved oxygen deficit. We estimate through back-calculations that the load that is effectively being assigned to Avista equates to about 111 pounds per day. The TMDL states that the current load (2001 conditions) equals about 350 lbs/day of total P and that a 66% reduction (i.e., 231 lbs/day) will be achieved in 10 years. (TMDL, p. 24). Summing the WLAs (Table 4) and LAs (Table 5), the total reduction from those sources will equate to 120 lbs/day. Subtracting 120 from 231 indicates that Avista's responsibility will be 111 lbs/day. As an initial problem, the TMDL is deficient for failure to provide even this basic analysis. Avista's "responsibility" is in reality a load allocation or LA. Ecology is opening itself up to challenge by failing to properly identify and calculate this load as part of the standard TMDL equation (i.e., LA + WLA + MOS = TMDL).

Avista cannot reasonably be expected to reduce phosphorus inputs into the Spokane River by 111 lbs/day. Avista is not a discharger and has no control over phosphorus (and other oxygen-depleting substances) in the Spokane River. This is critical because there are no examples of nonpoint source reduction or lake oxygenation at the levels that this draft would require of Avista. The TMDL, and particularly the WLAs, should not based on unrealistic assumptions about Avista's ability to reduce P or oxygenate, absent data and analysis that demonstrates that Avista's "responsibility" can in fact be accomplished.

Based on the allocation of this large "responsibility" to Avista, the TMDL has reduced the waste load allocations (WLAs) to the dischargers and created a WLA for Spokane County's new treatment plant. If Avista is unable to remove 111 lbs/day of phosphorus from the system (or offset the oxygen deficit caused by that loading), then the WLAs assigned to the dischargers are too high.

The draft TMDL asserts that reasonable assurance is achieved because the terms of implementation for Avista's "responsibility" are set forth in the Managed Implementation Plan section of the document. But the MIP section does not identify or describe how Avista is expected to reduce phosphorus loading to Lake Spokane by 111 lbs/day. In fact, Avista is not required to produce a WQAP for two years. By deferring discussion of Avista's plan for phosphorus reduction (or oxygen induction), the TMDL effectively defers the day when it will become clear that Avista cannot achieve its assigned "responsibility."

Sierra Club and CELP support assigning an enforceable phosphorus reduction/oxygen improvement LA to Avista and included such a provision in our settlement of the Avista 401 Certification appeal earlier this year. What our organizations did not agree to was a shift of

responsibility for phosphorus control from the dischargers to Avista to such a degree that water quality standards cannot be attained.

c. Little Spokane River Load Allocation

When the Little Spokane River is flowing near baseline conditions, flow is largely derived from groundwater, and phosphorus concentrations are usually less than 10 ug/l. See Cusimano 2004, Table B-3. The draft TMDL estimate for Little Spokane phosphorus concentrations at 0.019 µ/l are inconsistent with Ecology's ambient data, and likely inaccurate. Moreover, the draft TMDL contains no analysis to support the conclusion that a 36% reduction from the actual low groundwater P concentrations could be achieved during the critical period. As a result, the draft TMDL does not contain reasonable assurance that phosphorus loading from the Little Spokane River can be reduced as set forth in Table 5 and as required to achieve attainment of water quality standards (and to allow liberal WLAs for and increased loading from the point source dischargers).

d. Hangman (Latah) Creek Load Allocation

The draft TMDL does not contain reasonable assurance that phosphorus loading from Hangman Creek can be reduced by up to 50% as set forth in Table 5, as required to achieve attainment of water quality standards for dissolved oxygen (and to allow liberal WLAs for and increased loading from the point source dischargers).

Department of Ecology water quality monitoring data for the station at the mouth of Hangman Creek reveal that phosphorus concentrations are very low. See http://www.ecy.wa.gov/apps/watersheds/riv/station.asp?sta=56A070, incorporated by reference.

The low concentrations (and associated P loading to the Spokane River) as measured in Hangman during the typical low flow, critical condition period raises the question of whether pollutant loading from Hangman could be significantly reduced as called for in the Spokane TMDL. Pollutant loading is a function of flow and concentration. Because flow in Hangman Creek will not be changed by any implementation activity, the only way to reduce loading by 50% is to reduce the concentration of P by 50%. The measured concentrations are already very low during dry conditions, and as a consequence, there is no reasonable assurance that the TMDL-mandated reductions can be achieved.

The June 2009 Hangman Creek Fecal Coliform, Temperature and Turbidity Water Quality Improvement Report (Ecology Publication No. 09-10-030, available at http://www.ecy.wa.gov/biblio/0910030.html and incorporated herein by reference), provides a detailed review of BMPs and other activities that may be used to control non-point source pollution in that watershed. The Hangman Creek TMDL, at Tables ES-8 and ES-9, pp. 29-30, indicates that best estimates for reduction in total suspended solids, which may serve as a surrogate for reductions in phosphorus, top out at 26% in the upper Hangman area (which is in Idaho and outside the reach of the DO TMDL) and average around 16% in the lower Washington reaches. The draft TMDL does not discuss these findings or indicate how Ecology has arrived at its estimates of up to 50% phosphorus reductions in Hangman Creek that are used as a basis for concluding that water quality standards in the Spokane River and Lake Spokane can be met. Reasonable assurance is not only absent, it is contra-indicated.

Finally, the new expansion of the critical season into March incorporates substantial new loading from Hangman Creek, inflating phosphorus loading presumably to support water quality trading or offsets However, March loading has not been shown to affect water quality in Lake Spokane. Moreover, averaging March loading from Hangman Creek over the course of several months (rather than month-by-month loads as was set forth in the 2004 TMDL) allows an averaging of tributary non-point source reduction benefits, which will not actually help reduce the harm to Lake Spokane.

3. The margin of safety is improper.

The "implicit margin of safety" (TMDL p. 40) is not rationally related to and does not address the actual and significant uncertainties in the plan, i.e., the questionably large load allocations assigned to the tributaries and Avista. Because there are serious questions as to whether these allocations can be reduced to the levels called for, the margin of safety should identify additional methods for pollutant load reductions. Use of the 10% exceedance flow as a margin of safety is irrelevant to the pollutant reduction uncertainties raised in the draft plan.

4. The "reasonable assurance" discussion is inadequate.

Despite excessive verbiage, the "reasonable assurance" section does not describe or analyze a basis for asserting that the phosphorus reduction percentages called for in the tributaries and the oxygen-deficit reduction activities assigned to Avista can in fact be accomplished. Flaws in this section include:

- The continuing reliance on the "Delta Elimination Plan" concept is misplaced, given that dischargers are not eligible for non-point source reduction credit until after tributary LAs are met. (Sadly, this new rule excluding discharger participation in non-point control is appropriate, given that this draft TMDL increases the WLAs for the point sources.) Given the improbability of reducing tributary phosphorus in the percentages called for in Table 5, Delta Elimination is now out of reach, and is certainly not a basis for finding reasonable assurance.
- While Sierra Club agrees with implementing a strategy of influent source reduction (e.g., dish detergent phosphate and fertilizer bans) as a strategy, no analysis is provided to indicate that such reductions translate to effluent reductions.
- Spokane County has prepared a reasonable study of reclaimed water, but, as discussed below, this program is undermined by allocation of an illegal WLA to the County plant. Likewise, the septic tank offset program will not comply with Washington's water quality offset regulation.
- Reference to the new Hangman Creek TMDL is appropriate, but there is no mention that that document indicates maximum reductions in TSS (which may serve as a surrogate for phosphorus) considerably less than what is required in this TMDL to achieve water quality standards.
- There is no analysis to connect the Lake Coeur d'Alene Lake Management Plan to phosphorus reductions in the Spokane River and Lake Spokane. Boundary conditions at Lake CdA indicate natural background concentrations, so it is unclear how nutrient reductions in that Lake will reduce Spokane River concentrations.
- Continued monitoring and assessment to determine whether water quality standards are or are not being achieved does not equate to reasonable assurance that they will in fact be achieved.

- The general reference to Avista's responsibilities under the 401 Certification does not provide reasonable assurance that Avista will be capable of meeting the requirements of this TMDL.
- The increase in Post Falls Dam spill is not a guarantee that those flows will remain in the River over time. Other factors, notably increased water right permitting in Idaho and increased groundwater pumping under Washington's municipal water rights is not discussed and will have a negative effect on instream flows.

In sum, the "reasonable assurance" section makes numerous unsupported statements about the benefit of various activities without providing analysis to demonstrate that most of the identified activities will have a positive impact on phosphorus concentrations or dissolved oxygen deficits. Feel good language does not equate to reasonable assurance, especially in this circumstance in which the dischargers have been granted higher effluent limits, future loading capacity, a new permitted source – all based on assumptions about non-point source reductions.

5. The WLAs must be water quality-based, not technology-based, limitations.

Because the TMDL does not demonstrate with reasonable assurance that water quality standards can be met through load reductions in the tributaries and through Avista's "responsibility," the WLAs assigned to the dischargers must be based on water quality-based limitations, not treatment technology capabilities (which are underestimated in the draft TMDL). The assignment of WLAs for projected (year 2027) flows and for a new county treatment plant is illegal.

6. Technology selection must be more stringent.

Notwithstanding that the WLAs should be based on water quality limitations, the WLAs assumed in this draft of the TMDL for the municipal wastewater treatment plants do not represent the performance of existing treatment technology. It is essential that this TMDL force the use of the best possible technology in order to (1) achieve the substantial phosphorus reductions necessary to attain water quality standards, and (2) minimize reliance on questionable LAs assigned to the tributaries and Avista.

Per Appendix J (EPA memo re treatment technology) facilities around the country are routinely achieving phosphorus effluent reductions substantially lower than the target 50 µ/l called for in this TMDL. As App. J notes, a number of these facilities are not required to achieve lower P limits and could possibly do better if such were required in the NPDES permits. The report also equates "less-than" values with reported values, leading to the assumption that plants are achieving worse performance than reported. Finally, it appears that analysis of P-reduction at other plants is based on year-round performance data, another factor that would tend to make average values worse. Because the Spokane River dischargers will be subject only to spring-summer effluent limits for P, assumptions about available technology should be based on appropriate seasonal data that is analyzed for best performance capability.

7. Spokane County is not eligible for a waste load allocation.

As set forth in Sierra Club's comments on the second draft of the DO TMDL, dated 11/13/07 at pp. 45-48, Spokane County cannot obtain a new NPDES permit to discharge into the Spokane River. It is improper to assign a waste load allocation or compliance schedule to

Spokane County, or to assume the efficacy of water quality offsets, for its as-yet un-built wastewater treatment plant. Given the assignment of unattainable load reductions to the tributaries and Avista, there is no new capacity for NPDES discharges into the Spokane River. Absent affirmative showing of new capacity, the draft TMDL improperly assigns a WLA to Spokane County.

From a policy perspective, it is particularly disappointing that the draft TMDL assigns a WLA to Spokane County because the County has recently issued its Reclaimed Water Use Study (Final Report, June 26, 2009) indicating good potential for end uses of reclaimed water from the proposed new treatment plant. See Spokane County Utilities Water Reclamation Program webpage, which includes substantial information, including the cited report, concerning reclamation and reuse of County WWTP wastewater, incorporated by reference, at http://www.spokanecounty.org/utilities/waterreclamation/content.aspx?c=2224. Assigning a WLA to the County raises false hopes that a critical season discharge permit is available and provides a major disincentive for aggressive pursuit of a zero discharge reclaimed water program.

8. Spokane County's water quality offset proposal is flawed.

The Spokane County offset proposal, premised on the "septic tank elimination program" is an improper basis for assigning a waste load allocation for the County's new wastewater treatment plant. As set forth in Sierra Club's 11/13/07 comments, the septic tank program does not qualify for water quality offsets as defined under Washington state's water quality standards, WAC 173-201A-450. Assumptions contained in the draft TMDL regarding existence, fate and transport of phosphorus in groundwater and consequent groundwater phosphorus loading to the Spokane River are incorrect. It appears that these assumptions derive from a recent Spokane County study, which contradicts and is unsupported by Ecology's own Dissolved Oxygen TMDL Technical Analysis and ambient data collection (Cusimano 2004).

For technical and legal reasons, the County's septic elimination proposal for water quality offsets is insufficient and will not support issuance of an NPDES discharge permit for the proposed new treatment plant.

Even assuming that the septic elimination program could overcome its technical and legal deficiencies, and would reduce phosphorus loading in groundwater and therefore in the Spokane River, the program represents "double-dipping" in the Little Spokane River (LSR) basin. LSR phosphorus is derived from SVRP Aquifer groundwater during the critical months. The 36% reduction of the LSR load allocation called for in Table 5 (even if possible and we do not believe it is) will require reduction in groundwater phosphorus concentrations. If the County is capable of reducing groundwater phosphorus discharges from the SVRP Aquifer to the LSR, it cannot claim offset credit for those reductions, because such reductions are already assumed to be a basis for assigning a WLA to the County in the first place.

We would further ask, if septic tanks are considered to be contributing phosphorus to surface water via groundwater, why are they not subject to NPDES permitting?

And further, why is Spokane County not required to impose a ban on construction of new septic systems? Instead, the County has moved in the opposite direction, loosening standards for requiring septic systems to connect to sewer lines and proposing an

amendment to the Spokane County Shoreline Master Program to allow septic systems to built closer to groundwater tables.

Thank you for the opportunity to provide comments on the September 2009 Draft Spokane River and Lake Spokane Dissolved Oxygen TMDL.

Sincerely,

Rachael Paschal Osborn
Spokane River Project Coordinator, Sierra Club

cc: U.S. Environmental Protection Agency
Spokane Tribe Water Quality Program

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2 App. F:1

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07)

App. F:1, Letter from Richard Koch, Dept. of Ecology to Bruce Rawls, Spokane County (2-8-07) and from Drea Traeumer, Dept. of Ecology to Bruce Rawls, Spokane County (3-14-07)

COPY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

February 8, 2007

Mr. Bruce Rawls, P.E.
Utilities Division
Spokane County Public Works Dept.
1026 West Broadway
Spokane, WA 99260-0430

RE: Spokane County Wastewater Facilities Plan Amendment - Draft of December 2006

Dear Mr. Rawls:

The draft Wastewater Facilities Plan has been reviewed and Ecology has a number of comments to assist in the completion of this portion of the Facilities Planning process.

Table ES-1 and Table 2-8: The winter effluent characteristics imply a shorter MCRT. Though we have discussed them, there is no written discussion of the treatment goals justifying the shorter MCRT. At other times there has been acknowledgement that public perceptions and the public interest in various pollutants (i.e. destruction of pharmaceuticals) need to be assessed and accounted for. That may justify a longer MCRT in winter. Also the lead bullet on page 6-6 recommends a minimum SRT of 15 days due to MBR operational considerations.

Table ES-3: The figure's title could benefit from a time reference.

Table 2-8 Potential Effluent Quality Requirements: This table should probably be deleted. It shows TP concentrations for the spring and fall that are much higher than will be allowed. The CBOD and TSS concentrations are higher than it is anticipated based on the draft TMDL and current model runs. While toxicity considerations may justify the ammonia concentrations allowed, the TMDL is also considering NBOD and lower concentrations are anticipated in the final output. It may be that this table misleads DBO RFP contract respondents.

Page 2-24: The opening paragraph says "To date, the summer permit season has not started before May 1." In the case of the Riverside Park Water Reclamation Facility, the summer season starts on or about April 15. The NPDES permits currently in draft are interpreting the Foundation Concepts summer season of April through October as beginning on April 1.

Page 2-24, the fourth bullet: The $CBOD_5$ limits and ammonia limits (or $NBOD_5$) will be based on the WLA of the final DO TMDL.

Page 2-25: The second bullet on temperature was written prior to Ecology issuing revised water quality standards. The following excerpt is from the revisions of December 2006.

(c) **Aquatic life temperature criteria.** Except where noted, water temperature is measured by the 7-day average of the daily maximum temperatures (7-DADMax). Table 200 (1)(c) lists the temperature criteria for each of the aquatic life use categories.

Table 200 (1)(c) Aquatic Life Temperature Criteria in Fresh Water

Category	Highest 7-DADMax
Char Spawning	9°C (48.2°F)
Char Spawning and Rearing	12°C (53.6°F)
Salmon and Trout Spawning	13°C (55.4°F)
Core Summer Salmonid Habitat	16°C (60.8°F)
Salmonid Spawning, Rearing, and Migration	17.5°C (63.5°F)
Salmonid Rearing and Migration **Only**	17.5°C (63.5°F)
Non-anadromous Interior Redband Trout	18°C (64.4°F)
Indigenous Warm Water Species	20°C (68°F)

(i) When a water body's temperature is warmer than the criteria in Table 200 (1)(c) (or within 0.3°C (0.54°F) of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F).

(ii) When the background condition of the water is cooler than the criteria in Table 200 (1)(c), the allowable rate of warming up to, but not exceeding, the numeric criteria from human actions is restricted as follows:

(A) Incremental temperature increases resulting from individual point source activities must not, at any time, exceed 28/(T+7) as measured at the edge of a mixing zone boundary (where "T" represents the background temperature as measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge).

(B) Incremental temperature increases resulting from the combined effect of all nonpoint source activities in the water body must not, at any time, exceed 2.8°C (5.04°F).

(iii) Temperatures are not to exceed the criteria at a probability frequency of more than once every ten years on average.

Please note that foot notes for WRIA 54 and 57 (the Lower and Middle Spokane River sections) have a different temperature equation: t=34/(T+9)

Temperature shall not exceed a 1-DMax of 20.0°C due to human activities. When natural conditions exceed a 1-DMax of 20.0°C, no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C; nor shall such temperature increases, at any time, exceed t = 34/(T + 9).

Page 2-27, section 2.7: It should be noted that for the anticipated reuse applications, water reclamation to Class A standards will include nitrogen removal.

Page 2-28: It is our understanding that the schedule for updating the Biosolids Rule is now projected to be June 2007.

Page 4-16: Please be advised that the draft NPDES permit will require additional source control of mercury. The current draft language is as follows:

> *The Permittee shall develop and submit to the Department of Ecology a Mercury abatement and control plan beginning with a Dental plan. The plan shall be expanded as the Department of Ecology develops and releases further guidance. The Mercury Control Plan shall be submitted to the Department of Ecology by December 1, 2008.*
>
> *Mercury Plan development guidance can be found at the following locations:*
>
> Ecology mercury web site http://www.ecy.wa.gov/programs/eap/pbt/mercuryplan.html
> For Dental Plan guidance http://www.ecy.wa.gov/dentalbmps/index.html
> Reduction plan guidance http://www.ecy.wa.gov/biblio/0303001.html

Chapter 5: It was noted that the Effluent End Use Alternatives does not include a Public Education element.

Page 6-6, section 6.3.3: The first bullet recommends a minimum aerobic SRT of 15 days for the MBR design. This generally implies nitrification, yet Table 2-8, Table 6-2 the bottom of page 6-15 and elsewhere indicate that at least in winter this may not be the case.

In addition, there is increasing interest from the public in various organics in wastewater such as endocrine disruptors and pharmaceuticals. Current research indicates that the longer SRTs typical for MBRs are effective in removing significant portions of these constituents.

Table 6-3 does not give information on alkalinity and pH. The City's RPWRF needs to add acid to control pH and is modifying the aeration basins and operations to nitrify/denitrify to add alkalinity and manage pH. For the county facility, the effluent alkalinity and pH should be checked. Discussion of pH, alkalinity, and nitrification/denitrification is also missing on page 7-2, page 9-8, and table 9-6.

Chapter 6 process schematics: While removal of nutrients with side stream treatment is a decision for the DBO team, if they could be at least encouraged to discuss pros and cons from their perspective, a better project might result.

Page 9-2, Pretreatment Focus on Metals: Discussion of mercury source control should be added.

Page 9-13: Please elaborate on the site remediation.

Page 9-15: Methanol addition is shown in the process schematics. However, the unit cost is not given on the top of the page, so it at least appears that the cost was omitted.

Table 10-1: With the previous wastewater facilities plan and EIS, the section 106 requirements were addressed. Does this table anticipate further section 106 studies for the forth coming water reclamation and reuse report?

Comments on Chapter 11 and appendix B will be forth coming in the near future.

These are my comments and suggestions at this time. If you have any questions or need any additional information, please do not hesitate to contact me at (509) 329-3519.

Sincerely,

Richard A. Koch

Richard A. Koch, P.E.
Water Quality Section

RAK:dw
Enclosure: page 106 and 107 of water quality standards for Spokane River
cc/enc: Dave Clark, P.E.; HDR Engineering Inc.
Dave Moss, P.E., Spokane Co. Utilities

March 14 2007

L(1)

N. Bruce Rawls, P.E.
Utilities Division
Spokane County Public Works Department
1026 W. Broadway
Spokane, WA. 99260-0430

RE: Draft Final County of Spokane's Wastewater Facilities Plan

Dear Mr. Rawls,

The Draft Final County of Spokane's Wastewater Facilities Plan Amendment was reviewed by Ecology, and comments were submitted on February 8, 2007 with the provision that comments on Chapter 11 (Phosphorus Management Plan) and Appendix B (Onsite Sewage Disposal System Phosphorus Loading Estimate) would be forthcoming in the near future. Please accept these comments into the public comment record that Ecology is now submitting. The following comments formalize the discussion that the County and Ecology had on February 28, 2007.

The Wastewater Facilities Plan was reviewed by Ecology to evaluate if WAC 173-201A-450 water quality offset conditions have been satisfactorily met. Our review suggests that there are offsets with the Septic Tank Elimination Program; however, there is uncertainty regarding the quantity and timing of the offsets. Satisfactorily meeting the following conditions of WAC 173-201A-450 is needed to address that uncertainty so that Ecology can approve the Wastewater Facilities Plan:

Water quality offsets may be allowed by the department when all of the following conditions are met:

a) Water quality offsets must target specific water quality parameters

b) The improvements in water quality associated with creating water quality offsets for any proposed new or expanded actions must be demonstrated to have occurred in advance of the propose action.

c) The technical bases and methodology for the water quality offsets is documented through a technical analysis of pollutant loading, and that analysis is made available for review by the department. The methodology must incorporate the uncertainties associated with any proposed point or nonpoint source controls as well as variability in effluent quality for sources, and must demonstrate that an appropriate margin of safety is included. The approach must clearly account for the attenuation of the benefits of pollution controls as the water moves to the location where the offset is needed.

d) Point or nonpoint source pollution controls must be secured using legal binding instruments between any involved parties for the life of the project that is being offset. The proponent remains solely responsible for ensuring the success of offsetting activities for both compliance enforcement purposes.

e) Only the proportion of the pollution controls which occurs beyond existing requirements for those sources can be included in the offset allowance.

f) Water quality offsets must meet antidegredation requirements in WAC 173-201A-300 through 173-201A-330 and federal antibacksliding requirements in CFR 122.44(l).

Comments

Chapter 11: Phosphorus Management Plan

Comment 1: The significance of offsets and requirements of WAC 173-201A-450, and how the Phosphorus Management Plan meets these requirements, is not apparent in Chapter 11. The need for offsets appears critical to the County's decision to focus on the Septic Tank Elimination Program offset opportunities; however, that strategy is not self evident. Please make the strategy self evident, particularly by including more detailed discussion of the significance and requirements of WAC 173-201A-450 and how each water quality offset requirement is met by the Phosphorus Management Plan.

Comment 2: Chapter 11 does not provide much detail on Reuse. While Ecology is aware that a further effort is planned in the near future, some discussion in terms of possible "what if" scenarios is appropriate.

Comment 3: A Wastewater Treatment Plant does not operate at the design effluent limitations immediately upon start up; therefore, please include a margin of safety to account for this is.

Appendix B: General Comments

Comment 4: Please add background information that describes the Spokane Valley – Rathdrum Prairie aquifer, including its characteristics (i.e. kinetics and transmissivity) and its interaction with the Spokane River.

Appendix B: Onsite Sewage Disposal systems Phosphorus Loading Estimate

Breakthrough Analysis

Comment 5: Please discuss the available methods to predict time to breakthrough, and why the selected methods were chosen.

Comment 6: Please include a breakthrough analysis that adheres to MDEQ methods and recommendations and does not include the use of Idaho Department of Environmental Quality (IDEQ) values, as follows:

- Use an effluent quality of 10.6 mg/L and an equivalent loading to groundwater of 6.44 lbs/day. Per MDEQ, "The default value for effluent phosphorus concentration from a subsurface wastewater treatment system is 10.6 mg/L. 10.6 mg/L is equivalent to 6.44 lbs/year for a single-family home that produces 200 gallons per day on average." (MDEQ 2005).

- Omit the use of IDEQ effluent quality of 12 mg/L and the equivalent loading of 7.3 lbs/yr. This information is not available, as it is currently out for public comment and should not be used until finalized (Barry Burnell, IDEQ, personal communication).

- Use a soil phosphorus adsorption capacity of 200ppm in calculations where site-specific information is not available. Per MDEQ, "The value of 200 ppm should be used unless

adequate information is submitted regarding the site-specific adsorption capacity of the soils beneath the subsurface wastewater treatment system." (MDEQ 2005).

- Include the variable 'Distance from Drainfield to Surface Water' in the breakthrough analysis.

Comment 7: Please add discussion on the rationale/justification for 1) omitting the variable 'Distance from Drainfield to Surface Water' and 2) modifying the values used in the breakthrough analysis currently presented in Appendix B.

Comment 8: Please add a summary table of breakthrough analyses performed, including inputs and results, so that the analyses may be readily compared.

Soil/Aquifer Retention Factor

Comment 9: Please discuss the available methods to predict groundwater attenuation, and why the selected methods were chosen.

Comment 10: Please use an alternate method to account for phosphorous attenuation in the groundwater. The soil/aquifer retention factor method applied in the current analysis is not scientifically defensible because it is not appropriate to apply this method in the Spokane River watershed. The soil/aquifer retention factors were developed using data from 47 north temperate lakes as part of an empirical phosphorus lake model developed by EPA (Reckhow 1980). Per EPA, "The result is a set of phosphorus export coefficients that are generally representative of the watershed conditions described." (Reckhow 1980). EPA further states, "A few limitations on the use of the model should be mentioned now. Since the model was constructed only from lakes within the north temperate zone, it should be applied only to lakes within this zone." (Reckhow 1980). The 47 north temperate lakes used to develop the model were located in Michigan (W. Reckhow, Duke University, personal communication).

Annual Average Groundwater Phosphorus Loading/Discussion and Summary of Loading Analysis

Comment 11: There appears to be a contradiction between Chapter 11 and Appendix B. Chapter 11 proposes that the Septic Tank Elimination Program will reduce phosphorus loading to the aquifer; however, Figures 2 and 3 in Appendix B suggest that phosphorus loading to the aquifer is increasing. Please discuss why phosphorus loading to the aquifer has increased during the on-going Septic Tank Elimination Program, what trend is expected in the future, and why the trend is expected.

Comment 12: Please discuss why fewer well sampling data were used for the 2006 estimate of aquifer loading as compared to the 2004 estimate, and the implications of using fewer data. The annual average groundwater total phosphorus concentrations were developed using inverse distance weighted interpolation of data collected from 69 wells in 2004 and 44 wells in 2006. The interpolation results were then used to estimate the annual average aquifer loading, with 10.7 lbs/day estimated using 2004 data and 32.0 lb/s day estimated using 2006 data. However, concentration data from 25 wells were not included in the 2006 interpolation and loading estimate. A review of Figures 2 and 3 indicates that these 25 wells were those with the lowest measured concentrations in 2004 (0 – 5 µg/L). Are these data available? If so, please include them in the 2006 loading estimate. If the data were omitted for a reason, please provide that rationale to Ecology. If the data are not available, please see the recommendations at the end of this letter.

Recommendations

- Evaluate and discuss groundwater flow paths, timing, and gaining/losing reaches of the Spokane River to refine the scope of the breakthrough analysis to only those septic tanks that are hydrologically connected to the river within the appropriate time.
- Determine local septic tank effluent quality.
- Determine the local phosphorus soil adsorption capacity.
- Determine the local phosphorus retardation factor to account for phosphorus attenuation in groundwater.
- Consider the effects of aquifer pumping, diffusion, and dispersion on phosphorus attenuation.
- Expand the well monitoring network to reinstate the 25 well sampling locations that were sampled in 2004 but were not sampled in 2006.

Thank you for the opportunity to provide comments, and Ecology looks forward to discussing our comments with you at the meeting scheduled for March 29. If you have any questions or need any additional information, please don't hesitate to contact me at (509) 329-3514.

Sincerely,

Drea Traeumer, Hydrologist
Water Quality Section
Eastern Regional Office

cc: Dave Clark, P.E.; HDR Engineering Inc.
Dave Moss, P.E. Spokane Co. Utilities
Jim Bellatty, Department of Ecology
Dave Knight, Department of Ecology
Len Bramble, P.E. Department of Ecology
Kim Sherwood, Department of Ecology
Richard Koch, P.E., Department of Ecology

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2 App. F:4

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07

App. F:4, Letter from Michael Gearheard, US EPA to David Peeler, Dept. of Ecology (6-16-04)

DK x
KM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: OW-134

16 JUN 2004

JUN 18 2004

David Peeler, Manager
Department of Ecology
Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600

Re: Discharges to the Spokane River

Dear Mr. Peeler:

We are writing you this letter in regard to the Spokane River Total Maximum Daily Load (TMDL) and the proposed Spokane County WWTP. There is an existing TMDL for the Spokane River and Long Lake that establishes wasteload allocations (WLA) for phosphorous. We understand that, given the growth pressures in the area, Spokane County is considering building a new wastewater treatment plant that would discharge to the river. The existing TMDL does not allocate a WLA for Liberty Lake WWTP or the new County WWTP, nor does it allocate a WLA for new sources. We are aware that Ecology is currently developing a new TMDL for dissolved oxygen in the Spokane River and Long Lake, which is scheduled to be submitted to EPA for approval in July 2005. Although this TMDL will identify wasteload allocations for the point source dischargers to the river, there is a pressing need for the local municipal governments to address needs for additional wastewater treatment capacity in the very near future. Therefore, the State and dischargers must make difficult NPDES permitting decisions about wastewater treatment and discharge options in advance of the TMDL completion. EPA and Ecology have discussed this situation and this letter is intended to clarify EPA's perspective on the permitting issues that have been raised by Ecology.

First, federal regulations at 40 CFR 122.44(d)(1)(i) require that water quality based-effluent limitations (WQBELs) must control all pollutants that..." will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." The data collected over the last several years indicate that the Spokane River and Long Lake do not currently meet state water quality criteria for dissolved oxygen during the critical period that occurs during warm weather and low river flow. These dissolved oxygen problems are due to excess nutrients in the River, which persist even with point sources providing some phosphorous removal.

Ecology's technical evaluation of the river from the Idaho border to the Long Lake Dam (Cusimano, 2003) represents the best available information about Spokane River water quality conditions. The evaluation determined that during the critical period there is no loading capacity for pollutants that exert an effect on dissolved oxygen concentrations without degrading water quality. This evaluation also determined that the loading capacity for phosphorus established in the 1992 TMDL for Long Lake is not protective of water quality. Given the identified need for dramatic reductions in phosphorous loading to the River from point sources (during the critical period), Ecology may not authorize new discharges or additional loading from existing discharges that have the potential to further degrade water quality. This is true regardless of how well the wastewater is treated.

Second, the federal regulations at 40 CFR 122.44(d)(1)(vii) state, "When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and, (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.

In light of the current TMDL for the Spokane River, Ecology cannot issue a permit to a facility to discharge phosphorous if they have not been given a WLA in the existing TMDL unless the TMDL is appropriately modified. TMDLs may be modified to reallocate pollutant loading among sources as long as the loading capacity of the receiving water is not exceeded. Modification of the TMDL would require looking at the most current information, which would include the most recent studies done by Ecology (Cusamino, 2003). To the extent those studies indicated a need to revise the current loading capacity as well, that capacity would become the basis for any revised allocations. Following this approach, Spokane County and Liberty Lake might be provided WLAs based on any revised loading capacity, although these allocations will likely require concurrent reductions by other dischargers.

Third, State Revolving Fund (SRF) eligibility for the proposed County facility must ensure that the facility will not violate the Clean Water Act. SRF eligibility is predicated on building facilities that can be legally permitted to discharge; therefore, Ecology must identify permit conditions the applicant needs to achieve to address water quality concerns for the Spokane River. Per previous EPA comments, this new discharge cannot cause or contribute to water quality problems when discharge to the river commences.

Lastly, establishing a compliance schedule for the new County WWTP was raised in the State's November 7, 2003, letter to the County. Federal NPDES regulations (40 CFR 122 (i)) prohibit issuing a permit to a new source or a new discharge, such as the proposed County WWTP, if the discharge has the reasonable potential to cause or contribute to violation of State water quality standards. Washington State water quality standards (WAC 173-201A-160) also prohibit establishing a compliance schedule for new dischargers to achieve compliance with effluent limitations necessary to protect water quality. These regulations require that treatment and control of pollutants in the effluent from a new discharge be adequate to protect water quality at the time discharge is commenced. Deferring compliance

with WQBELs by "phasing" construction of the facility or issuing a schedule of compliance via an administrative order doesn't alter the requirements of the Clean Water Act.

EPA hopes these comments are timely in helping the County revise its facility plans to meet the short SRF funding schedules identified by your staff. The EPA staff assigned to the Spokane dissolved oxygen TMDL remains highly involved with this project and is available to answer questions you might have about this letter. If you have any questions or concerns regarding this letter, please feel free to contact me at (206) 553-1261; for technical comments or concerns please contact David Ragsdale at (360) 407-6589.

Sincerely,

Michael F. Gearheard
Director
Office of Water

cc: James Bellatty, Ecology-ERO

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2 App. F:5

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07

App. F: 5, E-mail, John Storman to Dave Peeler (5-23-06) with attachment (Septic Tank and Drain Field Design for Nutrient Control (ECY 3-8-06))

--Dave

From: Stormon, John C.
Sent: Tuesday, May 23, 2006 12:59 PM
To: Peeler, Dave; Selby, Melodie (ECY)
Cc: Gildersleeve, Melissa
Subject: Spokane Aquifer On-site Phosphorus Memorandum

FYI
Attached is an excellent technical memorandum prepared by ERO WQP engineer Kim Sherwood (a.k.a. Dr Science) calculating phosphorus treatment in soil beneath septic drainfields. Kim's calculations indicate that the 10 ft vertical separation in the current Spokane Shoreline Master Program would be a minimum for effective phosphorus treatment, with a lifespan of between 4 and 78 years. After that lifespan, all the phosphorus binding sites in the soil would be used and the phosphorus passes through with little treatment.

I hope this helps in your discussions with Spokane County.

John Stormon
Hydrogeologist
Water Quality Program
Department of Ecology
P.O. Box 47600
Olympia, WA 98504
360-407-7221
jsto461@ecy.wa.gov

From: Pineo, Douglass A. (ECY)
Sent: Tuesday, May 23, 2006 12:18 PM
To: Stormon, John C.
Subject: Kim Sherwood's memo on phosphorus

M E M O R A N D U M

TO: Doug Pineo Shore lands and Environmental Assistance Program

FROM: Kim Sherwood Water Quality Program

DATE: March 8, 2006

S E P T I C T A N K A N D D R A I N F I E L D

D E S I G N F O R N U T R I E N T C O N T R O L

The literature clearly shows that Septic Tanks followed by Drain field treatment and disposal of domestic wastewater effluents can be designed to protect groundwater resources from nutrient contamination. The EPA prepared a DESIGN MANUAL entitled Onsite Wastewater Treatment and Disposal Systems (1) in October of 1990. This manual clearly states that: "Onsite systems are now gaining desired recognition as a reliable service at a reasonable cost, while still preserving environmental quality."(1) To achieve all the goals of preserving environmental quality requires that all the features of a properly designed drain field be given attention. It is clear from the literature that the design of a drain field for the disinfection of the wastewater will nearly always be inadequate for the elimination of nitrate nitrogen, and will frequently be sub-optimal for the removal of phosphate from the wastewater.(1 and 2) Several documents site vertical separations of about three feet as adequate for bacterial immobilization(1,2 and 3). Disinfection and BOD removal are sited as the reasons for suggesting a 3 foot vertical separation in the Washington State Guidance.(2) The State of Washington Vertical Separation literature review even goes so far as to state that phosphate is readily absorbed onto soil particles.(2) This statement about the tendency of phosphate to be adsorbed onto soil surfaces is in general true. But, the capacity of most soils particularly sandy soils in the Missoula Glacial Flood area of Washington is so low that a few years is all it will take to saturate this absorptive capacity.(1) Nearly all significant lakes and streams in Spokane County are listed on the 303 d list of impaired waterbodies as a result of phosphate related low dissolved oxygen. (Liberty Lake is not on this list but has been heavily impacted by phosphate from septic drain fields in the past) Proper design and the current code includes well over 10 feet of vertical separation from the seasonal high water table to limit phosphate transport in anaerobic soils near lakes and streams.(See Calculations below) The horizontal separation of drain fields from lakes and streams should reflect the distance that anaerobic conditions are present around the lake or stream. This distance will frequently be hundreds of feet around lakes and on the order of one hundred feet around the flood plains of streams and rivers. Clearly more protective design criteria for Septic Tank Drain field systems must be used in order to limit nutrient pollution of surface and groundwater. Reliance on simple Perc Tests, and pre-determined set backs and vertical separation from seasonal high groundwater levels is not preventing nutrient pollution. As various articles in the recent literature state, it is not

even preventing bacterial contamination of groundwater and peoples yards, and homes.(4 and 5) What is needed are expanded design criteria to meet a growing requirement for not only disinfection of sewage, but also control and treatment of nutrients.

Suggested Shore Lines Management Requirements to Slow the Pollution of Lakes and Streams:

Even high capacity Acid Soil Outwash has a limited capacity to hold phosphate (less than 40 mg/100grams).(1) The onset of anaerobic conditions causes the release of phosphate from soils saturated with phosphate. For these reasons it would seem prudent to regulate the amount of soil between the bottom of a drain field trench and any anaerobic soil conditions or anaerobic groundwater.

If the requirement for citing a drain field was stated such that: There must be at least 10 feet of aerobic soils below any proposed drain field trench bottom and the onset of any seasonally anaerobic soil or seasonally anaerobic groundwater condition. Then high transport anaerobic groundwater would be protected from drain field phosphate releases for at least 3.9 years, and may be protected in sandy Glacial Flood soils for as much at 39 years.(See Calculations Below). While much more protection for Northwest Lakes and Rivers may be desirable it should be remembered that this is just short term detention of phosphate, drain fields do not remove any phosphate from the environment they simply slow its travel to Lakes and Rivers.

R E F E R E R E N C E S

Maryland On-Site Sewage Disposal Task Force. 1999. **Reducing the Environmental Impacts from On-site Sewage Disposal Systems**. Maryland Department of Natural Resources, Tributary Strategies Program, Annapolis, MD.

(1) U.S. Environmental Protection Agency. 1980. **Design Manual: Onsite Wastewater Treatment and Disposal Systems** (EPA 625/1-80-012). U.S. EPA Office of Research and Development, Municipal Environmental Research Laboratory, Cincinnati, OH.

(3) Cogger, Craig. 1988. **Septic System Performance on a Coastal Barrier Island**. *Journal of Environmental Quality*, Volume 17 (3). Pages 401-407. Published cooperatively by the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Madison, WI

(5) Deal, Karen. 1998. **Analysis of Septic System Failure in Gallatin County, Montana**. Montana State University Extension Service, Bozeman, MN.

(4) Loomis George W. and David Dow, M. H. Stolt, A. D. Sykes, and A. J. Gold 1998. **Utilizing Advanced Treatment Technologies to Remediate Failed On-site Systems on Marginal Sites Located in Sensitive Coastal Environments**. In *On-Site Wastewater Treatment: Proceedings of*

the Ninth International Symposium on Individual and Small Community Sewage Systems. 52-61 American Society of Agricultural Engineers, St Joseph, Michigan.

(2) Selden Hall Vertical Separation: A Review of Available Scientific Literature and a Listing From Fifteen Other States. Office of Environmental Health and Safety, Washington State Department of Health October 1990.

C A L C U L A T I O N S

How Many Years Until Phosphate Saturation of a 3 Foot Vertical Separation Drain field

Input Data: 10 mg Phosphate/liter Sewage Strength
0.2 Gallons/Ft^2-Day Lowest Loading on fine Drain field Soils
40 mg Phosphate/100 grams of Soil: Maximum Phosphate Absorption (EPA)
3 Foot of soil before Saturated Transport of Phosphate
120 lbs./Ft^3: Maximum Dry Soil Density

$$\frac{1 \text{ liter}}{10 \text{ mg Phosphate}} \times \frac{\text{Gallon}}{3.785 \text{ liters}} \times \frac{Ft^2\text{-Day}}{0.2 \text{ Gallons}} \times \frac{40 \text{ mg Phosphate}}{100 \text{ Grams Soil}} \times \frac{3 \text{ Ft}}{1 \text{ Ft}} \times$$

$$\frac{454 \text{ Grams Soil}}{1 \text{ lbs Soil}} \times \frac{120 \text{ lbs Soil}}{Ft^3} = 8627.769 \text{ Days}$$

8628 Days X 1 Year/365.25 Days = 23.62 Years to Phosphate Saturation at 3Ft Separation

10Ft/3Ft X 23.62 Years = 78.74 Years on Exceptional Acid Soil Outwash With 10Ft Separation

2 mg/40 mg X 78.74 Years = 3.94 Years on Expected Low End Sandy Soils With 10Ft Separation

20 mg/40 mg X 78.74 Years = 39.4 Years on Best Sandy Soils listed by the EPA, With 10Ft Separation

Separation should be taken from low absorption ANAEROBIC soils.

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2 App. F:6

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07)

App. F:6, Letter from Sierra Club to Ron Lavigne (3-7-06)

CENTER FOR JUSTICE

COMMUNITY BUILDING
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JIM SHEEHAN
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March 7, 2006

Ron Lavigne
Attorney General's Office, Ecology Division
2425 Bristol Ct, SW Fl 2
P.O. Box 40117
Olympia, Washington 98504-0117

RE: Lori Terry Memo – Proposed County Sewage Treatment Plant

Dear Mr. Lavigne:

We are sending this letter on behalf of the Sierra Club, Upper Columbia Group, to register and explain our disagreement with Spokane County's interpretation of the requirements for new dischargers under state and federal law.

In her February 2, 2006 memorandum to you, Lori Terry of Foster Pepper PLLC, on behalf of Spokane County, concludes that if the County builds a new regional sewage treatment plant, the new facility would not be a "new discharger" and hence would be eligible for a compliance schedule. This conclusion contradicts a letter dated August 2, 2004 from your offices to Bruce Rawls, in which you stated that Spokane County's new wastewater treatment plant must be designed and constructed to achieve compliance with effluent limitations derived from the TMDL upon commencement of operation. See Attachment 1. We support Ecology's position on compliance for the proposed facility as outlined in the August 2 letter and believe that it comports with federal and state law.

New Discharger

Under state law, the term "discharger" means the owner or operator of any facility or activity subject to regulation under the NPDES program. WAC 173-220-030. Here, the current activities of the County subject to the NPDES program involve implementation of its Pretreatment Program and its participation in a City/County Interlocal Agreement. (Permit No. WA-002447, p. 23.) Thus, the County could be considered an "existing

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discharger" with respect to its pretreatment program.[1] Regardless of its current status, however, once it builds a new facility to discharge at a new site, the County will become a "new discharger" for purposes of the new facility.

The federal regulations at 40 C.F.R. § 122.2 set forth the definition of a "new discharger" and provide in pertinent part:

> *New discharger* means any building, structure, facility, or installation:
>
> (a) From which there is or may be a "discharge of pollutants;"
>
> (b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;
>
> (c) Which is not a "new source;" and
>
> (d) Which has never received a finally effective NDPES permit for discharges at that "site."
>
> *Site* means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.
>
> *Discharge* means any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source."

40 C.F.R. §122.2.

Ms. Terry contends that the County-owned collection system of sewer mains and pumps constitute an existing facility at a particular site and are therefore part of an existing, permitted POTW. But the focus of the "new discharger" definition is on the treatment plant itself, not the pumps and pipes that deliver the sewage.

Ms. Terry does not dispute that the County proposes to build its new facility at a different site than the existing City plant and to discharge its effluent upstream at a different site than the existing one. Hence, the proposed plant fits the above definition: the County plans to discharge pollutants, from a new facility that was not at that new site prior to 1979, which is not a new source, and which has never received a finally NDPES permit for discharges at that site.

---

[1] Ms. Terry also maintains the County is an "existing discharger" because it is a "partial owner and operator of the City's plant." Terry Memorandum at 2. Sierra Club takes no position on this assertion at this time.

The distinguishing factor between new and existing dischargers under the Clean Water Act is whether or not a facility has ever received an NPDES permit at a particular site. The policy behind the regulations governing new and existing dischargers contemplates the costs and equities associated with forcing existing facilities to upgrade versus requiring new facilities to incorporate the latest technologies. "This distinction is based on the concept that new facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies." Rules and Regulations, EPA, 40 C.F.R. Parts 122, 134, and 125, National Pollutant Discharge Elimination System Permit Regulations, 49 Fed. Reg. 37998 (September 26, 1984). "The legislative history of the CWA indicates that the new source requirements were intended to apply where new construction allows flexibility to incorporate new pollution control technology."[2] *Id.* at 38043, 44.

For these same reasons, expansions at existing facilities can trigger new discharger regulations under some circumstances. *See* 40 C.F.R. § 122.29 (construction at an existing discharger or source can trigger new discharger/source requirements if it totally replaces the process or production equipment that causes the discharge of pollutants at an existing source, or its processes are substantially independent of an existing source at the same site). Consequently, the fact that the discharge itself may be from the same source of pollution does not exempt a new County plant from regulations governing new dischargers. Indeed, new treatment plants are often built to serve existing sewer collection systems. That the sewer system is part of the previously permitted POTW is simply not dispositive of whether the new plant is a "new discharger."

Ms. Terry applies the definition of "new discharger" only to the County's existing activities and finds it does not apply. This analysis is incorrect and irrelevant to the County's new facility.[3]

Compliance Schedules for New Dischargers

In furtherance of these policies, both the federal and state regulations governing point sources under the NPDES permit system limit compliance schedules for new dischargers.

---

[2] We agree that the County plant will not be a "new source," however, this cited section applies the same policy rationale to new dischargers. *See* 49 FR 38034 (regulations treat new sources and new dischargers differently than existing ones, as these are in a better position to install and "start up" their equipment and meet their permit limitations while existing sources may need additional time to upgrade treatment technology).

[3] In making her case that the County is an existing discharger, Ms. Terry asserts that the tens of thousands of septic tanks permitted by the County should be construed to be point sources. If this rather unusual interpretation is correct, this would mean the County or all septic tank owners are in violation of state and federal laws by discharging pollutants without valid NPDES permits. Of course, Clean Water Act and NPDES permit requirements apply only to surface water dischargers, so this assertion is it is not correct and essentially irrelevant.

40 C.F.R. § 122.47(a)(2) requires that new sources and new dischargers must be in compliance upon commencement of discharge. This section provides:

> (2) The first NPDES permit issued to a new source or a new discharger shall contain a schedule of compliance only when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised after commencement of construction but less than three years before commencement of the relevant discharge. For recommencing dischargers, a schedule of compliance shall be available only when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised less than three years before recommencement of discharge.

40 C.F.R. § 122.47(a)(2) (Applicable to State Programs per § 123.25(18)).

This requirement does not provide relief where, as here, the water quality standards at issue have been in place for years and where the TMDL will be in place prior to construction of the new facility. Moreover, Washington's regulations are even more stringent than the federal requirements, and entirely prohibit compliance schedules for new discharges. WAC 173-201A-510(4) (existing discharges may obtain a compliance schedule to achieve the state's water quality criteria, but "schedules of compliance may not be issued for new discharges").

As a new discharger, the County's new facility is not be eligible for a compliance schedule but must meet water quality standards upon commencement of discharge. As indicated by the draft TMDL, the County must reduce phosphorus effluent concentrations to background conditions, 10 μg/L, in order to avoid causing or contributing to water quality violations, i.e. to meet water quality standards.

Other regulatory limits on new dischargers

The federal regulations also further limit discharges into § 303(d)-listed waters by new dischargers/sources. 40 C.F.R. § 122.4(i) provides in pertinent part:

> No permit may be issued:
>
> (i) To a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards. The owner or operator of a new source or new discharger proposing to discharge into a water segment which does not meet applicable water quality standards or is not expected to meet those standards even after the application of the effluent limitations required by sections 301(b)(1)(A) and 301(b)(1)(B) of

> CWA, and for which the State or interstate agency has performed a pollutants load allocation for the pollutant to be discharged, must demonstrate, before the close of the public comment period, that:
>
> (1) There are sufficient remaining pollutant load allocations to allow for the discharge; and
> (2) The existing dischargers into that segment are subject to compliance schedules designed to bring the segment into compliance with applicable water quality standards.

Ms. Terry contends that, even if the County is a new discharger, this provision does not prevent the County from discharging into the river without meeting TMDL requirements at commencement of discharge because the new plant will not add loading beyond what is currently discharged.

Again, this contention is not supported by a reading of the regulations. The Spokane River is currently over assimilated for phosphorus. As a result, no pollutant load allocations are available, whether as load or waste load allocations, for any discharger except at background levels. In effect, all point source dischargers must achieve phosphorus removal limits of around 10 ug/l. Existing dischargers have the benefit of compliance schedules to meet this limit. New dischargers do not.

Moreover, the County cannot avoid contributing to water quality violations as a new discharger unless it discharges, seasonally, at background concentrations around 10 μg/L. Currently, the County's proposed facility plan utilizes MBR technology which is predicted to achieve 50 ug/l (at best). At 50 ug/l, the discharge would be measurable and hence, would contribute to water quality violations. *See Arkansas v. Oklahoma*, 503 U.S. 91, 113 (1992).

Discharge versus discharger

Ms. Terry further suggests that WAC 173-201A-510(4) does not limit compliance schedules for new "dischargers," but rather only for new "discharges," and thus, if the County limits its discharge to current sources, it would be eligible for a compliance schedule no matter where its plant is located. This reading equates to interpreting state regulations in a manner less stringent than federal law requires, in violation of the CWA and contrary to the policies behind the new source/discharger requirements.

Subpart A, 40 C.F.R. 123 details the requirements for state NPDES programs. 40 C.F.R. § 123.25 sets forth the regulations applicable to state programs and provides that all state programs must have the legal authority to implement the enumerated provisions and must be administered in conformance with each, except that states may omit or modify any to

impose more stringent ones. As noted above, 40 C.F.R. § 122.47(a)(2), the regulation governing compliance schedules for new dischargers, is included therein. It appears that WAC 173-201A-510(4) is the only Washington regulation directly governing compliance schedules for new dischargers. To conform to the requirements of the CWA, this regulation must be read to implement the CWA's requirements regarding new dischargers. To read it otherwise would allow Washington to provide less protection to our waters than federal laws require. Additionally, WAC 173-220-140 provides: "Schedules of compliance, shall set forth the shortest, reasonable period of time, to achieve the specified requirements, such period to be consistent with the guidelines and requirements of the FWPCA." Once again, this regulation inherently incorporates the requirements of 40 CFR 122.47 which limits compliance schedules for new facilities as noted above.

It is axiomatic, but worth noting, that Ecology is bound by, and as a practical matter utilizes, the federal definition of "new discharger." State law is consistent with federal definitions for some of the relevant terms. For example, under both regulatory schemes, a "discharge" is the release of pollutants into surface waters while the "discharger" is the party doing the releasing. However, there is no state law definition for a "new discharger," and the state must therefore look to the federal definitions Ecology has done just that in its Water Quality Program Permit Writer's Manual which refers to numerous federal regulations concerning new and existing sources and dischargers.[4] The text of the manual too makes numerous references to new and existing sources and dischargers such as e.g., page VI-38, which encourages discharge out of water or water reuse for new dischargers.

With federal law as backdrop, from a "plain reading" standpoint, it makes no sense to interpret the state regulatory term "discharge" in a manner that contradicts the federal term "dischargers." Under Washington law, it is unlawful for "any person" to discharge pollutants into the state's waters except as authorized by permit.[5] Under the state NPDES permit system, then, it is the <u>discharger</u> who is authorized to pollute and who receives the permit, and not the "discharge." It is grammatically illogical to read WAC 173-201A-510(4) as granting a compliance schedule to the pollution, rather than the polluter.

Such a reading would also offend the policies, discussed above, that underscore the Clean Water Act and implementing federal regulations. The operator of an existing POTW may need a compliance schedule in order to continue operations while upgrading the facility to meet new effluent limits. New dischargers, on the other hand, have the opportunity,

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[4] See, e.g., Appendix 1 in the Manual, which lists the regulations applicable to NPDES permits in Washington State, including 40 C.F.R. § 122.21(j) (applying the definition of a new source to POTW pretreatment programs); § 122.2 definitions; § 122.29 (New Source and New Dischargers); § 122.4 (New Source and New Discharger Prohibitions).

[5] RCW 90.48.080. WAC 173-220-020 provides, "[n]o pollutants shall be discharged to any surface water of the state from a point source, except as authorized by an individual permit issued pursuant to this chapter or as authorized by a general permit issued pursuant to chapter 173-226 WAC."

and the corresponding duty, to design and build facilities that do not "cause or contribute" to the violation of water quality standards from commencement of operations. To allow the County to build a new treatment facility at a new site that would contribute to water quality impairment in the Spokane River – on the theory that the sewage was previously treated elsewhere – undermines the federal policy behind the "new discharger" requirements.

Additionally, the state's distinction between new and existing "discharges" is reasonably necessary under Washington's antidegradation policy, which prohibits any discharge that would degrade or contribute to water quality degradation. This policy dictates that a new discharger that is causing or contributing to water quality impairment should not be granted a permit. It makes no sense to allow new POTWs to be built, at great expense to the public, that do not meet water quality requirements and that would therefore require upgrades from the moment they come on line. Undoubtedly it is most cost effective in the long run to build it right the first time, rather than attempting piecemeal adjustments later.

Offsets

We understand that there is some debate as to whether a new discharge contributes to water quality violations where the discharge is offset by a reduction from another discharger. Under this theory, the County would not contribute to violations if the City transferred all or a portion of the 10 mgd capacity the County "owns" in the City plant. Of course, such an offset would be inapplicable if the City's capacity were not reduced and capped accordingly. It is apparent from Ms. Terry's memo that the County intends to continue to grow into and utilize its 10 mgd allotment at the City's plant. Hence, no offset will occur.

According to Rod Brown, on behalf of Ross and Associates, the offset theory is supported by a line of cases drawing on a 1999 EPA brief filed in the United States District Court for the Eastern District of Louisiana. We have not had an opportunity to review these cases in detail, and would appreciate Ecology's sharing its analysis for further comment.

We do have some initial thoughts about offsets.

First, offsets are not inherently bad and we agree that this approach could afford a mechanism to resolve the County's permit situation.

But, offsets must be appropriately quantified, and real. From the analysis above, it is evident that the County would be required to offset <u>all</u> of the effluent it proposes to put into the river that would cause or contribute to continuing water quality impairment. The baseline for determining the offset derives from the fact that the County plant does not have and cannot obtain a waste load allocation. Thus, the quantity of the offset would

have to be calculated as any amount of phosphorus effluent over and above the 10 ug/l (background) concentration.

The offset would also have to be certain of occurring, and it would have to be in place before the County plant commenced discharging. Washington's water quality offset regulation offers explicit standards for proposed offsets, including that the water quality improvements "must be demonstrated to have occurred in advance of the proposed action," that the method for calculating offsets must "incorporate uncertainties," demonstrate an "appropriate margin of safety," and account for attenuation of benefits, the offset controls "must be secured using binding legal instruments," and may only include pollution controls "beyond existing requirements." WAC 173-201A-450(2).

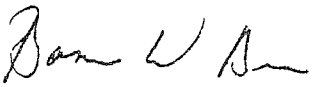
We would welcome the opportunity to further discuss how an offset program might be legally implemented to allow the County to discharge phosphorus into the Spokane River in excess of background concentrations.

Conclusion

For the reasons stated above, we believe the County's proposed plant is a new discharger and is not eligible for a compliance schedule but must meet Washington's water quality standards upon commencement of discharge. None of the above, however, prohibits the County's proposed plant from discharging into the river outside the critical season. Furthermore, the County has publicly committed itself to building a state of the art reclamation plant. To that end, we trust the County is currently engaged in good faith and rigorous investigations into the potentials for constructed wetlands and industrial reuse options so that when the plant comes online in six or more years, it will indeed be an exemplary plant in compliance with the law. In the interim, we would encourage the County to mandate purple pipes for all new development and require decentralized or small cluster plants for new and or existing ones so that growth may continue, but the problems associated with septic tanks do not.

We look forward to further discussions on these issues and a resolution that both improves the Spokane River and conforms with the law.

Sincerely,



Bonne W. Beavers
Rachael Paschal Osborn
On behalf of the Sierra Club, Upper Columbia Group

cc: Dave Peeler, Ecology
Rod Brown

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2 App. G:5

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07)

App. G-5, E-mail from Cusimano to Knight, et al. (7-8-05)

Merrill, Kenneth R.

From: Cusimano, Bob
Sent: Friday, July 08, 2005 9:15 AM
To: Knight, David T. (ECY ERO); Merrill, Kenneth R.
Cc: Erickson, Karol (ECY)
Subject: RE: NPS Sub Group Questions

Dave,

The attached draft response I believe answers your first question. The model accounts for all loads to the river such that groundwater concentrations must be correct or we would be underestimating the river concentrations. As noted in the response, a large proportion of the river flow during the summer is groundwater (actually at Nine Mile Dam most of the river flow is groundwater) such that if the concentrations were 2 to 3 times what we have in the model the model would be overestimating the river concentrations by about that same factor.

It is hard to "measure" how much aquifer TP gets into the river because aquifer chemistry and river interactions (as the groundwater physically enters the river from different zones) is very complicated, i.e, a well, spring, or seepage grab sample of total P does not represent the actual amount that gets incorporated into the water column.

Attached is an e-mail I sent Richard about SOD.

I hope to complete my response to Dr Welch's comment soon.

Response to 3-05 meeting Q

Untitled

- Dale Arnold attended 7/11 meeting and started guiding the group - maybe he was replacing Bruce Rawls' function.
- Tried to compare loadings from septic systems to the projected loading

Bob

-----Original Message-----
From: Knight, David T. (ECY ERO)
Sent: Friday, July 08, 2005 8:13 AM
To: Cusimano, Bob; Merrill, Kenneth R.
Subject: NPS Sub Group Questions

Gentleman; I know this is short notice, but we have scheduled a meeting for the NPS Sub group on Monday morning, and they have some questions. I believe that I can answer these, but was asked to forward them to the 2 of you. Ken, I'm hoping that you can attend in person.....DK

- Are aquifer contributions correctly modeled? Can we reconcile the issue of how much phosphorus from septic systems and fertilizer use actually reach the Spokane River?
- How much phosphorus from nonpoint sources to Coeur d'Alene Lake, actually reaches the Spokane River, and how much of this is available for biological growth in Long Lake?
- How does the model estimate sediment oxygen demand in the reservoir, and is this number accurate in the model?

Bob, I would like to use some of your earlier responses to question 4, especially the ones that you are using to address comments associated with the recent Aeration Workshop. Do you think this will be alright (since your response is still draft)?

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07), pp. 1, 44-48, and Appendices Index pp. 1-2, 5, and including the following Appendices

- App. B:6, Keta Waters Review of Final (6-27-07) HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (10-8-07)
- App. B:11, PBSJ Review of Draft HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (6-27-06)
- App. B-12, PBSJ Review of Draft HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (1-15-07)
- App. F:1, Letter from Richard Koch, Dept. of Ecology to Bruce Rawls, Spokane County (2-8-07) and from Drea Traeumer, Dept. of Ecology to Bruce Rawls, Spokane County (3-14-07)
- App. F:4, Letter from Michael Gearheard, US EPA to David Peeler, Dept. of Ecology (6-16-04)
- App. F: 5, E-mail, John Storman to Dave Peeler (5-23-06) with attachment (Septic Tank and Drain Field Design for Nutrient Control (ECY 3-8-06))
- App. F:6, Letter from Sierra Club to Ron Lavigne (3-7-06)
- App. G-5, E-mail from Cusimano to Knight, et al. (7-8-05)

Comments on the Draft Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load, Water Quality Improvement Report, Washington State Department of Ecology (September 2007)

Submitted on behalf of the Sierra Club, Upper Columbia River Group
And the Center for Law and Environmental Policy

In addition to the comments below, the Sierra Club and CELP adopt by reference herein the comments tendered by the former Dissolved Oxygen TMDL lead, Drea Traeumer, which are attached hereto, and any attachments supporting Ms. Traeumer's comments tendered to Ecology.

INTRODUCTION

The Spokane River flows 111 miles from Lake Coeur d'Alene in Idaho to its confluence with the Columbia River in Washington State. It is the defining feature of the region and of great economic and aesthetic value to the people of Spokane and the surrounding area. Unfortunately, during the low-flow summer months, the river, including segments in the Spokane Tribe Reservation and Lake Spokane (Long Lake), are afflicted with low dissolved oxygen (DO), a condition that is harmful to fish and other aquatic organisms.

Seven wastewater treatment plants (WWTP), three in Idaho and four in Washington, discharge pollution effluent to the main stem of the Spokane River.[1] In addition, the Hangman Creek Watershed, a major tributary of the Spokane River, contains ten permitted facilities, six of which discharge to surface waters.[2] Combined, the seven mainstem Spokane River wastewater treatment plants discharge up to 75 million gallons a day in the summer to the river. These discharges, in combination with nonpoint source pollution from urban and rural runoff, impair water quality and cause violations of state water quality standards for dissolved oxygen (DO) in several segments of the Spokane River and Lake Spokane.[3] As can be seen from the pictures below, this impairment leads to unsightly and toxic algae blooms in the lake during critical periods of warm weather and low flow, blooms which not only contribute to lower dissolved oxygen, but also adversely affect recreational uses and aesthetics. As a result, these segments are listed on the State's § 303(d) list as critically impaired water bodies for dissolved oxygen.

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[1] These WWTPs are the City of Coeur d'Alene, the City of Post Falls, Hayden Sewer District, Liberty Lake Sewer & Water District, Kaiser Aluminum, Inland Empire Paper Co., and the City/County of Spokane.
[2] *See* Hangman TMDL Submittal Draft Report at 22 (Oct. 13, 2005).
[3] *See* Appendix A: (1) *TMDL To Restore and Maintain Dissolved Oxygen In the Spokane River and Long Lake(Long Lake),* Submittal Report, Public Comment Draft at 8 (Merrill and Cusimano Revised October 15, 2004) (hereinafter "2004 Draft TMDL").

Ecology sits on the Oversight Committee, it does not have voting rights.[178] Ecology cannot abdicate its regulatory authority to enforce its offset regulation by allowing this committee to determine whether the regulation has or has not been met.[179]

25. All target pursuit actions relied upon to meet final water quality based effluent limits must be included as enforceable conditions in NPDES permits.

pp. 27 -31: Listing required and optional target pursuit actions designed to meet a discharger's "delta," the amount of pollutant reductions between that removed end-of-pipe and the final effluent limits.

See comments 19 – 21, above.

26. Because Lake Spokane is overassimilated for dissolved oxygen, Spokane County as a new discharger cannot receive an NPDES permit to discharge into the Spokane River.

p. 26: "Spokane County is planning on constructing a new wastewater treatment plant near the eastern city limits of Spokane, upstream of the City of Spokane's existing plant. Compliance with 10 ug/L phosphorus TMDL target for this new facility will be met through a combination of advanced treatment and target pursuit actions. At the time the plant begins normal, routine operations, it is expected to meet the TMDL targets."

p. 31: "The County may, if Ecology approves, use the pounds of phosphorus prevented from reaching the River and Lake Spokane through septic tank elimination as part of any needed offsets for the County's new treatment plant."

p. 33: "Spokane County's new wastewater treatment plan will be constructed within six years after this TMDL is approved."

Pursuant to 40 C.F.R. § 122.4(i), no permit may issue to a new source or a new discharger if the discharge will cause or contribute to water quality violations. In addition, where the proposed discharge is to a water segment on the § 303(d) list, no permit may issue unless the discharger can show there are sufficient remaining load allocations for the discharge and the existing dischargers are subject to compliance schedules designed to bring the segment into compliance. *Id.* Schedules of compliance may not be issued to new discharges.[180] WAC 173-20A-510(4).

Although the 2007 Draft TMDL and the Foundational Concepts are completely silent on this fact, Spokane County's proposed plant is a new discharger under the CWA for which prohibitions apply that are not applicable to existing dischargers. Under the CWA, a new discharger "means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants;"

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[178] Appendix E: (3) Draft Oversight Committee, 3/6/07.

[179] *See Environmental Defense Center, Inc. v. U.S.E.P.A.*, 344 F. 3d 832, 856 (9th Cir. 2003) (Ecology cannot abdicate its regulatory authority by approving a stormwater general permitting program designed by regulated parties which provided no meaningful agency oversight).

[180] WAC 173-20A-510(4).

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;
(c) Which is not a "new source;" and
(d) Which has never received a finally effective NDPES permit for discharges at that "site."

40 C.F.R. 122.4(i).

First and foremost among these distinctions is that new dischargers do not qualify for compliance schedules to meet waste load allocations under a TMDL. The CWA definitions of new and existing dischargers are linked to particular facilities at particular sites. The policy behind the regulations governing new dischargers accommodates the costs and equities associated with forcing existing facilities to upgrade versus requiring new facilities to incorporate the latest technologies. "This distinction is based on the concept that new facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies."[181] "The legislative history of the CWA indicates that the new source requirements were intended to apply where new construction allows flexibility to incorporate new pollution control technology."[182]

In furtherance of this policy, there are numerous regulations, both federal and state, providing for compliance schedules to existing dischargers. In fact, the federal regulations also give the EPA the discretion to grant compliance schedules to new facilities under some circumstances. Washington State, however, adopted a more stringent regulation and expressly forbids compliance schedules to new dischargers.

In accord with these federal and state laws, as a new discharger, [183] the proposed County plant may not receive an NPDES permit for discharge into the Spokane River unless it can show that, upon commencement of discharge, its effluent will not will not cause or contribute to water quality violations and that it has meet all the requirements of 40 C.F.R.122.4, including subsection (i).[184]

As to the first requirement of § 122.4(i), the four Washington dischargers will be given compliance schedules consistent with the TMDL once it is approved. (Arguably, unless the Idaho permits and this TMDL are revised, none of the Spokane River dischargers have been given waste load allocations and compliance schedules designed to meet the dissolved oxygen standard in Lake Spokane.) As to the second requirement, the modeling demonstrably shows there is no existing assimilative capacity for point sources. Consequently there can be no waste load allocation in the TMDL for the proposed County plant.

Nevertheless, the TMDL holds out the possibility of an NPDES permit through offsets from septic tank elimination. This is unavailing given the Ninth Circuit's decision in *Carlotta Copper*.

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[181] Rules and Regulations, EPA, 40 C.F.R. Parts 122, 134, and 125, National Pollutant Discharge Elimination System Permit Regulations, 49 Fed. Reg. 37998 (September 26, 1984).
[182] *Id.* at 38043, 44. This section also applies the same policy rationale to new dischargers.
[183] See Appendix F: (6) Correspondence between Sierra Club and Ron Lavigne, AAG, regarding Spokane County's proposed plant.
[184] *Carlotta Copper, supra* at 13516,17(Requirements of 40 C.F.R. 122.4 *See also* Appendix F: (4) EPA letter to Ecology discussing limits to discharge for Spokane County as a new discharger.

"There is nothing in the Clean Water Act or the regulation that provides an exception for an offset when waters remain impaired and the new source is discharging pollution into that impaired water."[185]

Without offsets, the County's proposed plant as designed will contribute to water quality violations. The County's proposed plant is designed for 8 mgd annual average flow and the chosen technology, Membrane Bioreactor (MBR) with biological nutrient removal and chemical polishing, is expected to achieve at least 50 ug/L for phosphorus.[186] This is greater than the required instream target concentrations for phosphorus. And, as has been demonstrated from the modeling, even with nonpoint sources set to natural conditions, the standard in Lake Spokane will still be exceeded with all point sources at 50 ug/L.[187] Thus, the County has chosen a technology that will have the potential to cause or contribute to water quality violations and will not meet the instream concentrations as required by the TMDL but instead will discharge a known amount of pollution to the river.

However, even if the *Carlotta Copper* decision were construed to allow offsets to a new discharger (which it clearly does not), it is doubtful that the County can demonstrate phosphorus reductions from its elimination program in a scientifically defensible manner.

In general, TMDL submittals must include load allocations that, where possible, distinguish natural and nonpoint source load.[188] However, because of the complexity of the hydraulic interconnection between the aquifer and the river, Ecology was not able to collect source-specific data sufficient to differentiate between human-caused loading, such as that from septics, and natural background in groundwater loading.[189] Consequently, groundwater loading was deemed to be natural background in the TMDL. [190] Indeed, Table 3, p. 13 in the 2007 Draft TMDL, indicates that the groundwater characteristics are naturally low in phosphorus, essentially background, and in fact appears to treat them as such. Additionally, Cusimano noted that groundwater comprised only a small fraction of the water budget to Lake Spokane with surface water contributing approximately 98.5% and that concentrations were naturally low in phosphorus.[191] In order to provide offsets for septic loading reductions, Ecology must first determine an instream load allocation (as opposed to groundwater) associated with septic loading and recalibrate the model to show that portion of background which is actually nonpoint source and not background. This would, no doubt, result in the natural background conditions being even better than originally assumed and will in all probability require further load reductions.

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[185] *Id.* at 13515. *See also* Comment # 26. See also
[186] Spokane County 2006 Wastewater Facilities Plan Amendment at http://www.spokanecounty.org/utilities/wwfp/.
[187] Appendix B: (17).
[188] 40 C.F.R. 130.2(g).
[189] 2007 Draft TMDL at 12, 13 "The Spokane River and aquifer interactions are a very complex system. If monitoring indicates that the groundwater characteristics have changed significantly from what was used in the original model scenarios, Ecology will use the CE-QUAL-W2 model to analyze the river with current groundwater conditions. If necessary, load and wasteload allocations will be adjusted according to the model predictions (see adaptive management in the Managed Implementation Plan)."
[190] 2007 Draft TMDL at 12, 13 "Groundwater does not contribute CBOD or ammonia in the model."
[191] Loading Assessment at 16 (Cusimano 2004). If, as it appears, the 2007 Draft TMDL assumes groundwater to be background, it should provide an explanation for this assumption and other expected impacts of groundwater on Lake Spokane.

Spokane County's challenge then is to characterize septic pollutant loading such that it could show over-control. In an attempt to distinguish septic loading from background, Spokane County tendered a technical memorandum on loading from septic systems to Ecology with its amended 2006 facilities plan[192] Unfortunately, this memorandum is not scientifically defensible and likewise fails to meet the criteria of WAC 173-201A-450.

Prior to the finalization of the Foundation Concepts document, Sierra Club provided Ecology with a review of the County's initial Phosphorus Loading Estimate Technical Document conducted by Gary Andres, a hydrogeologist with expertise in the Spokane Valley –Rathdrum Prairie Aquifer.[193] That initial estimate warned that the proposal to provide phosphorus offsets through the septic elimination program was not scientifically defensible and failed to meet the vigorous standards of Ecology's offset regulation (WAC 173-201A-450). Mr. Andres conducted an additional review of a later version of the HDR assessment and concluded that little additional information had been provided to demonstrate that the offset proposal was either scientifically or legally defensible.[194]

Specifically, this assessment finds that the HDR report fails to include a sensitivity analysis, adequately address seasonal variations, verify conclusions with field data, or adequately consider a soil/aquifer retention factor. In considering whether the HDR satisfies the requirements of Ecology's offset regulation, the assessment concludes:

"The study does not quantify uncertainty in both P loading and migration to the river, address variability in the effluent quality, provide an appropriate margin of safety (no sensitivity analysis), or account for attenuation as P migrates in the SVRP. These shortcomings make it impossible to determine the existence of benefits. Yet, if the County is allowed to discharge at 50 ug/L, the impact of that discharge will be clear."

Dr. Joel Massman also conducted a review of the HDR memo for Sierra Club and concluded the analysis over-estimated phosphorus loadings and offsets, failed to acknowledge the loading which would continue years after elimination due to desorption, and utilized an approach that is not conservative and does not provide an adequate margin of safety.[195]

Ecology, too, expressed concerns regarding the sufficiency of the HDR analysis in its comments on the proposed facilities plan noting continued "uncertainty regarding the quantity and timing of the offsets."[196]

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[192] Id.
[193] Appendix B: (11).
[194] Id. at (12).
[195] Appendix B: (6). See also Appendix G: (5) (Email from Bob Cusimano with analysis of groundwater concentrations ("It is hard to measure how much aquifer TP gets into the river because aquifer chemistry and river interactions…are very complicated, i.e., a well, spring or seepage grab sample of total P does not represent the actual amount that gets incorporated into the water column" and concluding that if such concentrations were 2 to 3 times what was in the model, the model would be overestimating river concentrations by the same factor); Appendix G: (6).
[196] Appendix F: (1) Ecology letter re: Draft Final County of Spokane's Wastewater Facilities Plan (March 14, 2007). See also

The proposal to offset phosphorus discharges from the new plant is also problematic from legal and policy perspectives. WAC 173-201A-450(2)(e) requires that pollution offsets may be utilized only to the extent the offset allocation derives from new (i.e. not pre-existing) requirements. The Septic Tank Elimination Program, which the County proposes to use as an offset for phosphorus loading to the River, is a longstanding obligation of the County and does not qualify as pollution offset.[197]

The STEP program commenced in 1985 when County voters approved a resolution to create an Aquifer Protection Area and to allow the County to impose a $15 fee on property tax statements. A primary purpose of the fee was (and is) to construct sewer mains to eliminate septic systems and connect households to the City's sewage plant. The County has collected and spent tens of millions of property taxpayer dollars from this fund. In addition the County has received substantial funding from the State's Centennial Clean Water Fund, again on the order of tens of millions of dollars.

The obligation to utilize these funds to eliminate on-site sewage systems derives both from the County's own program as well as contracts with the State of Washington. This obligation pre-dates the TMDL and the discharge permit the County now wishes to obtain to allow discharge to the Spokane River. Removal of septic tanks from the Spokane Aquifer will not create a phosphorus "credit" over and above what will occur regardless of the new treatment plant.

The proposal to use septic elimination as an offset is a bad idea from a policy standpoint. Rewarding the County with a pollution offset credit for the septic elimination program creates an incentive for the County to promote the use of on-site septic systems for new home construction. Indeed, this is exactly what has occurred since the County conceived the idea of using STEP as an offset. In 2005, the County loosened the requirements for connecting to sewer mains. There has also been significant growth in septic systems in the last several years in Spokane County. There has been little effort by the County to limit or control growth in a manner that would reduce demand for septic permits.

In sum, the proposal to trade an undetermined reduction of phosphorus from septics for a known phosphorus load is supported neither in science, law or policy. The County facilities plan should be revised to meet final water quality based effluent limits through technology or seasonal reuse upon commencement of discharge and the TMDL revised to reflect these requirements.[198]

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[197] *See Addressing The Land Use, Environmental Quality, And Transportation Connection In Chittenden County, Vermont: Using Nepa To Arrive At An Affordable, Effective, And Environmentally Responsible Solution For Vermont's Transportation Future*, 31 Vt. L. Rev. 783, *856 (2007) at 824 fn. 264 *citing* CCCH Stormwater Discharge Permits, Nos. WQ-02-11, WQ-03-05, WQ-03-06, WQ-03-07 Consolidated, Findings of Fact, Conclusions of Law, and Order, at 43 (Vt. Water Res. Bd. Oct. 4, 2004), available at http:// www.nrb.state.vt.us/wrp/decisions/wrbdecisions/2004wq-02-11etseq-fco.pdf (No offset for proposed reduction of winter sanding where such reductions were a preexisting requirement under federal law regulating stormwater).

[198] Appendix F:(2) (Letter granting County $8.5 million SRF loan to amend facilities plan to reflect the requirements of the Spokane River DO TMDL); (4).

APPENDICES: SIERRA CLUB/CELP COMMENTS DO TMDL

Appendix A – 2004 Draft TMDL

1. TMDL To Restore and Maintain Dissolved Oxygen In the Spokane River and Long Lake(Long Lake), Submittal Report, Public Comment Draft at 8 (Merrill and Cusimano Revised October 15, 2004) (hereinafter "2004 Draft TMDL").

2. Public Hearing Summary for the draft dissolved oxygen TMDL for the Spokane River (Dec. 28, 2004).

3. Sierra Club Comments, Spokane River Dissolved Oxygen TMDL (December 2004).

4. Addendum to Sierra Club Comments on Spokane River Dissolved Oxygen TMDL (December 31, 2004).

5. Spokane Tribe Natural Resources Comments on Spokane River Dissolved Oxygen TMDL (December 30, 2004).

6. Ecology Draft Responses to comments received from formal comment period ending 11-3-2004.

Appendix B – Technical Reports/Memoranda

1. Assessment of the Water Quality Impact of Idaho Wastewater Treatment Plants on the Spokane River and Lake Spokane, EPA Region 10 (Cope 2006)).

2. Spokane River Lake/Long Lake Total Maximum Daily Load (TMDL); A Review and Assessment of Materials Related to the Model for Estimating Dissolved Oxygen (Massman, November 1, 2004).

3. Bioavailability of Phosphorus (Massman June 26,2006).

4. Review of Model Scenarios and Results related to the Proposed Reissuance of NPDES Permits for Idaho Wastewater Treatment Plants at Post Falls, Coeur d'Alene, and Hayden (Massman, May 9, 2007).

5. Comments Regarding the need for considering additional calibration for the Washington Spokane River Model (Massman, May 23, 2007).

6. HDR, Onsite Sewage Disposal Systems Phosphorus Loading Estimate, Technical Memorandum prepared for Spokane County Division of Utilities (Massman, October 8, 2007).

7. Joel Massman, Ph.D. P.D. Resume (2007).

8. Preliminary thoughts and comments on the August 17, 2007 Portland State report describing the revised CE-QUAL-W2 model for the Washington reach of the Spokane River (Massman, August 22, 2007).

9. Spokane River Preliminary CEQUALW2 Model Results (Cusimano, June 18, 2002).

10. Spokane River and Lake Spokane (Long Lake) Pollutant Loading Assessment for Protecting Dissolved Oxygen (Cusimano, 2004) at http://www.ecy.wa.gov/biblio/0403006.html.

11. Review of HDR Phosphate Study Report (Andres June 2006).

12. Review of HDR Phosphorus Loading Estimate Technical Memorandum (Andres January 2007).

13. Gary Andres, Senior Hydro geologist, resume.

14. Revised Model runs with increased BOD loading from Spokane River Tributaries – includes total phosphorus averages (Berger, Wells and Annear, April 4, 2006).

15. Email: Exchange between Bob Cusimano and John Spencer re: Modeling (September 8, 2004).

16. Linking Idaho and Washington sections of CE-QUAL-W2 Spokane River (Berger, 2007).

17. Simulation with Washington Point Sources having total phosphorus concentrations of 50 micrograms/liter (Berger, Wells, PSU, 2007).

18. Ecology Response to review comments on Spokane River and Long Lake TMDL development (December 5, 2003).

19. Parkson Corporation, Dynasand D2 Advanced Filtration System Pilot Test Final Report, City of Spokane WWTP (June 3, 2006).

20. Preliminary assessment of two-stage sand filtration for phosphorus removal (Ecology 2005).

21. Email: Tom Cole, Research Hydrologist, USACE Engineer Research and Development Center, response comments to dischargers on latest calibration report (July 21, 2003).

2. Sierra Club's Comments on MIP (March 7, 2006).

3. Spokane River TMDL Oversight Committee, Draft 3/6/07

4. Sierra Club Letter to Ecology and EPA re: Spokane River Dissolved Oxygen TMDL (April 5, 2006).

5. Sierra Club Letter to Dave Peeler, Ecology re: Spokane River MIP Implementation (January 17, 2007).

6. Sierra Club Letter to Dave Peeler re: Spokane River MIP Implementation (January 23, 2007).

7. Email: Mike Sharar to Dave Peeler: re Talking with John Spencer, Dischargers' consultant in TMDL Collaboration (June 23, 2006).

8. Email: Dave Peeler to John Spencer, CH2MHILL re: Spokane TMDL Implementation Plan (March 1, 2005).

9. Dischargers' Proposed Scenario with Comments by Ken Merrill (November 2005).

10. Email: Merrill, Ecology, to Ragsdale, EPA re: Comments on MIP (February 1, 2006).

Appendix F: Spokane County Proposed Wastewater Treatment Plant

1. Ecology letters re: Draft Final County of Spokane's Wastewater Facilities Plan (February 8, 2007, March 14, 2007).

2. Ecology letter to Spokane County re: SRF Loan Offer (August 2, 2004).

3. Ecology letter to Rachael Osborn (Sierra Club representative) re: status of Spokane County Plant (August 18, 2004).

4. USEPA letter to Ecology re: Discharges to Spokane River (June 16, 2004.

5. Email: Ecology staff re: HDR Septic Tank elimination memo (may 26, 2007).

6. Email: Sierra Club to Ron Lavigne, AAG re: Spokane County as new discharger (March 10, 2006).

Appendix G: Miscellaneous

1. Spokane River Flow Charts.

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2 App. B:6

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07),

App. B:6, Keta Waters Review of Final (6-27-07) HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (10-8-07)

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TECHNICAL MEMORANDUM

To: Rick Eichstaedt
Center for Justice
35 W. Main, Suite 300
Spokane, WA 99201

From: Joel Massmann, Ph.D., P.E.

Date: October 8, 2007

Subject: HDR, *Onsite Sewage Disposal Systems Phosphorus Loading Estimate*, Technical Memorandum prepared for Spokane County Division of Utilities, June 27, 2007.

I have reviewed the technical memorandum referenced above regarding phosphorus loading estimates to the Spokane River from on-site septic systems. The HDR memorandum presents calculations aimed at estimating the amount of phosphorus that discharged to the Spokane River from septic systems that have been or will be replaced by sewer connections between the years 2001 and 2015. It is my understanding that the phosphorus load from these eliminated septic systems will be used as an "offset" to help meet proposed phosphorus load reductions at the Spokane waste water treatment plant (WWTP).

Conclusions that I have developed from my review include the following:

- The estimated groundwater loading rate assumed in the HDR analysis is considerably larger than values reported in the literature. The assumed values result in high estimates of phosphorus loadings and offsets.

- The approach used in the HDR analysis neglects desorption of phosphorus after septic systems have been eliminated. This desorption will result in continued loading to the Spokane River for years or decades after the septic systems have been removed.

- The approach used in the HDR analysis is based on the Langmuir isotherm for estimating sorption capacities. This isotherm may significantly under-estimate the amount of phosphorus that is retained on soil and aquifer materials. This in turn results in over-estimates of the phosphorus loading rates and offsets.

- The estimated phosphorus loads to groundwater from 18.5% of the septic systems (1,461 systems) in the Spokane County Sewer Service Area is 28 lbs per day, based on HDR calculations.

- The approach for estimating phosphorus loads to the Spokane River used by HDR is not conservative and does not provide a generous margin of safety.

The sections that follow provide more detail regarding the basis for these conclusions.

A. Summary of objectives, results and conclusions from the HDR memorandum

These objectives of the HDR study are described in their memorandum as follows:

> *"The main objective of this study is to estimate the P load from onsite sewage disposal systems to the groundwater and ultimately to the Spokane River System and then to quantify the reduction in P load to the overall Spokane River System resulting from the County's efforts in connecting onsite sewage disposal systems to the Spokane County Regional Water Reclamation Facility"* (page 21)

The estimated phosphorus offset presented in the HDR memorandum for septic systems eliminated between 2001 and 2005 ranges from 3.8 to 6.3 lbs per year. The estimated offset for septic systems that are expected to be eliminated between 2005 and 2015 ranges from 8.4 to 14.0 lbs per year. The calculations that were used to develop these estimates are summarized in Table 1.

The conclusions provided in the HDR memorandum are summarized in the following excerpt:

> *In summary, the approach used in this analysis for estimating breakthrough provides a generous margin of safety in that it underestimates historic P concentrations in effluent, underestimates historic hydraulic loading; overestimates P sorption capacity of soils; and ignores P movement into the groundwater system prior to full sorption capacity of the soil being reached. An additional margin of safety is added through the use of an aquifer retention coefficient of 50 to 75 percent. The analysis presented herein is provides an estimated range of P loads to the Spokane River System from onsite sewage disposal systems and the resulting reduction in loading associated with the STEP. Based on the analysis, a conservative P offset of 4,440 lbs/yr (12.2 lbs/day) has been demonstrated, consistent with applicable regulations. As described in this document, the offset calculations are based on a number of assumptions and variables. Where available, the uncertainty in these variables were reduced by using site or area specific information. These variables, such a depth to groundwater and onsite sewage disposal system location, have low levels of*

uncertainty. For variables with a greater level uncertainty, estimates were used that provided for a generous margin of safety. (page 38)

B. The estimated groundwater loading rate assumed in the HDR analysis is considerably larger than values reported in the literature. The assumed values result in high estimates of phosphorus loadings and offsets.

There are three main variables in Table 1 that control the estimated phosphorus loadings and resulting offsets: 1) the number of septic systems that have been or will be eliminated, 2) the percentage of these systems that were contributing phosphorus to the Spokane River in 2001, and 3) the phosphorus loading rate to groundwater from the septic systems.

The estimated loads to the Spokane River presented in the HDR memorandum hinge on the phosphorus loading rate to groundwater from septic systems. The loading rate assumed in the analysis was 7.3 lbs per year per septic system (page 24). This value has both a direct and an indirect impact on the estimated loading rates and offsets. The direct impact is that it controls the estimated amount of phosphorus that ultimately reaches the Spokane River under "break through" conditions. The indirect impact is that it controls the percentage of systems that had broken through (i.e., were contributing phosphorus) to the Spokane River by 2001.

The estimated value of 7.3 lbs per year is much higher than other reported estimates. For example, the following excerpt is from the Tri State Water Quality Council[1], one of the references included in the HDR memorandum:

> "*The load to soils below a typical septic drainfield is estimated to be 25 lbs of nitrate and 4 lbs of ortho-phosphate annually. Some of these nutrients—particularly phosphorous—are further removed by biological, geochemical, and physical filtering processes in the soil below the drainfield. This process is quite variable depending on the type of soil, depth to groundwater, loading rate, age of system and other factors. The performance of soil filtration in removing nutrients below septic drainfields ranges from 10 to 40 percent for total nitrogen and from 85 to 95 percent for total phosphorus. Using these numbers**, one can reasonably estimate that a typical septic system discharges a total load of** 19 lbs/year of nitrate and **0.4 lbs/year of orthophosphate to groundwater**."* **Emphasis added.**

[1] Tri State Water Quality Council, *Septic System Impact on Surface Waters – A Review for the Inland Northwest*, June, 2005, available at http://www.tristatecouncil.org/documents/05septic_system_impacts.pdf.

The value used in the HDR memorandum for phosphorus loads to groundwater (7.3 lbs per year) is greater than the amount that has been estimated for phosphorus loads to septic systems (4 lbs/year). The approach used by HDR does not include biological and physical-chemical processes that permanently reduce the concentrations that reach groundwater. The value of 7.3 lbs per year used in the HDR analysis is more than 18 times higher than the estimated value from the Tri State Water Quality Council.

If the groundwater loading rate of 0.4 lbs per year were used, and if the same percentage of systems were assumed to be at breakthrough in 2001 (18.5%), the total loads to the Spokane River listed in Table 1 would be reduced by a factor of 18. For example, the estimated load for systems retired between 2001-2005 would range from 0.2 to 0.3 lbs/day, rather than from 3.8 to 6.3 lbs/day.

A lower loading rate will also reduce the estimated percentage of "break through" systems that were discharging phosphorus to the Spokane River by 2001. While this reduction cannot be easily quantified with the available information, it would be substantial. Reducing the number of break-through systems would also reduce the offsets proportionally.

C. The approach used in the HDR analysis neglects desorption of phosphorus after septic systems have been eliminated. This desorption will result in continued loading to the Spokane River for years or decades after the septic systems have been removed.

Some of the physical and chemical processes that cause phosphorus to be retained in soil and aquifer materials are reversible. During periods when groundwater concentrations are increasing, the phosphorus is removed from the groundwater onto the soil and aquifer materials. However, this sorbed phosphorus will re-enter the groundwater system at a later date as the discharges from the septic systems decrease. This process is well documented. For example, the HDR memorandum includes the following excerpt from a USGS study:[2]

> "*While sewage discharge was stopped in 1995, researchers have found there is a large reservoir of sorbed P in the aquifer sediment that will continue to be a source of P (desorption) for decades. This P has been documented discharging into the surface water and causing eutrophication.*" (page 11)

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[2] McCobb, T, D.R. Leblanc, D. A. Walter, K.M. Hess, D.B. Kent, and R.L. Smith. *Phosphorus in a Ground-Water Contaminant Plume Discharging to Ashumet Pond, Cape Cod, Massachusetts*. Water-Resources Investigations Report 02-4306 USGS, 1999, available at http://pubs.usgs.gov/wri/wri024306/pdfs/wrir024306.pdf.

The process of desorption and subsequent remobilization has not been included in the HDR analysis. This process will cause phosphorus loads to continue to the Spokane River for years or decades after the source (i.e., the septic system) has been removed. The length of time until the discharges are stopped will depend largely on the amount of phosphorus that is reversibly-sorbed to the soil.

D. The approach used in the HDR analysis is based on the Langmuir isotherm for estimating sorption capacities. This isotherm may significantly under-estimate the amount of phosphorus that is retained on soil and aquifer materials.

The HDR analysis uses the Langmuir isotherm to estimate the amount of phosphorus that is retained on soil and aquifer materials. In their summary paragraph reproduced in Section A above, HDR concludes that their approach is conservative because it "*overestimates P sorption capacity of soils.*"

Using the Langmuir isotherm will underestimate the total retention capacity of the soil. This is described in the following excerpt:[3]

> ***Estimates of the capacity of the soil to retain phosphorus are often based on sorption isotherms such as the Langmuir model*** *(Ellis and Erickson, 1969; Sawney, 1977; Sawney and Hill, 1975; Sikora and Corey, 1976; Tofflemire and Chen, 1977).* ***This method significantly underestimates the total retention capacity of the soil*** *(Anderson et al., 1994; Sawney and Hill, 1975; Sikora and Corey, 1976; Tofflemire and Chen, 1977). This is because the test measures the chemi-sorption capacity but does not take into account the slower precipitation reactions that regenerate the chemisorption sites. These slower reactions have been shown to increase the capacity of the soil to retain phosphorus by 1.5 to 3 times the measured capacity calculated by the isotherm test (Sikora and Corey, 1976; Tofflemire and Chen, 1977). In some cases the total capacity has been shown to be as much as six times greater (Tofflemire and Chen, 1977). These reactions can take place in unsaturated or saturated soils (Ellis and Childs, 1973; Jones and Lee, 1977a, b; Reneau and Pettry, 1976; Robertson et al., 1990; Sikora and Corey, 1976).* (page 3-31 emphasis added).

Increasing the retention capacity of the soil above the values that are determined using the Langmuir isotherm will reduce the phosphorus loading to the groundwater and to the Spokane River during septic system operations. Increasing the retention capacity of the soil will also reduce the estimated percentage of "break through" systems that contributed

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[3] U.S. EPA, *Onsite Wastewater Treatment Systems Manual*, Office of Water, Office of Research and Development, U.S. Environmental Protection Agency, EPA/625/R-00/008, February 2002, available at http://www.epa.gov/nrmrl/pubs/625r00008/html/625R00008.htm.

phosphorus to the Spokane River in 2001. Each of these reductions will in turn reduce the offset that results from replacing septic systems with sewer hookups.

E. The approach for estimating phosphorus loads to the Spokane River used by HDR is not conservative and does not provide a generous margin of safety.

In their summary paragraph reproduced in Section A above, HDR concludes that their analysis results in a "*a conservative P offset of 4,440 lbs/yr (12.2 lbs/day)*" and that "*estimates were used that provided for a generous margin of safety.*" As described in comments provided above, the estimated loads and offsets are likely overestimated because of the relatively large value assumed for the loading rates from septic systems to the groundwater. The loads and offsets are also likely over-estimated because of assumptions related to the Langmuir isotherm and neglecting biological and irreversible physical-chemical reactions that would increase the total retention capacity.

Table 1 – Summary calculations used to estimate phosphorus offsets

Variable or estimate	2001-2005	2005-2015
Estimated number of septic systems eliminated	3,415	7,900
Percentage of systems contributing phosphorus to river	18.5%	18.5%
Number of systems retired that contributed phosphorus	631	1,461
Phosphorus loading rate to groundwater (lbs/yr/system)	7.3	7.3
Total load to groundwater from retired systems (lbs/day)	12.6	28.0
Total load to the Spokane River (upper estimate)	6.3	14.0
Total load to the Spokane River (lower estimate)	3.8	8.4

1.2 App. B-11

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07),

- App. B:11, PBSJ Review of Draft HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (6-27-06)

Technical Memorandum

Date: 27 June 2006
To: Rick Eichstaedt, Center for Justice
From: Gary Andres, Sr. Hydrogeologist?, PBS&J
Re: Review of HDR Phosphate Study Report

This memorandum presents a summary of a review of a Technical Memorandum developed by HDR for Spokane County entitled *Onsite Sewage Disposal Systems Phosphorus Loading Estimate*, dated May 31, 2006. I understand that this review may be forwarded to the Washington State Department of Ecology.

Overview and General Comments

The HDR Memo provides an estimate of Phosphorus (P) loading to the SVRP aquifer from onsite sewage disposal systems or septic systems. The loading is determined by using County information on the number and age of existing systems and average effluent volume and concentration values. The study then uses assumed soil parameters and depth to aquifer information to estimate P loading. The loading is calculated by adding the mass of P that reaches the aquifer as soil adsorption capabilities are overwhelmed (breakthrough) to P mass reaching the aquifer by bypassing soil adsorption through rapid infiltration where there isn't time for P to attach to the soil. All of the P loading to the SVRP is then assumed to reach the Spokane River.

This study could certainly provide the basis for more detailed studies considering the comments discussed below. One way the Memo could be improved would be to include much of the information presented in table or graph form to better illustrate the assumptions and results.

Specific Comments

If this evaluation is to be used as anything more than an initial estimate of P loading to be followed by further study then several weaknesses are worth pointing out. These weaknesses include:

1. A lack of evaluation of the impact that variations of certain assumptions have on the calculations;
2. Not considering some additional factors that may impact P loading;
3. Absence of field data that support the conceptual model of P migration in the subsurface; and
4. The conservative nature of the evaluation that likely overestimates P loading to the Spokane River.

Because of the uncertainty involved with assumptions used in the analysis, P loading to the SVRP should be expressed as a range rather than a specific number. Certain parameters used are assumptions of average conditions without field data to support them (such as the P adsorption capacity of soil or effluent volume/concentration) and even those averages vary in the literature. It would greatly enhance the study and benefit future investigators to conduct a sensitivity analysis to show how the estimated loading varies as each parameter is varied within reason. This information should be illustrated with tables or graphs.

The conceptual model of P migration in the subsurface does not appear to consider the leaching of sorbed P due to precipitation events or irrigation. These additional flushes of water through the soil column may very well increase the amount of P migrating down to the aquifer. In addition, the competition of P with

other parameters for sorption sites on the soil is not considered, which may also increase the amount of P loading to the aquifer.

In order to determine a viable average annual amount of P loading, seasonal variations should be evaluated to see if loading varies as a function of time. The transient nature of parameters used in the calculations such as effluent volume (seasonally variations in the waste people generate) or those yet to be considered (seasonal variations in irrigation or precipitation and infiltration events) needs to be addressed.

Models of natural systems all require assumptions, with good ones presenting field data that support the conceptual model of the system and verify the accuracy of the model to predict phenomenon. This study could be enhanced or potential flaws revealed with the collection of field or laboratory data to support the nature of the proposed P migration mechanisms. One example of this might be a study of isolated septic systems of various age with data collected on effluent volume and P concentration, P concentrations with depth in the soil, and P concentrations with depth in the percolating infiltration water.

Last, the study makes the overly conservative assumption that all P reaching the SVRP subsequently reaches the Spokane River. It is well known at this point that SVRP water discharges via three routes, the Spokane River, the Little Spokane River, and underflow to Long Lake. Therefore some percentage of the calculated P loading will not reach the Spokane River based on this alone. Additionally, the proximity of the P loading for each system to the river may be an important factor in how much actually reaches the river. The further away from the river the longer the P needs to travel to reach it, increasing the potential mass may be removed through mechanisms such as adsorption or even extraction by wells.

While it may be beyond the scope of the HDR evaluation, the nature of P loading to the river could be better understood by employing the groundwater flow model being developed as part of the Bi-State study of the SVRP that is nearing completion. The MODFLOW model could easily be expanded to include the solute transport code MT3D (they are designed to work together) with simulations developed to explore the geographic variations in P migration within the aquifer and resulting spatial variations in loading to the river.

Offset Applicability

One of the motivating factors for the HDR study is that Spokane County is attempting to use its septic elimination program as a water quality offset to allow the construction of a new sewage treatment plant, which would certainly add new phosphorus to the river. Under Ecology's regulation on offsets (WAC 173-201A-450), the County must document its proposed offset as follows:

(c) The technical basis and methodology for the water quality offsets is documented through a technical analysis of pollutant loading, and that analysis is made available for review by the department. The methodology must incorporate the <u>uncertainties associated with any proposed point or nonpoint source controls</u> as well as <u>variability in effluent quality for sources</u>, and must demonstrate that an <u>appropriate margin of safety is included</u>. The approach must clearly account for the <u>attenuation</u> of the benefits of pollution controls as the water moves to the location where the offset is needed.

Based on the wording of the regulation it appears that the HDR study falls short of this based on the weaknesses discussed above. The study does not quantify uncertainty in both P loading and migration to the river, address variability in the effluent quality, provide an appropriate margin of safety (no sensitivity analysis), or account for attenuation as P migrates in the SVRP. Potential ways to address these are discussed above.

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.2 App. B:12

Sierra Club Comments on Draft 3, Spokane River DO TMDL (Sept. 2007) (11-13-07

App. B-12, PBSJ Review of Draft HDR Technical Memorandum re Onsite Sewage Phosphorus Loading (1-15-07)

Technical Memorandum

Date: 15 January 2007
To: Rick Eichstaedt, Center for Justice
From: Gary Andres, Sr. Hydrogeologist, PBS&J
Re: Review of HDR Phosphorous Loading Estimate Technical Memorandum

This memorandum presents a summary of a review of a Technical Memorandum developed by HDR for Spokane County entitled *Onsite Sewage Disposal Systems Phosphorus Loading Estimate-Final Draft Revision #1*, dated October 18, 2006. The previous final draft of this Technical Memorandum, dated May 31, 2006 was reviewed by PBS&J and documented in a Technical Memorandum dated June 27, 2006.

Side by side comparison of the two draft versions reveals that the revised draft is nearly identical to the May 31 version. Some additional language has been added to clarify the approach used, but the calculations and results are the same.

Criticisms of the May 31 draft are reiterated below followed by an assessment of whether or not the perceived shortcomings have been rectified in this revision.

1. *A lack of evaluation of the impact that variations of certain assumptions have on the calculations.*

   Because of the uncertainty involved with assumptions used in the analysis, P loading to the SVRP should be expressed as a range rather than a specific number. Certain parameters used are assumptions of average conditions without field data to support them (such as the P adsorption capacity of soil or effluent volume/concentration) and even those averages vary in the literature. It would greatly enhance the study and benefit future investigators to conduct a sensitivity analysis to show how the estimated loading varies as each parameter is varied within reason. This information should be illustrated with tables or graphs.

The revised draft still does not provide this type of sensitivity analysis. Aside from varying the soil/aquifer retention factor, none of the other parameters were varied over the ranges cited or provided in the literature. This remains a potential flaw in the analysis, for although the study uses average or recommended values in most cases, the parameters are not known for certain and could be different from the assumed values so bracketing things seems a more appropriate approach.

2. *Not considering some additional factors that may impact P loading.*

   The conceptual model of P migration in the subsurface does not appear to consider the leaching of sorbed P due to precipitation events or irrigation. These additional flushes of water through the soil column may very well increase the amount of P migrating down to the aquifer. In addition, the competition of P with other parameters for sorption sites on the soil is not considered, which may also increase the amount of P loading to the aquifer.

   In order to determine a viable average annual amount of P loading, seasonal variations should be evaluated to see if loading varies as a function of time. The transient nature of parameters used in the calculations such as effluent volume (seasonally variations in the waste people

generate) or those yet to be considered (seasonal variations in irrigation or precipitation and infiltration events) needs to be addressed.

Seasonally variations are still not addressed in the revised draft, which only presents an annual average approach. The impact of flushing is also not considered. Although the study uses a conservative approach and incorporating flushing would likely increase the calculated amount of phosphorous entering the SVRP at times, it is a process that should still be addressed.

3. *Absence of field data that support the conceptual model of P migration in the subsurface.*

   Models of natural systems all require assumptions, with good ones presenting field data that support the conceptual model of the system and verify the accuracy of the model to predict phenomenon. This study could be enhanced or potential flaws revealed with the collection of field or laboratory data to support the nature of the proposed P migration mechanisms. One example of this might be a study of isolated septic systems of various age with data collected on effluent volume and P concentration, P concentrations with depth in the soil, and P concentrations with depth in the percolating infiltration water.

No additional field data is included in this revised draft, nor are there any recommendations for doing so in the future.

4. *The conservative nature of the evaluation that likely overestimates P loading to the Spokane River.*

   Last, the study makes the overly conservative assumption that all P reaching the SVRP subsequently reaches the Spokane River. It is well known at this point that SVRP water discharges via three routes, the Spokane River, the Little Spokane River, and underflow to Long Lake. Therefore some percentage of the calculated P loading will not reach the Spokane River based on this alone. Additionally, the proximity of the P loading for each system to the river may be an important factor in how much actually reaches the river. The further away from the river the longer the P needs to travel to reach it, increasing the potential mass may be removed through mechanisms such as adsorption or even extraction by wells.

The study uses a soil/aquifer retention factor to account for the phosphorous entering the SVRP that does not reach the Spokane River. This approach was also used in the first version, but in this draft the purpose of the calculation is clarified.

The soil/aquifer retention factor is intended to account for phosphorous in the groundwater that gets adsorbed on its way toward the river or removed by pumping. It is essentially a “fudge” factor that cannot be evaluated to any degree of accuracy to its validity as it accounts for a couple of different processes that are not analyzed to any great degree. Phosphorous entering the SVRP travels different distances depending upon location before reaching the aquifer, so for example if all of the loading occurred adjacent to the river the amount entering the river would be greater than if it were all entering the aquifer further away, yet the calculated amount using the soil/aquifer retention factor would be the same.

It is also impossible to evaluate the applicability of the factor to account for pumping. Instead, the study could have used an analysis like that done to estimate the annual average loading from capture zones to calculate the mass removed by pumping.

There is also no accounting for the fact that some portions of the aquifer do not discharge to the Spokane River.

The study would still benefit from a table and/or bar graph summarizing the calculations. A table like this would be useful:

Phosphorous Loading Calculations Summary

Component	Over Aquifer	Spokane County Service Area
Breakthrough-All	9,750	6,290
Breakthrough- Retention 0.5	4,870	3,150
Breakthrough- retention 0.7	2,920	1,890
Pre-Breakthrough	261	52.2
Total:	3,181-5,131	1,942-3,202
Simplified Method	16,300-27,100	9,900-16,500
Annual Avg SVRP Load	3,890-4,440	

All units in lbs/yr

Overall, the study, as previously mentioned, does a good job at developing phosphorous loading estimates from very little site specific data. Conservatism is built in at several steps, such as not accounting for systems outside the aquifer boundary but within the recharge area.

On the other hand, where more detail could have been used it wasn't, such as using a generic soil/aquifer factor to account for several more complex factors. Another key limitation to this is the absence of any uncertainty or sensitivity analysis. The document should include a clear statement of the limitations of the analyses and indicate how rough the estimates are, and it should also include recommendations for steps needed to improve the accuracy of the analysis, such as identifying parameters that would be worthy of a field data collection program to better pin down values.

Offset Applicability

This is repeated from the previous tech memo following the review of the first draft, but it is still applicable:

One of the motivating factors for the HDR study is that Spokane County is attempting to use its septic elimination program as a water quality offset to allow the construction of a new sewage treatment plant, which would certainly add new phosphorus to the river. Under Ecology's regulation on offsets (WAC 173-201A-450), the County must document its proposed offset as follows:

(c) The technical basis and methodology for the water quality offsets is documented through a technical analysis of pollutant loading, and that analysis is made available for review by the department. The methodology must incorporate the uncertainties associated with any proposed point or nonpoint source controls as well as variability in effluent quality for sources, and must demonstrate that an appropriate margin of safety is included. The approach must clearly account for the attenuation of the benefits of pollution controls as the water moves to the location where the offset is needed.

Based on the wording of the regulation it appears that the HDR study still fall short. The study does not quantify uncertainty in both P loading and migration to the river, address variability in the effluent quality, provide an appropriate margin of safety (no sensitivity analysis), or account for attenuation as P migrates in the SVRP.

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

1.3 Sierra Club Comments on Draft 3 of Spokane River DO TMDL (May 2008) (6-24-08), pp. 1, 10, 21

Comments on the Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load, Water Quality Improvement Report, Washington State Department of Ecology (May 2008)

Submitted on behalf of the Sierra Club, Upper Columbia River Group
And the Center for Law and Environmental Policy

INTRODUCTION

The Sierra Club and CELP previously tendered comments on the Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load, Water Quality Improvement Report, Washington State Department of Ecology (September 2007) (Hereinafter "2007 Draft"). The comments below are intended to address modifications to the 2007 Draft as reflected in the Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load, Water Quality Improvement Report, Washington State Department of Ecology (May 2008)(Hereinafter "2008 Draft"). Unfortunately, the 2008 Draft suffers from the same basic flaw as the 2007 – it assumes a degraded background condition at the Idaho/Washington border which seriously undermines restoration efforts. In addition, the 2008 Draft fails to adequately address other concerns identified by the Sierra Club and CELP in their comments on the September 2007 Draft as to the following issues:

- Application of the water quality standard for dissolved oxygen in Lake Spokane
- Wasteload and load allocations calculations and their translation into NPDES permit limits
- Groundwater characterization
- Compliance Schedules
- Permitting new discharges into 303(d) listed waters (e.g. Spokane County's proposed wastewater treatment plant)
- Margin of Safety
- Reasonable assurance of necessary nonpoint source reductions
- Potential off-ramp to a UAA
- Avista dam's contribution to low dissolved oxygen

Consequently, the Sierra Club and CELP herein incorporate by reference in their entirety the groups' comments on the 2007 Draft, with exhibits and attachments, previously tendered to Ecology by letter dated November 13, 2007.[1]

[1] Any reference to specific comments from our 2007 Draft Comments does not indicate an intent to limit incorporation of that document herein. As stated above, that entire document is retendered by incorporation and is to be included in the administrative record.

required to meet the load allocations at the mouth, more work must be done to define the actions necessary to reduce these pollutant loadings

Given the lack of data to support a phosphorus or DO TMDL in Hangman Creek, the expectations for meeting NPS tributary reductions in this TMDL, especially for Delta purposes, should be realistically adjusted downward. The model should also be recalibrated to include the new background condition for Hangman Creek and load allocations revised. The current data confirms that the natural background condition used in the DO TMDL was underestimated by about 30%. This means that the portion of the loading attributed to nonpoint sources is actually less than that assigned in the TMDL. Unless the model is recalibrated and load allocations revised, the potential exists for offsets or trading based on nonexistent loading. The starting point needs to be based on the best data for characterizing existing conditions in all tributaries.

7. <u>There can be no wasteload allocation for the proposed Spokane County Plant as there is no assimilative capacity in the river for additional loading</u>.

As discussed extensively in the Sierra Club/CELP comments on the 2007 Draft, as currently designed, the proposed Spokane County plant will not meet the WLA upon commencement of discharge and, despite the addition in allowable loading due to the border changes, large reductions in NPS loading must be accomplished to create capacity in the river for the existing discharges. A TMDL for phosphorus in Hangman Creek for dissolved oxygen and pH will determine there is no seasonal loading capacity for the six Washington dischargers in that watershed as well (plus two or three on the Idaho side).[22] As it is unlikely these reductions will occur, there is no legitimacy in allowing more loading from a new discharger, especially one that intends to expand over time. There are no offset regulations in Washington water quality standards for new discharges and no new capacity will be created until NPS are overcontrolled. (*See* Sierra Club/CELP 2007 Draft Comments, comment 26.)

As evidenced by Table 3 in the 2008 Draft, Ecology appears eager to help Spokane County obtain credit based on phosphorus reductions in groundwater from its septic elimination program. Credits for offsets cannot be given unless the source is over-controlled, i.e. reduced below the amount necessary to meet water quality standards. Until the model is recalibrated to include that portion of groundwater loading attributed to human causes, there is no baseline for offset credits.

8. <u>The TMDL and corresponding NPDES permits must prohibit increased loading prior to installing treatment to avoid further degradation of water quality.</u>

p. 31: "The NPDES permits will require calculations using actual, not projected flows to determine compliance with the wasteload allocations."

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[22] <u>Ex. 2</u>: EPA review, Draft Hangman TMDL at 131(I strongly advise Ecology to clarify to these municipal dischargers that meeting 50 ug/l is very likely to be subsequently determined as inadequate to protect water quality in the Creek. .and they may have to achieve lower or even no loading of pollutants that affect pH and D.O. FYI. Modeling by Butkus, Ecology-WQP documented this lack of assimilative capacity in Hangman years ago.)

the summary. As shown by Table 5, they are the instream phosphorus concentrations of either 7 or 8 ug/L (or lower per recent data) However, Table 9 in the MIP shows 10 ug/L for phosphorus. These inconsistencies will result in further degradation if uncorrected. Additionally, as the "dischargers are committed to purchasing and installing new treatment technologies now upon EPA acceptance of the TMDL," why do they need ten years for installation?

- Page G-182, # 21: There are no changes in the 2008 Draft that indicate Ecology intends to use its authority to require plant modifications as necessary to meet WQS and WLAs

Part E

- Page G-190, # 7: Although changes were made to the 2008 Draft indicated that only the Dischargers and Ecology agreed that the Foundational Concepts would guide implementation of the TMDL, the Draft states five different times that the document was developed by the TMDL Collaboration. As stated in our previous comments, the document was not a consensus document and not a product of the group as a whole. The modifications made are insufficient.

Part H

- Page G-196, # 4: Although the 2008 Draft clarifies that WLAs will be based on actual, not projected flows, it does not address increased flows prior to 2017. In fact, Response # 11, G-238 states, "Nutrients are capped at the concentration of the final wasteload allocation, despite any increases in flow. Therefore, there is no allowance for increased loading." The final wasteload allocation in 2017 is based on increased flows in the next ten years. The TMDL and NPDES should be modified as necessary to clarify that the compliance schedule applies to current loading to avoid further degradation.

- Page G-196, # 5: Under federal regulations, no permit may issue to a new discharger if the discharge will cause or contribute to water quality violations. In addition, where the proposed discharge is to impaired waters under § 303(d), no permit may issue unless there are sufficient remaining load allocations for the discharge Here, the river is overassimilated and will continue to be under this TMDL for 20 years. Until nonpoint sources are overcontrolled and all existing dischargers are at background, there is no capacity for new loading. The response in H(1) is nonresponsive as it addresses the issue of offsets, not assimilative capacity under 40 CFR 122.4.

- Page G-196, # 7: The response is nonresponsive to the issue of allocations for Kaiser's cooling water.

Part J

- Page G-203, # 6: Simply saying that point sources using biological nutrient removal plus filtration will likely control CBOD and ammonia does not qualify as a sufficient scientific basis. The 2008 Draft should provide support for this statement.

Part O

- Page G-219, Ecology Summary Response: Washington's water quality standard for lakes reads: "For lakes, human actions considered cumulatively may not decrease the dissolved oxygen concentration more than 0.2 mg/L below natural conditions. WAC 173-201A-200(1)(d)(2)." Not, as stated in the summary response, "no measurable decrease in

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

2.1 Sierra Club to Spokane County Commissioners (12-1-08)

SIERRA CLUB
FOUNDED 1892

Upper Columbia River Group

Box 413
Spokane, Washington 99210
www.idaho.sierraclub.org/uppercol/

December 1, 2008

Honorable Bonnie Mager
Honorable Todd Mielke
Honorable Mark Richard
Spokane County Commissioners
Spokane, Washington

Re: Spokane County DBO Contract Comments

Dear Spokane County Commissioners,

Thank you for the opportunity to provide additional comments regarding the draft design-build-operate contract for the County's proposed wastewater treatment plant. These comments are submitted on behalf of Sierra Club Upper Columbia River Group and the Center for Environmental Law & Policy, and have been prepared with the assistance of the Center for Justice. As before, we urge the Commissioners to reconsider the technology choices it has made to date – before the commitments become irrevocable.

1. **The County should not commit by contract to the design, construction and operation of a wastewater treatment plant which, as currently designed, is ineligible for requisite permits and state funding.**

The County is committing over $127 million dollars to build a wastewater treatment plant that relies on discharge to the Spokane River. In order to discharge into the river, the County must first obtain a § 404 permit from the Corps of Engineers, which in turn requires a §401 certification from Ecology. 33 U.S.C. § 1341; Ch. 173-225 WAC. The purpose of a § 401 certification is to ensure that a project requiring a federal permit is in full compliance with the salient provisions of the CWA and state law. A § 401 certification may not be issued if the proposed activity does not have the appropriate NPDES permit or will cause or contribute to violations of state water quality standards.

Because the County is building a new plant at a site for which no plant existed, it is a new discharger under federal and state law. Under these laws, existing dischargers who discharge into critically impaired waters and who are unable to meet necessary water quality standards may be given compliance schedules to meet these standards; new dischargers may not. Instead, new dischargers like the County must meet water quality standards upon commencement of discharge. The policy behind these regulations accommodates the costs and equities associated with forcing existing facilities to upgrade versus requiring new facilities to incorporate the latest technologies. "This distinction is based on the concept that new facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies."[1]

[1] Rules and Regulations, EPA, 40 C.F.R. Parts 122, 134, and 125, National Pollutant Discharge Elimination System Permit Regulations, 49 Fed. Reg. 37998 (September 26, 1984).

The Spokane River and Lake Spokane are critically impaired for the pollutant phosphorus. As a result, all Washington State Spokane River dischargers must reduce phosphorus concentrations in their discharge to background levels, or at least 10 ug/l. Although there are other plants in the country meeting this limit through various technologies, the County's chosen technology, MBR, cannot.[2]

Nevertheless, the Draft TMDL holds out the possibility of an NPDES permit through offsets from septic tank elimination. This is unavailing for several reasons. First, in a 2007 decision, the Ninth Circuit found there is nothing in the Clean Water Act or its regulations that provides an offset for new dischargers discharging pollution into impaired waters.[3] Second, even if offsets were allowed to new dischargers, it is doubtful the County can demonstrate phosphorus reductions from its elimination program in a scientifically defensible manner.

To date, there has been no study with source-specific data sufficient to differentiate between human-caused phosphorus loading such as that from septics and natural background loading in area groundwater. Although the County tendered a memorandum on loading from septic systems to Ecology, peer reviewers, including scientists from Ecology, Sierra Club, and the County's current consultants on its Nonpoint Source Study, found the study insufficiently rigorous to meet credibility standards.[4] Ecology found the study failed to quantify uncertainty in phosphorus loading and migration to the river, address variability in the effluent quality, provide an appropriate margin of safety, or account for attenuation as phosphorus migrates through the aquifer. Likewise, Sierra Club experts found the study failed to utilize scientifically defensible procedures and analyses. Finally, at the October 23, 2008 meeting of the Spokane County Nonpoint Source Advisory Committee, GEO Engineers presented findings regarding its review of the credible studies and data on phosphorus from nonpoint sources contributing to low dissolved oxygen in the Spokane River and Lake Spokane. GEO Engineers reported that the County's memorandum by HDR was rejected because it lacked data supporting its conclusions.[5]

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[2] The following examples are taken from EPA's Advanced Wastewater Treatment to Achieve Low Concentration of Phosphorus at http://yosemite.epa.gov/r10/water.nsf/Water+Quality+Standards/AWT-Phosphorus. None of these plants were required to achieve the low phosphorus concentrations as those required in this watershed. Hence it is likely they could achieve even better performance if required. See:

- Breckenridge S.D., Farmer's Korner WWTP, CO, capacity – 3 mgd; Type of treatment – BNR, chemical addition, filtration; Ave. Effluent Phosphorus Concentration – 7 ug/l ;Range of monthly ave. phos. concentrations – 2 to 3 ug/l;
- Summit County Snake River WWTP, CO, Capacity – 2.6 mgd; Type of treatment – BNR, chemical addition, filtration, Ave. Effluent Phosphorus Concentration – 10 ug/l, Range of monthly ave. phos. concentrations – 10 to 40 ug/l;
- Stamford WWTP, Stamford, NY, Capacity – 0.5 mgd; Type of treatment –Chemical addition, filtration; Ave. Effluent Phosphorus Concentration – 11 ug/l, Range of monthly ave. phos. concentrations – 5 to 60 ug/l;
- Walton WWTP, Walton, NY, Capacity – 1.55 mgd, Type of treatment – Chemical addition, filtration, Ave. Effluent Phosphorus Concentration – 10 ug/l; Range of monthly ave. phos. concentrations – 5 to 60 ug/l.

[3] *Friends of Pinto Creek*, 504 F.3d. 1007 (9th Cir. 2007).

[4] Onsite Sewage Disposal Systems Phosphorus Loading Estimate, May 31, 2006 (HDR).

[5] Exhibits 1A-1D. Also attached is a letter from the Spokane County Commissioners to Jay Manning, Director of the Washington State Department of Ecology, regarding the County's noncompliance with the GMA and the consequent suspension of SRF funding. In this letter, the commissioners state, "The septic systems are one of the primary non-point sources contributing to documented violations of

Without offsets or a technology that would meet the stringent phosphorus limits required by the TMDL, the County is ineligible for an NPDES permit and hence ineligible for funding through the State Revolving Fund Loan Program (SRF). Moreover, SRF funding is unavailable without an approved facilities plan. In 2003, the County applied for an estimated $ 73.5 million loan for its facility. By law, contracts for these loans must be signed within a year. In 2004, Ecology gave the County notice that as designed, its facilities plan was ineligible for an SRF loan.[6] However, Ecology agreed to release up to $8.5 million to allow the County an opportunity to revisit the shortcomings of its facilities plan. Unfortunately, the County declined to address alternatives in a substantive fashion over the past four years. Currently, Ecology has only issued a conditional approval of the County's facilities plan. Until the plan is amended by providing seasonal out of river discharge or utilizing a technology that will meet water quality standards, Ecology cannot issue final approval nor can it commit more SRF funding.

The County should not commit taxpayer funds for the building of plant that cannot be permitted or finally approved and will not be eligible for federal and state funding. The County should utilize the remaining money in its $8.5 million loan to address the plan's deficiencies prior to entering into a contract.

2. **It is fiscally irresponsible for the County to sign a 20 year contract with a private corporation for the design, construction and operation of a plant the design and cost of which are unclear.**

Under the regulations governing State Revolving Fund loans, the County must demonstrate that design, build, operate (DBO) is the most cost-effective alternative for procurement. (WAC 173-98-800.) It is not clear that the Draft Service Contract (DSC) contains appropriate safeguards to provide incentives for efficiency and disincentives for cost escalation through privatization of the entire process.

Proponents of public-private projects often base their support on purported efficiencies in the private sector forged through competition. Here, there is arguably no competition. CH2M HILL was one of only two companies who bid on the project. Moreover CH2M HILL already services the largest wastewater facility in the area, the City's.

Private corporations are not public servants. Their allegiance is to their shareholders, not the public, and their primary motive, some would say duty, is profit. Clearly, no private corporation would enter into this contract without a guaranteed profit.

In the context of a DBO contract for wastewater services, profit is generally a percentage of the total amount the company spends on the construction, operation, and maintenance of the facility. Private companies thus have an incentive to unnecessarily inflate the costs in all areas. The upshot: A contractor will never spend $1 million to do a job when it can spend $10 million and thereby earn a higher fee. So, contractors actually earn more money by wasting taxpayer money.

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dissolved oxygen water quality standards in the Spokane River and Lake Spokane." To date, there is no data supporting this statement. See Ex. 2D

[6] Exhibits 2A-2C.

The higher the cost of construction, operation, repair and maintenance, the higher the profit. Because the public guarantees 100% payback on the costs, the contractor here has a guaranteed upside to spending more of our money. Additionally, any part of the profit that goes to corporate headquarters as profit is lost to this community.

By contrast, a facility built or at least operated by the local government has legal incentives and duties to cut-costs where possible while keeping quality high. Cost savings, or profit, are reinvested rather than distributed to shareholders and money spent on the facility and its employees stays in the community.

The DSC does not assuage concerns about privatization of this essential service. Although the DSC appears to contain a "Fixed Design/Build Price" of $127,300,000 (Art. VII, § 7.4(B), this price is subject to the many adjustments and formulae outlined in subsection (C) as well as reimbursement for state and use taxes. Under the facilities plan, upon which the design is based, the contractor's overhead and profit are fixed at 10% of the unit process costs while the contractor's engineering, administrative and legal costs are fixed at 25% of the total construction costs. (Final 2007, 2006 Amendment, ch. 9, Table 9-1.)

It is unclear what profit level is built into the DSC "fixed price," but it clearly is otherwise the contractor would have no incentive to bid. The design, for which the contractor is responsible, is not yet complete (Art. IV § 4.4) making it unlikely that the "fixed price" will not undergo revisions. Thus, as drafted, the DSC is hardly transparent and the taxpayer can easily anticipate costs much higher than those cited. Moreover, to the extent the DSC is actually a cost-plus contract, it is not eligible for SRF funding. (WAC 173-98-110.)

Additionally, the DSC provides a service fee based on the formulae set forth in Art. XIII as well as a 10 % mark-up for contingency and other costs for the performance of its major repair and replacement obligations to third persons. It is unclear whether the contractor has complete discretion to enter into subcontracts or whether these are also subject to the state's rules on bidding for government contracts. Nevertheless, given the profit requirement, there is an incentive to spend more than necessary.

The two largest components of O&M costs in MBR plants are membrane replacement and energy costs.[7] Indeed, the membrane cassettes are included in the major repair and replacement charges under this contract. Despite recent improvements in MBR technology, these are still subject to fouling requiring costly repair and replacement.(*Id.*) Although the DSC cites a lifespan of 20 years, the literature values show a lifespan somewhere between three and seven or eight years. (A16-6.) Repair and replacement are likely to be a large expense. According to the DSC, there are six membrane cassettes with a unit price of $ 178,226 each, for a total of $1.3 million. It is likely that these repairs and replacements will be made by the vendor resulting in increased costs to the taxpayers and profit to CH2M HILL.

The energy costs of MBR plants remain 30 to 50% higher than more conventional technologies as well – a cost that will be passed on to taxpayers and will not impair the

[7] *The Bottom Line, Experts Evaluate the costs of municipal membrane bioreactors, Water Environment & Technology* (2008). *See also Mass transfer coefficient determination of a two-phase flow for an UF membrane in a side-stream MBR*, MBR Network (2008) at www.mbr-network.eu.mrb-database/literature-details.php?VID=104.

contractor's bottom line.[8] Where the same entity chooses the design, builds the plant and operates it, and the taxpayer reimburses all expenses, there is every incentive to increase costs throughout the life of the plant.

It is common sense that a private corporation must charge more for running a plant than a local entity. The County should retain control of this plant.

3. CH2M HILL's record as a service provider for the public sector raises concerns about its future performance.

CH2M HILL and its subsidiaries have a checkered past in providing services to the public. According to the Project on Government Oversight's Federal Contractor Misconduct Database, CH2M HILL was the subject of at least six enforcement actions from 2000 to 2006. These included the following:

1/1/06 – A $2,000,000 criminal fine was levied against OMI, a CH2M Hill subsidiary, by the Department of Justice under a Deferred Prosecution Agreement for violations at two wastewater treatment facilities in Connecticut. Pursuant to the agreement, OMI was required to contribute $2 million to community projects and take other agreed upon steps to enhance CWA compliance procedures at the two facilities. The violation related to the failure to comply with sampling and reporting requirements.

3/10/05 - A $ 316,250 fine was levied against a CH2M HILL subsidiary by the Department of Energy for safety and operational events, including multiple personnel contamination events at the Hanford Tank Farms.

12/17/03 - An undisclosed settlement with the Department of Energy regarding alleged discrimination and a pattern of reprisal in violation of whistleblower protection provisions of various environmental laws on the part of CH2M HILL Hanford Group, Inc.

8/29/03 – An $82,500 fine by the Department of Energy against the CH2M HILL subsidiary regarding noncompliance in the areas of quality improvement, failure to correct known quality problems, ineffective management assessments, failures to follow established procedure, and profound inattention to detail, reluctance to report events, and attempts to conceal problems by personnel.

6/25/00 – A $50,000 fine by the Department of Energy against the CH2M HILL subsidiary based on quality problems with the procurement of safety class piping which could have resulted in "significant consequences to the public and the environment."[9]

Other incidents involving this corporation include the following:

- In Spokane, a judge ordered CH2M HILL to pay an estimated $ 6 million in connection with the 2004 death of a City employee when the roof of a digester at Spokane's wastewater treatment plant collapsed.[10]

[8] MBR Network, 2006.
[9] See http://www.contractormisconduct.org.
[10] See http://www.kxly.com/Global/story.asp?S=9198152&nav=menu683_2_10.

- In Stockton, California, OMI, the water division of Colorado-based CH2M HILL, and Thames Water were awarded a 20-year, $600 million contract to privatize the city's water department. Due to rising rates, increased leakage, skyrocketing maintenance backlogs, constant staff turnover, and an eight million gallon sewage spill that contaminated a mile-long stretch along the San Joaquin River popular for swimming, these companies were voted out. As reported, the CH2M HILL managers at the plant failed to notice the spill for 10 hours and failed to notify the public for another three days. Upon resuming control over the system, the city faced a huge backlog of maintenance problems requiring millions to fix.[11]

- In August 2008, the City of East Cleveland filed a $14 million lawsuit in Cuyahoga County Common Pleas Court against the local and global offices of CH2M HILL as well as the city's former mayor and a local businessman over a contract to provide utility services. The suit alleged that under the contract, CH2M HILL was paid $3.9 million to provide Water Department services that the city had provided for only $1.4 million.[12]

- On July 7, 2005, a CH2M HILL subsidiary spilled 85 gallons of radioactive waste at the Hanford Plant for which it faces potential fines.

- In Los Angeles, the Department of Water and Power sued CH2M HILL for allegedly overcharging the utility up to $4.5 million on the Owens Valley restoration, according to a city audit.[13]

- According to the Associated Press, CH2M HILL was once more fined $82,500 for violating nuclear safety requirements at Hanford which resulted in employee contamination with radioactivity on Sept. 21, 2005 and another in March.[14]

- In 2003, federal agents seized documents and computer files from wastewater plants operating by OMI in Santa Paula, California. In June of 2006, the company settled the complaint in which it had been charged with "unlawful, unfair or fraudulent acts." *See Thirst, Fighting the Corporate Theft of our Water*, A. Snitow and D. Kaufman (2007) citing "OMI Pulling Out as Santa Paula Wastewater Treatment Operator," *Santa Paula Times*, Feb. 11, 2004; C. Miller, "Two OMI Plants in Hot Water," *Stockton Record*, Mar. 19, 2003; Press release from County of Ventura District Attorney, http://da.countyofventura.org/06-051.htm, June 29, 2006.

The performance of private contractors has grown by 200% during the Bush administration with a correspondent increase in government spending and decrease in oversight. Given the lack of transparency governing the true costs of this contract in conjunction with this company's reported problems in fulfilling government contracts, we would urge the County not to enter into contract with CH2M HILL and to operate the facility itself on behalf of the public. We would also urge the County to increase transparency and incentives for cost control in any contracts it signs for the design and construction of its County wastewater treatment services.

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[11]From "Drinking at the Public Fountain, The New Corporate Threat to Our Water Supplies," Alan Snitow and Deborah Kaufman (Copyright 2008).
[12] See http://www.naplesnews.com/news/2008.
[13] See http://ronkayela.com/2008/08/.
[14]See http://www.nytimes.com/2006.

4. Scalability and Effectiveness of Dual Sand Technology

During the public hearing, Commissioner Mielke questioned whether other technologies, such as continuous backwashing upflow dual sand (CBUDS), have been developed above 1 million gallons per day (MGD). EPA Region 10's recent report, entitled Advanced Wastewater Treatment to Achieve Low Concentration of Phosphorus, provided a detailed assessment of treatment technologies achieving very high levels of phosphorus removal.

A copy of this report is attached (Ex. 3A). This report made several important conclusions regarding treatment technologies such as CBUDS:

- The cost of applying tertiary treatment for phosphorus removal is affordable, when measured by the monthly residential sewer fees charged by the municipalities that operate these exemplary facilities. The monthly residential sewer rates charged to maintain and operate the entire treatment facility ranged from as low as $18 to the highest fee of $46.
- There appeared to be no technical or economic reason that precludes other dischargers from using any of the tertiary treatment technologies that are employed at these WWTPs. Any of these technologies may be scaled as necessary to fulfill treatment capacity needs after consideration of site specific conditions.
- Other pollutants that commonly affect water quality such as biochemical oxygen demand, total suspended solids, and fecal coliform bacteria are also significantly reduced through these advanced treatment processes.

It is important to note that MBR technology was not considered by the EPA report as a phosphorus removal technology worth evaluating as part of it evaluation. Indeed, this conclusion is mirrored by the comments recently submitted by Veolia that indicated that other technologies are more effective in phosphorus removal. The finding of EPA's report are consistent with the attached chart, completed as part of a technology review in New York, which indicates that the performance and operation of a CBUDS is superior to the County's proposed microfiltration technology. See attachment (Ex. 3B)

As far as scalability of CBUDS technology, based upon review of the available literature and discussions with engineers from vendors (including BlueWater and Parkson), there is no reason why CBUDS filters cannot be scaled to any size application, including Spokane County's proposed facility. There are numerous examples of large CBUDS:

- The Walton and Stamford WWTPs in New York have peak treatment capacities of 4.5 and 1.5 MGD, respectively. Each of these installations has demonstrated outstanding phosphorus removal performance. These plants are featured in the attached EPA report. See attachments (Ex. 3C).
- BlueWater filters will be installed at a WWTP in Marlborough, Massachusetts, which will have an average design capacity of 4 MGD and peak hydraulic capacity of 12 MGD. BlueWater is also getting excellent P-removal results in Florida. See attachment (Ex. 3D).
- The Moscow, Idaho WWTP is installing Parkson filters which will be run in single stage mode during the winter and as two stage filters during the summer. The average daily flow is 2.25 to 2.50 MGD with peak flows approach 6 MGD.
- The LOTT Budd Inlet Advanced WWTP installed Parkson filters with at least 1 MGD capacity to generate reclaimed wastewater.

Other examples of the application of Parkson's CBUDS filters to both a water and wastewater treatment setting in a variety of ranges (including many over 1 MGD) are detailed in the attached chart (Ex. 3E).

5. Cost-Effectiveness Wastewater Treatment

Finally, we would reiterate that the County has failed to date to prepare a cost-effectiveness analysis that compares the various technologies available that could achieve better phosphorus removal results and/or produce Class A reclaimed water. Until such an analysis is produced and objectively considered by the County, it is not in the public interest to enter into a contract for construction of any plant, and certainly not the expensive facility proposed by CH2MHill.

Thank you for the opportunity to provide these additional comments.

Yours very truly,

Rachael Paschal Osborn
Executive Director, Center for Environmental Law & Policy
Spokane River Project Coordinator, Sierra Club Upper Columbia River Group

And on behalf of:

Rick Eichstaedt, Attorney
Bonne Beavers, Attorney
Center for Justice

Attachments:
EXHIBIT 1
- 1A) DOE letter to Bruce Rawls, Feb. 8, 2007
- 1B) Gary Andres, Review of HDR Phosphate Study Report, June 27, 2006
- 1C) Gary Andres, Review of HDR Phosphorus Loading Estimate, Jan. 15, 2007
- 1D) Joel Massman, Technical Memorandum re Review of HDR Onsite Sewage Disposal Systems Phosphorus Loading Estimate, Oct. 8, 2007

EXHIBIT 2
- Letters re: SRF funding
    - 2A) Dept. of Ecology to Spokane County, Nov. 7, 2003
    - 2B) Dept. of Ecology to Spokane County, Aug. 2, 2004
    - 2C) Dept. of Ecology to Sierra Club, Aug. 18, 2004
    - 2D) Spokane County to Dept. of Ecology, Aug. 12, 2008

EXHIBIT 3
- 3A) USEPA, Advanced Wastewater Treatment to Achieve Low Concentration of Phosphorus, April 2007.
- 3B) USEPA & NYC DEP/NYS DOH 1998 Comparison of 2 Filter Technologies
- 3C) Walton Effluent Total Phosphorus Time Series for 2003, et al.
- 3D) Blue Water Technologies, Blue Pro Pilot Project Report (Feb. 2008)
- 3E) DynaSand D2 Advanced Filtration Systems Reference List
- 3F) Hook, G., "The Ultimate Challenge for Technology: 0.02 mg/l Effluent Total Phosphorus"

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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November 7, 2003

Mr. N. Bruce Rawls, P.E.
Utilities Division
Spokane County Public Works Dept.
1026 W. Broadway
Spokane, WA 99260-0430

RE: Spokane County Regional Wastewater Treatment Facilities and State Revolving Fund Loan (SRF) Agreement Offer

Dear Mr. Rawls:

Thank you for your October 10 letter with inquiries regarding how Spokane County, the City of Spokane, the City of Spokane Valley, and Ecology can partner to provide better wastewater service and water quality to the region.

In the first part of your first question you asked about changing the scope of the project. Ecology is willing to write the project description in the loan agreement to be consistent with the content and intent of the funding application, the wastewater facilities plan, and the supplemental environmental impact statement. The scope of the loan agreement must reflect the content and recommendations of the approved documents.

In the second part of your first question you asked about Ecology's concern with delays in signing the SRF loan offer as long as it is prior to the offer deadline. Our concern regards meeting certain time requirements in implementing the project as described in the funding application and approved engineering documents. The first concern is that the agreement must be signed within twelve months of the publication of the SRF Final Intended Use Plan. Our August 15, 2003, loan offer letter states that you have until August 16, 2004, to negotiate and sign a loan agreement with Ecology. The second concern is the need to demonstrate both project initiation within sixteen (16) months of the loan offer plus ongoing and routine progress thereafter, no more than one time extension, of no more than twelve months, may be made when there are valid reasons for the extension and when the extension is included in the signed funding agreement with Ecology. Valid reasons for a time extension allowing a start date more than sixteen months after the publication date of the Final Intended Use Plan are limited to schedules included in water quality permits, consent decrees, enforcement orders, or the recipient and Ecology agree there is a need to do work during an environmental window in a specific season of the year. If the funding recipient has one of these valid reasons to wait longer than sixteen months to start the project, the reasons why it will take longer and the schedule the recipient will

executed soon enough so that the appropriate language and conditions can be incorporated into the loan agreement.

In the first part of the fifth question you asked if the County is correct in understanding that Ecology will issue an initial discharge permit for the plant on the basis of, and consistent with, the projected effluent quality in the approved wastewater facilities plan. Our response is yes; the initial National Pollutant Discharge Elimination System (NPDES) permit will be developed, written, and consistent with the projected effluent quality in the approved wastewater facilities plan.

In the second part of the fifth question you asked if Ecology is willing to execute an Agreed Order that would assure that the first phase of the plant will be permitted for its design capacity life (projected to be 10-years) before a major change in effluent discharge standards is required. State and federal law prohibits Ecology from issuing a discharge permit for a term longer than five years. Consequently, Ecology is unable to assure that the effluent limits in the initial discharge permit will remain unchanged for a ten-year period. However, the Department is willing to exercise its enforcement discretion by issuing an Agreed Order with a compliance schedule tied to the 10-year design capacity for the new facility to come into compliance with any new requirements that may be included in the forthcoming Total Maximum Daily Load (TMDL). Ecology is willing to exercise our discretion in this manner so long as: a) at the time of construction completion the subject facility will produce the best possible quality effluent consistent with AKART requirements, and b) the design of the subject treatment works incorporates flexibility for adding whatever additional treatment the forthcoming TMDL may require as part of the second phase of the facility.

Thank you for sharing your questions and concerns regarding such an important issue. It is encouraging indeed to see such an interest in combining efforts to facilitate long-term wastewater treatment strategies for the greater Spokane area. I can assure you that the Department of Ecology will do whatever it can to assist in this effort while being protective of the environment around us. Please feel free to contact me at (360) 407-6405 or the Eastern Regional Office Ecology staff in Spokane as we continue to work together on this project.

Sincerely,

Richard K. Wallace, Manager
Water Quality Program

cc: Neil Kersten, City of Spokane Valley Public Works Director
Dale Arnold, City of Spokane Wastewater Manager
Steve Carley, Financial Assistance Manager, Washington Department of Ecology
Jim Bellatty, ERO, Washington Department of Ecology
Len Bramble, ERO, Washington Department of Ecology

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-40[illegible]
TTY 711 or 800-833-6388 (For the Speech or Hearing Impaired)

August 2, 2004

N. Bruce Rawls, P.E.
Utilities Division
Spokane County Public Works Department
1026 West Broadway
Spokane, Washington 99260-0430

Dear Mr. Rawls:

RE: Spokane County Regional Wastewater Treatment Plant
State Revolving Fund Loan Offer (FP04094)

Thank you for your July 22, 2004, letter regarding Spokane County's interest in signing an $8.5 million loan from the state's Water Pollution Control Revolving Fund (SRF) that was offered to the county during the Fiscal Year 2004 funding cycle for the design-build of a new regional wastewater treatment facility. The purpose of this letter is to provide an $8.5 million SRF loan for your review and signature. The loan is for updating the Wastewater Treatment Facility Plan to reflect requirements of the Spokane River total maximum daily load (TMDL), and subsequently to design and construct the new Spokane County regional wastewater-treatment plant per the approved and updated facility plan. The term of the loan is 20 years, with a 1.5 percent interest rate.

I want to emphasize Ecology's continued support for Spokane County and our commitment to help you finance a new wastewater treatment facility that will meet the county's long-term needs and the water quality standards of the Spokane River. The loan we are offering not only provides the county with the loan, but also reserves a place on future SRF Intended-Use Plans when the county needs additional loan funding for the project. This is conditioned on the county's successful completion and Ecology's approval of the facility plan amendment that addresses the dissolved-oxygen TMDL.

As you are aware, Ecology staff has worked closely with Spokane County Public Works and its consultants for the past several years to plan, design and construct a regional facility that will cost-effectively meet the future wastewater management needs of the county and the region, as well as address the complex water quality needs of the Spokane River. We recognize and appreciate that the planning for this project has been a very challenging and difficult process. However, Ecology and the U.S. Environmental Protection Agency (EPA) have determined that we will not be able to issue an NPDES permit for a new wastewater treatment facility based on the facility plan as approved by Ecology on February 28, 2003. In addition, a SRF loan cannot

be awarded to the county with the scope of work discussed in the facility plan at this time, based on the scientific and technical information that is currently available regarding the dissolved-oxygen TMDL. The data indicate that any discharge to the Spokane River will be required to meet very stringent, water-quality-based effluent requirements. Acknowledging these uncertainties, we believe it is prudent to complete the TMDL and amend the facilities plan before proceeding with the design and construction of a new regional wastewater treatment facility. Ecology and EPA are committed to working with Spokane County and others to finish the dissolved-oxygen TMDL and to develop an implementation strategy that will be legally and scientifically defensible.

The enclosed SRF agreement has been structured with the following conditions:

Section IV.
Subsection A. Project Description, Page 3
The project involves preparing an amendment to the Ecology-approved facilities plan dated February 28, 2003, and the design and construction of an 8 MGD (annual average) wastewater treatment plant at a location east of Freya Street and south of Boone Avenue in the City of Spokane, commonly referred to as the former Stockyards. The wastewater treatment plant will be planned, designed, and constructed, to achieve compliance upon commencement of operation with National Pollution Discharge Elimination System (NPDES) effluent limitations, based on the waste load allocations established in the Spokane River Dissolved-Oxygen Total Maximum Daily Load.

ATTACHMENT 5
SCOPE OF WORK
Subsection C. Facilities Plan
The RECIPIENT shall develop an amendment to the Ecology-approved facilities plan dated February 28, 2003, to evaluate reclamation alternatives. The facilities plan amendment shall be in compliance with the National Pollution Discharge Elimination System (NPDES) effluent limitations, based on the waste load allocations established in the Spokane River Dissolved Oxygen Total Maximum Daily Load. An approvable facilities plan amendment shall meet the requirements of Chapter 173-240 WAC, "Submission of Plans and Reports for Construction of Wastewater Facilities," the facility planning requirements of "Title 40 Code of Federal Regulations," and RCW 90.46 Reclaimed Water Use.

ATTACHMENT 6
SPECIAL TERMS AND CONDITIONS
Subsection A. Disbursement of Funds. No funds will be disbursed for the design and construction portion of the project until the amendment to the Ecology-approved facilities plan dated February 28, 2003, is approved by Ecology.

If you find this agreement to be satisfactory, please have Commissioner Harris sign, date and return all three originals to me by August 13, 2004. We understand this timeframe is very tight for the county to review, sign and return the loan agreement, but we are nearing the regulatory limit of one year from the date of loan offer to sign a loan with the county by August 16, 2004.

In addition, please have your legal counsel sign and date the Opinion of Recipient's Legal Counsel (see Attachment 4 of the loan agreement).

Please let me know if you or other Spokane County officials would like to meet and discuss the enclosed SRF loan agreement in further detail. I can be reached at (360) 407-6405, or you can call Steve Carley of my staff at (360) 407-6572.

Sincerely,

David C. Peeler, Manager
Water Quality Program

Enclosures

Cc: The Honorable Phillip D. Harris,
Chair, Board of County Commissioners of Spokane County
The Honorable M. Kate McCaslin
Vice-Chair, Board of County Commissioners of Spokane County
The Honorable John Roskelley
Spokane County Commissioner
Rene-Marc Mangin, Ecology Eastern Regional Director
Jim Bellatty, Water Quality Program Eastern Regional Section Manager
Steve Carley, Water Quality Program Financial Management Section Manager

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N. Monroe Street • Spokane, Washington 99205-1295 • (509) 456-2926

August 18, 2004

Ms. Rachael Paschal Osborn
Sierra Club - Upper Columbia River Group
Box 413
Spokane, WA 99210

Dear Ms. Osborn:

The purpose of this letter is to respond to your July 19, 2004 letter regarding the proposed Spokane County wastewater treatment plant. In your letter you ask Ecology to (1) clarify the status of the proposed Spokane County wastewater treatment facility with respect to water quality permits and loan agreements, and (2) require Spokane County revise/amend their facilities planning and environmental review documents to provide compliance with the Spokane River TMDL.

In terms of clarifying the status of an NPDES permit for their proposed facility, Spokane County has not submitted an NPDES permit application to Ecology, therefore, an NPDES permit has not been issued. At this point, there has been no commitment to issue an NPDES permit and any future NPDES permitting opportunities will depend on the outcome of the Spokane River dissolved oxygen TMDL and the submittal and subsequent approval of an amended facilities plan. Both Ecology and EPA have communicated to the County that we will not be able to issue an NPDES permit for a new wastewater treatment facility based on the facility plan as approved by Ecology on February 28, 2003.

Regarding the status of the August 15, 2003, State Revolving Fund (SRF) loan offer to Spokane County, Ecology and Spokane County signed a loan agreement on August 12, 2004 for $8,500,000. The purposes of this loan are 1) to update the wastewater treatment facility plan to reflect the requirements of the Spokane River dissolved oxygen TMDL; and 2) to design and to construct a regional wastewater treatment facility per an amended and approved facility plan. The total amount of the SRF loan is $73,400,000 with a term of 20 years at an interest rate of 1.5%.

The following is an excerpt from the loan agreement which defines this project:

> *The project involves preparing an amendment to the Ecology-approved facilities plan dated February 28, 2003, and the design and construction of an eight million gallons per day (MGD) (annual average) wastewater treatment plant at a location east of Freya Street and south of Boone Avenue in the city of Spokane, commonly referred to as the former Stockyards. The wastewater*

> *treatment plant will be planned, designed, and constructed to achieve compliance upon commencement of operation with National Pollution Discharge Elimination System (NPDES) effluent limitations, based on the waste load allocations established in the Spokane River Dissolved Oxygen-Total Maximum Daily Load (TMDL).*

Based on the information presented in your letter, we believe that we have addressed your concerns and agree with your assertions that neither an SRF loan agreement or an NPDES permit application can be considered for Spokane County's proposed wastewater treatment facility unless all required documents (including facility plans and environmental studies) are consistent with the results of the Spokane River dissolved oxygen TMDL.

I sincerely appreciate your continued interest and involvement with these issues and hope we have answered your questions and concerns. Feel free to contact me again should you have additional questions or comments. If you are interested in obtaining copies of any of the documents referred to in this communication, I respectfully request you submit a public records request to our office at your convenience. If you need any further assistance or direction with that process please feel free to give me a call at 509-329-3534.

Sincerely,

James M. Bellatty

James M. Bellatty
Section Manager
Water Quality Program

JMB:dw
cc: Bruce Rawls, Spokane County
Linda Hoffman, Ecology
Dave Peeler, WQ-HQ
Steve Carley, WQ-HQ
Jim Bellatty, WQ-FTO
Tom Eaton, EPA

SPOKANE COUNTY

RECEIVED
AUG 14 2008
DEPARTMENT OF ECOLOGY
OFFICE OF DIRECTOR

OFFICE OF COUNTY COMMISSIONERS

TODD MIELKE, 1ST DISTRICT • MARK RICHARD, 2ND DISTRICT • PHILLIP D. HARRIS, 3RD DISTRICT

August 12, 2008

Mr. Jay Manning, Director
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

SUBJECT: SRF LOAN L0500006--GMA COMPLIANCE

Dear Mr. Manning:

The Eastern Washington GMA Hearings Board has found Spokane County to be out of compliance with the Growth Management Act (GMA). Our State Revolving Fund (SRF) Loan agreement stipulates that we notify Ecology under this circumstance. We understand that grant and loan payments will be withheld, in accordance with Chapter 36.70A RCW and RCW 70.146.070(6) until such time as compliance is achieved, or until there is a "documented public health need" or if "substantial environmental degradation" is occurring. Chapter 173-95A WAC provides the mechanism for the Director of the Department of Ecology to determine that "substantial environmental degradation" exists.

This letter provides documentation relative to the Spokane County Wastewater Management Program/Septic Tank Elimination Program, and requests you to determine that substantial environmental degradation is occurring.

Since the early 1980's, Spokane County has been engaged in a Septic Tank Elimination Program (STEP) to remove the existing septic systems located over the urbanized portion of the Spokane Valley. The purpose of this program is to protect the Spokane Valley-Rathdrum Prairie Aquifer, a sole source of drinking water for over 400,000 people. By the late 1990's substantial progress had been achieved, and a program was adopted to complete the STEP program before 2015. However, it was apparent that additional regional wastewater treatment capacity would be required to process the wastewater from the remaining septic systems to be removed. In 1999, the City of Spokane sent a letter to the County indicating that no additional future capacity would be available in their regional plant. The County conducted an extensive facilities planning effort to establish the best alternative for additional regional treatment capacity and chose to construct a new regional water reclamation facility. In August 2004, the County and Ecology signed an SRF loan agreement for $73.4 million. Since then, the construction of the new facility has been delayed by the Spokane River DO TMDL. Currently, Spokane County is in the negotiation process with the preferred respondent to deliver the project using Design-Build-Operate. We anticipate commencing design and construction in January 2009 and start-up of operations by June 2012. The $73.4 million SRF loan is a critical part of the County's financing program for this facility. Without this loan, the County will be challenged to deliver the facility, which will impact the County's ability to complete the STEP, and will impact the County's program to protect the water quality in the aquifer.

1116 WEST BROADWAY AVENUE • SPOKANE, WASHINGTON 99260-0100 • (509) 477-2265

The treatment facility is necessary to provide capacity for removal of septic systems. Removal of septic systems is not only critical to protection of the drinking water supply, but also is critical toward meeting the Spokane River DO TMDL. The septic systems contribute substantial phosphorus (P) loading into the aquifer, which recharges the Spokane River, and provides P loading into Lake Spokane. The septic systems are one of the primary non-point sources contributing to documented violations of dissolved oxygen water quality standards in the Spokane River and Lake Spokane. Further, the P loading from the septic systems into the aquifer, which eventually flows into the Spokane River and Lake Spokane, interferes with the beneficial uses of these waters of the State.

Currently, approximately 9,000 septic systems exist within the County's sewer service area, which will be eliminated as a part of the STEP. However, because of the limited treatment capacity currently available to the County (10 million gallons per day), and because of the uncertainty related to the Spokane River DO TMDL, the County has adopted a temporary suspension of its mandatory sewer connection policy. Once the TMDL is resolved and an NPDES permit is issued, the County will be assured of its ability to operate the new water reclamation facility, and will resume its mandatory connection policy. The County needs the SRF Loan payments in order to complete the water reclamation facility on time, and to resume the mandatory sewer connection policy.

Spokane County believes that there is precedent for this request and for your determination. In 1997, the County made a similar request to Mr. Fitzsimmons, Ecology Director, in order to receive payments from the Extended Grant G9600356, and was granted a favorable determination. Your favorable determination on this request will also allow Spokane County to apply for, and be eligible to receive, loans or grants from the Public Works Trust Fund.

If you have any questions, please contact us at (509) 477-2265, or Bruce Rawls, County Utilities Director at (509) 477-7289.

Sincerely,

Bonnie Mager, Chair | Todd Mielke, Vice-Chair | Mark Richard, Commissioner

pc: Steve Carley, Financial Assistance Program
Cindy Price, Financial Assistance Program
Richard Koch, Ecology ERO
Bruce Rawls, Spokane County Utilities

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

2.2 Sierra Club comments on Spokane County WWTP DEIS (5-24-04)

May 24, 2004

Bruce Rawls *Delivered by Hand*
Spokane County Utilities
1026 West Broadway Avenue
Spokane, WA 99260-0430

Re: Comments - Spokane County Waste Water Treatment Facilities Plant Draft 2004 Supplemental EIS

Dear Mr. Rawls:

The following comments are submitted on behalf of the Upper Columbia River Group of the Sierra Club and The Center for Justice in response to your invitation to comment on the findings of the Draft 2004 Supplemental EIS for the Spokane County Wastewater Treatment Plant.

1. On page 3-16, the County represents that Ecology will issue a National Pollutant Discharge Elimination System (NPDES) permit for the new treatment plant. To the contrary, it is our understanding that there are significant questions as to whether Ecology can lawfully issue an NPDES permit under both the Clean Water Act (CWA) and the state laws governing water quality standards. Moreover, both EPA and Ecology made this clear to the County in writing and in meetings from February through May of 2004. (*See also* Exhibit 1, 2-2-04 letter from EPA to Ecology.) Although an NPDES permit is required to discharge wastewater into the river, there is nothing in the DEIS indicating these unresolved problems or discussing planned alternatives should the County be ineligible for an NPDES permit. This is a grave omission that renders the DEIS not only misleading but significantly deficient.

As EPA makes clear in its 2-2-04 letter, there are two primary reasons why it is unlikely the County qualifies for a permit. First, there is no waste load allocation for the County for phosphorus under the current TMDL, a clean-up plan which itself is not protective of the river. Second, Ecology's most recent technical evaluation of the river shows that during critical periods, there is no loading capacity for pollutants that exert an effect on dissolved oxygen concentrations without degrading water quality. Exhibit 1, page 1, ¶ 3. Thus, because the river has no assimilative capacity left for these pollutants, Ecology cannot authorize new discharges that would further degrade water quality. 40 C.F.R.122.4(i); WAC 173-201A-310; -510. See also RCW 90.48.520.

The EPA's concerns about the County's permit derive from the Clean Water Act. The objective of the CWA is to "restore and maintain the chemical, physical and biological integrity of the nation's waters." 33 U.S.C. § 1251(a). To that end, the Act seeks to eliminate "the discharge of pollutants into navigable waters" and to attain "water quality which provides for the propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." 33 U.S.C. § 1251(a)(1),(2). Under Section 303(d) of the CWA (33 U.S.C. § 1313 (d)), states must identify waterbodies within their boundaries that do not meet water quality standards and establish a priority for ranking those polluted water bodies based on the severity of the pollution and the type of use of that waterway. 33 U.S.C. § 1313(d)(1)(A). Pursuant to this section, Washington has identified segments of the Spokane River and Long Lake as water quality impaired.

Section 303 (d) also requires each state to determine how much of a pollutant a waterbody can endure before its quality becomes impaired. This determination is known as the Total Maximum Daily Load ("TMDL") calculation. The TMDL calculation must be made on a waterbody-specific and pollutant-specific basis wherever a pollution problem has been identified and other regulatory approaches are not resolving the problem. The TMDL must then establish waste load allocations for all point source dischargers and load allocations for non-point sources to ensure that the sum of all pollutants does not exceed the TMDL. In other words, the CWA requires each state to identify the maximum amount of each type of pollutant that a water body can handle without violating water quality standards. *See* 33 U.S.C. § 1313(d)(1)(C).

A National Pollutant Discharge Elimination System ("NPDES") permit is required for all discharges of a pollutant. 33 U.S .C. § 1342(a). The Washington State Department of Ecology (Ecology) issues these permits subject to review by the federal Environmental Protection Agency (EPA). 33 U.S.C. § 1342(a)(5) and (b). Under the regulations to the CWA, there can be no "new source" or "new discharger" if the discharge will contribute to a violation of water quality standards. 40 C.F.R. § 122.4(i). Thus, there cannot be a new source or a new discharger if the waterbody is a water quality impaired waterway *unless* the state completes a TMDL for that segment beforehand and allocates waste loads sufficient to protect water quality standards. *Id.*

There is an existing TMDL for phosphorus in Long Lake that establishes waste load allocations for the current point source dischargers. According to the EPA, however, the loading capacity for phosphorus in the current TMDL is not protective of water quality.

Moreover, a modeling assessment was completed in February 2004 that found the River is over-allocated for pollutants, including phosphorus, that deplete oxygen and that current dischargers must cut back on their pollution effluents. Wash. Dept. of Ecology, Spokane River and Lake Spokane (Long Lake) Pollutant Loading Assessment for Protecting Dissolved Oxygen, Publ. No. 04-03-006 (February 2004); Ecology Data Summary: Spokane River and Lake Spokane (Long Lake) Pollutant Loading Assessment for Protecting Dissolved Oxygen, Publ. No. 03-03-023 (August 2003). Ecology is scheduled to complete a new TMDL for pollutants that affect dissolved oxygen which will replace the existing phosphorus TMDL. Because Washington has not yet prepared the new TMDL for the Spokane River, however, no new loading may occur. 40 C.F.R. § 122.4. As a result, no matter the level of treatment proposed by the new plant, the County cannot contribute new loading to the River.

The federal regulations also require that state water quality standards must control all pollutants that "will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." 40 C.F.R. 122.44(d)(1)(i). Washington's Surface Water Quality Standards require that waste discharge permits must insure that discharges meet the state's water quality standards and will not cause or contribute to a violation of water quality criteria. WAC 173-201A-510. Additionally, under the statute governing the review of operations prior to issuance of a permit, no discharge of toxicants shall be allowed that would violate any water quality standard. RCW 90.48.520. Consequently, under both the CWA and the State's Water Quality Standards, the County cannot discharge lawfully into the River until a new TMDL is in place that provides for a waste load allocation. And, given the recent studies, it is doubtful that the County will receive a waste load allocation given the condition of the River.

There is also substantial concern that the County's plant would violate the downstream water quality standards of the Spokane Tribe. Under the EPA, tribes have the authority to establish NPDES programs in conjunction with the EPA. And EPA has the authority to require upstream NPDES dischargers to comply with downstream tribal standards. See 33 U.S.C.A. §§ 1311, 1341, 1342, 1377. *See also City of Albuquerque v. Browner*, 97 F.3d 415 (10th Cir.). The Spokane Tribe has a dissolved oxygen standard of 8 mg/L. According to the DEIS, Table 3-1, p. 3-16, the proposed plant's discharge requirements are lower than the Tribe's, a violation of their standards and in turn, of the CWA.

For the above reasons, there are grave doubts as to the County's ability to obtain an NPDES permit to discharge into the river. In light of these, the County had a duty under the State Environmental Protection Act (SEPA) to disclose these unresolved conflicts and concerns in the DEIS and to study, develop, and describe appropriate alternatives to discharge into the river. *See* RCW 43.21C.030(c) and (e). During the comment period on May 12, 2004, many citizens queried the County about what studies were conducted into such alternative technologies as land application, reclamation, reuse, biological treatment, and conservation. Several named specific cities where such techniques had been successful. Although the County indicated verbally that it had conducted such studies, the public had no ability to ascertain their depth, quality or appropriateness.

The SEPA requires more from the County, especially in light of the new data. It is not fiscally, environmentally, or socially responsible for the County to proceed as planned with this project without taking a hard look at technological alternatives to discharge in the river.

The County's inability to obtain a discharge permit and the consequent need to examine new treatment and management alternatives is directly tied to the County's siting decision. A zero discharge alternative would relieve the County from the need to site near the Spokane River or in a neighborhood such as East Central. Substantive factors for site selection might change dramatically depending on treatment technology. For example, if the County chooses to land apply some or all of its treated effluent, neither the Playfair nor Stockyards site would be appropriate for such an approach. Similarly, if the County elects to adopt an aggressive re-use program, there may be more suitable sites that are better situated to deliver treated water for beneficial use (e.g., location near golf courses or other businesses that could use treated wastewater).

The DEIS contains no analysis of site location for the proposed plant in view of the County's NPDES permitting dilemma. We would note that Sierra Club specifically asked the County to conduct this analysis in the DEIS in a scoping comment letter submitted at the County's invitation in March. Because the DEIS does not contain this analysis it is deficient and must be re-drafted for another round of public review and comment.

Additionally, SEPA requires the County to consult with and obtain comments of any public agency which has jurisdiction by law or special expertise with respect to any environmental impact involved, to provide the public with copies of such comments, statements or views, and to ensure that these accompany the proposal through the existing agency review processes. RCW 43.21C.030(d). Thus the County had a duty to make public EPA's views and statements and to ensure that these accompanied the proposal through the review process. RCW 42.21C.030(e). By failing to do so, the County violated SEPA.

2. Page 3-17, ¶ 1 provides: "Since it is anticipated that the initial NPDES permit will be issued before Ecology finalizes the TMDL for DO, the initial effluent limits will be interim and could be more restrictive in future permit cycles."

This is not in accordance with the law. As noted above, federal regulations prohibit issuance of a permit if discharge will violate water quality standards. 40 C.F.R. 122.4(i). Further, new sources or dischargers must be in compliance upon commencement and may not obtain a schedule of compliance. WAC 173-201A-510(4)(a). As stated by the EPA, Washington state water quality standards prohibit "establishing a compliance schedule for new dischargers to achieve compliance with effluent limitations necessary to protect water quality. These regulations require that treatment and control of pollutants in the effluent from a new discharge be adequate to protect water quality at the time

discharge is commenced." (Exhibit 1 at 2, ¶ 3). The County may not defer compliance with the new TMDL. The DEIS is inaccurate.

3. The County intends to fund its new treatment plant partially from the Clean Water Act State Revolving Fund (SRA). As stated by EPA, eligibility for these funds is predicated on operations that can be legally permitted to discharge. Because the County's proposed discharge is likely to violate state water quality standards, it can not be legally permitted to discharge into the river. The DEIS not only failed to address appropriate alternatives to discharging into the river, it failed to discuss whether or not these funds would be available for alternative sites.

4. Fact Sheet, page i, ¶ 1, states: "This proposal is based on the assumption that Spokane County will continue to provide wastewater management services to the new City of Spokane Valley. If the new City chooses not to have Spokane County provide wastewater management services, then the proposal may change substantially."

The State Environmental Protection Act ("SEPA") requires the County to address, in detail, alternatives to the proposed action as well as recommended courses of action in the proposal which involve unresolved conflicts concerning uses of available resources. RCW 43.21C.030)(c)(iii);(e). Here, the County admits that the entire proposal is based on an assumption and not a confirmed agreement from the Valley, and admits that, should the Valley not participate, the proposal would change substantially. Nevertheless, the proposal omits any discussion as to how the project would change should the Valley choose not to participate. The SEPA requires the County to address in depth appropriate alternatives involving unresolved conflicts. By failing to address this issue, the County violated SEPA.

5. Pages 1-6, ¶ 6, 1-7, ¶1, state: The City is interested in participating in the regional plant…." And "The City has stated an intention to make a portion of the site available for use by the County as a wastewater treatment plant."

Once again, the proposal is based on an assumption and entirely fails to address the impact and changes to the proposal should the City decide not to participate with the County in this project or to make the Playfair site available.

6. On page 1-15, it states that, upon operation, treatment plant vehicles and trucks would add an additional 52 – 74 trips per day. These include 24 trucks per day, presumably septic haulers, or approximately 3 trucks per hour, from midday through the afternoon hours. DEIS, p. 3-86, ¶ 1. The DEIS concludes these would have little impact on the local transportation system. DEIS, p. 3-87, ¶ 1. The neighborhoods near the Playfair site include residential areas and light commercial businesses. It is hard to imagine that three huge trucks passing each hour for seven hours in the middle of the day would not significantly impact the enjoyment and use of those in these neighborhoods. The DEIS does not explain how or why the passage of these large trucks would not impact the residents of this area.

5. Given that the County will probably not get a permit to discharge into the River, the County should withdraw its proposal to site the plant near the East Central Neighborhood. As stated in our scoping comments of 3/4/04, the East Central Neighborhood, a low and moderate income neighborhood that provides important affordable house and business sites to our city, has and will continue to suffer as the locus of a variety of public works projects. Most notably, I-90 expansion and the proposed north-south freeway will both remove existing housing and businesses, in significant numbers, from the neighborhood. As such, it is inappropriate for the County to propose to use the largest available parcel in that neighborhood for wastewater treatment – a use that will bring no jobs or commercial opportunities to the neighborhood. The reality is that the benefits of the wastewater treatment plant will accrue to many, while the burden will fall on East Central. It is no small irony that the City of Spokane's need to treat storm water running off the higher-income South Hill neighborhoods is driving your site selection process.

Economic impacts are appropriate for consideration under SEPA, especially when considered in balance with environmental impacts. As the Washington Supreme Court said in 2000: "SEPA does not require that those evaluating a proposed action consider environmental factors *alone*. Rather, the essential factors balanced frequently are the substantiality and likelihood of environmental cost *and* economic cost." Kucera v. Dep't of Transportation, 140 Wn.2d 200, 224 (2000).

Here, the continued targeting of the East Central Neighborhood for public works projects will lower property values and potentially adversely affect the quality of the human environment and human welfare. Spokane County must consider these potential impacts, including conducting a cumulative impacts analysis that examines what will happen if and when these various projects come to fruition.

The East Central Neighborhood, a low and moderate income neighborhood that provides important affordable house and business sites to our city, has and will continue to suffer as the locus of a variety of public works projects. Most notably, I-90 expansion and the proposed north-south freeway will both remove existing housing and businesses, in significant numbers, from the neighborhood. As such, it is inappropriate for the County to propose to use the largest available parcel in that neighborhood for wastewater treatment – a use that will bring no jobs or commercial opportunities to the neighborhood. The reality is that the benefits of the wastewater treatment plant will accrue to many, while the burden will fall on East Central. It is no small irony that the City of Spokane's need to treat storm water running off the higher-income South Hill neighborhoods is driving your site selection process.

Economic impacts are appropriate for consideration under SEPA, especially when considered in balance with environmental impacts. As the Washington Supreme Court said in 2000: "SEPA does not require that those evaluating a proposed action consider environmental factors *alone*. Rather, the essential factors balanced frequently are the substantiality and likelihood of environmental cost *and* economic cost." Kucera v. Dep't of Transportation, 140 Wn.2d 200, 224 (2000).

Here, the continued targeting of the East Central Neighborhood for public works projects will lower property values and potentially adversely affect the quality of the human environment and human welfare. Spokane County must consider these potential impacts, including conducting a cumulative impacts analysis that examines what will happen if and when these various projects come to fruition.

Thank you again for the opportunity to comment. The Sierra Club and the Center for Justice look forward to a comprehensive, objective and realistic assessment of the environmental impacts associated with treatment plant siting.

Sincerely,

Bonne W. Beavers
Attorney at Law
On Behalf of Sierra Club, Upper Columbia River Group, and
Center for Justice

2.3 Spokane County Onsite Sewage Disposal Systems Phosphorus Loading Estimate (Final, 6-27-07)

This document may be accessed on-line at:
http://www.spokanecounty.org/utilities/rptdoc/2008jan/04-B%20Septic_Phosphorus_Study-FINAL.pdf

Spokane County
ONSITE SEWAGE DISPOSAL SYSTEMS PHOSPHORUS LOADING ESTIMATE
Technical Memorandum

Prepared for:
Spokane County
Division of Utilities
1026 West Broadway Avenue
Spokane, WA 99260

Final
June 27, 2007

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2.4 Sierra Club comments on Spokane County WWTP Facilities Plan (2-7-07)

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February 7, 2007

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Re: Comments on Spokane County 2006 Wastewater Facilities Plan Amendment

Dear Mr. Rawls,

Thank you for the opportunity to comment on the Spokane County's 2006 Wastewater Facilities Plan Amendment posted on Spokane County's website for public review. The following comments are submitted on behalf of the Upper Columbia River Group of the Sierra Club.

BACKGROUND

Spokane County plans to build a new wastewater treatment plant which would discharge effluent to the Spokane River. The Spokane River is § 303(d) listed for several parameters, including PCBs and dissolved oxygen. This § 303(d) listing under the Clean Water Act (CWA) means that the current wastewater technologies and other pollution control activities are insufficient to protect the health of the river and that more stringent measures must be applied. *See* 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7

Because of this listing, the Washington State Department of Ecology issued a draft TMDL or water quality clean-up plan for dissolved oxygen in October 2004. According to the technical analysis supporting the TMDL, effluent concentrations for total phosphorus from each point source cannot exceed 10 ug/l without causing or contributing to water quality violations. Under the law, existing dischargers to the river, who already have NPDES permits, will get a compliance schedule to meet these stringent limits. As a new discharger, however, the County cannot get an NPDES permit to discharge into the river unless it can show that its discharge, upon commencement, meets the TMDL's criteria of 10 ug/l.

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An NPDES permit is required for all discharges of pollutants. 33 U.S.C. § 1342(a). Ecology issues these permits, but EPA has the final approval. 33 U.S.C. § 1342(a)(5)(b). New discharges into critically impaired waterways are prohibited unless the State has performed a load allocation for each pollutant to be discharged, there are sufficient remaining pollutant load allocations to allow discharge, and the existing dischargers into that segment are subject to compliance schedules designed to bring the plant into compliance with applicable water quality standards. 40 C.F.R. § 122.4.

Ecology has stated that the County's plant may be able to get a permit if the effluent from its new plant meets the TMDL limit of 10 ug/l through a combination of technological end-of-the-pipe reductions and offsets from other phosphorus reduction strategies, such as water reclamation and reuse or septic tank elimination. In order to qualify for an offset, the County would have to demonstrate that it had already removed the necessary amount of phosphorus from the river prior to commencement of discharge such that its effluent would not increase loading. WAC 173-201A-450. This may be difficult to do. Thus, it is clearly in the County's best interest to choose a technology that reduces phosphorus to the lowest level possible in a cost effective manner.

In 2003, the County submitted its 2002 Wastewater Facilities Plan and 2003 Wastewater Facilities Plan Amendment to Ecology for approval. The facilities plan called for discharging effluent into the Spokane River during the critical summer months at 100 ug/l, well above the TMDL limit. *See* 2003 Amendment Ch. 2, Table 2-1. Not only was discharge intended to a § 303(d) listed waterway, the discharge was not in conformity with the draft TMDL, and there were no sufficient remaining pollutant load allocations for a new plant, all in violation of the law.

Nevertheless, Ecology initially approved the County facilities plan in February of 2003. *See* 2006 Amendment Ch. 1.1.4. However, Ecology revoked that approval six months later. In its August 2, 2004 letter, Ecology wrote:

> Ecology and the U.S. Environmental Protection Agency (EPA) have determined that we will not be able to issue an NPDES permit for a new wastewater treatment facility based on the facility plan as approved by Ecology on February 28, 2003. In addition, an SRF loan cannot be awarded to the county with the scope of work discussed in the facility plant at this time, based on the scientific and technical information that is currently available regarding the dissolved-oxygen TMDL.[1]

[1] This letter is included as Exhibit 1 to this letter. The facility plan states only that Ecology approved the 2003 facility plan and omits the fact that Ecology withdrew its approval in August 2004. (2006 Amendment Ch.1.1.4 p. 1-3). This is misleading and should be corrected. Moreover, its omission is a violation of SEPA which requires that the County consult with Ecology and EPA regarding the impacts of the plant and ensure that these agencies' comments, statements or views accompany the proposal through the SEPA process. RCW 43.21C.030(d).

Ecology then extended an $8.5 million loan to the County to upgrade the facilities plan in conformity with the TMDL. Now, two and a half years later, the County tendered the most recent iteration of its plan, the 2006 Amendment which is under review. Unfortunately, our review indicates that this amendment once again fails to comport with the requirements of the TMDL and other state and federal laws, for the reasons stated in the following comments.

COMMENTS

1. The 2006 Amendment Fails To Provide Assurances That The County's Discharge Will Achieve Compliance With The TMDL's 10 Ug/L Phosphorus Limits.

Two years after the revocation of approval for the County plant, Ecology issued a document entitled the 2006 Foundational Concepts for the Spokane River TMDL Managed Implementation Plan. This document resulted from over a year of negotiations through the TMDL Collaboration between Ecology, the Spokane River dischargers, and interested stakeholders concerning the DO TMDL and lays out possible permitting requirements for the County.[2] In order to receive an NPDES permit for discharge into the Spokane River under this document, the County must submit an engineering report for the plant showing: (1) how the most effective feasible, phosphorus technology was selected and (2) that this technology, in combination with developed offsets, will achieve compliance with the 10 ug/l phosphorus limit.

The County's plant is designed for 8 mgd annual average flow and the chosen technology, Membrane Bioreactor (MBR) with biological nutrient removal and chemical polishing, is expected to achieve at least 50 ug/l. As calculated by the County, "effluent phosphorus of 50 ug/l for 8 mgd annual average flow is 3.34 lb/day. Effluent phosphorus of 50 ug/l for 8 mgd annual average flow is 0.67 lbs/day. The difference of at least 2.67 lbs/day phosphorus is the target 'delta' elimination for Spokane County." *See* 2006 Amendment at Ch.11.1.

Because the river is over-assimilated for phosphorus, any County discharge to the river must meet concentrations of 10 ug/l upon commencement of discharge unless the County has created "room" in the river for new loading. The only way to do that, according to the Foundational Concepts document, is to reduce current loading by the difference between the County's discharge concentration and the TMDL limit.[3] Thus, if the County's technology only reduces effluent

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[2] The Sierra Club was an active participant in the TMDL Collaboration but, in the end, was unable to endorse the Foundational Concepts. The Sierra Club's letter on the Foundational Concepts is included as Exhibit 2.

[3] Because the river is currently over-assimilated for phosphorus, it would seem the only way to avoid causing or contributing to violations would be to ensure that any new loading is below 10 ug/l, or background, including that from septics.

concentrations to 50 ug/l, the County must show that it has reduced phosphorus loading to 10 ug/l through other phosphorus reducing strategies, or offsets.

WAC 173-201A-450 regulates offsets and provides:

> (1) A water quality offset occurs where a project proponent implements or finances the implementation of controls for point or nonpoint sources to reduce the levels of pollution for the purpose of creating sufficient assimilative capacity to allow new or expanded discharges. The purpose of water quality offsets is to sufficiently reduce the pollution levels of a water body so that a proponent's actions do not cause or contribute to a violation of the requirements of this chapter and so that they result in a net environmental benefit. Water quality offsets may be used to assist an entity in meeting load allocations targeted under a pollution reduction analysis (such as a total maximum daily load) as established by the department. Water quality offsets may be used to reduce the water quality effect of a discharge to levels that are unmeasurable and in compliance with the water quality antidegradation Tier II analysis (WAC 173-201A-320).
>
> (2) Water quality offsets may be allowed by the department when all of the following conditions are met:
>
> (a) Water quality offsets must target specific water quality parameters.
>
> (b) The improvements in water quality associated with creating water quality offsets for any proposed new or expanded actions must be demonstrated to have occurred in advance of the proposed action.
>
> (c) The technical basis and methodology for the water quality offsets is documented through a technical analysis of pollutant loading, and that analysis is made available for review by the department. The methodology must incorporate the uncertainties associated with any proposed point or nonpoint source controls as well as variability in effluent quality for sources, and must demonstrate that an appropriate margin of safety is included. The approach must clearly account for the attenuation of the benefits of pollution controls as the water moves to the location where the offset is needed.
>
> (d) Point or nonpoint source pollution controls must be secured using binding legal instruments between any involved parties for the life of the project that is being offset. The proponent remains solely responsible for ensuring the success of offsetting activities for both compliance and enforcement purposes.

(e) Only the proportion of the pollution controls which occurs beyond existing requirements for those sources can be included in the offset allowance.

(f) Water quality offsets must meet antidegradation requirements in WAC 173-201A-300 through 173-201A-330 and federal antibacksliding requirements in CFR 122.44(l).

Any offsets claimed by the County to meet its "delta" must meet the criteria for offsets described above. As described in the 2006 Amendment, the County plans to achieve offsets through a combination of actions including water conservation, reclaimed water and reuse, source control programs, regional phosphorus reduction programs and septic tank elimination.

The only delta elimination action for which the County provided technological and loading analyses, however, was the pre-existing septic elimination program. The 2006 Amendment does provide general descriptions of actions the County might take in the future, but the County did not include technical loading analyses or detailed plans for these actions. Hence these options do not meet the regulatory criteria for offsets and Ecology may not rely on them in determining whether this facility plan meets the TMDL requirements.

The County did tender a technical memorandum on loading from septic systems. *See* 2006 Amendment, Appendix B, Spokane County Onsite Sewage Disposal Systems Phosphorus Loading Estimate Technical Memorandum (HDR Report). Unfortunately, this memorandum is not scientifically defensible and likewise fails to meet the criteria of WAC 173-201A-450.

Prior to the finalization of the Foundation Concepts document, Sierra Club provided Ecology with a review of the County's initial Phosphorus Loading Estimate Technical Document conducted by Gary Andres, a hydrogeologist with expertise in the Spokane Valley –Rathdrum Prairie Aquifer.[4] A copy of this assessment is included as Exhibit 3. That initial estimate warned that the proposal to provide phosphorus offsets through the septic elimination program was not scientifically defensible and failed to meet the vigorous standards of Ecology's offset regulation (WAC 173-201A-450). Mr. Andres has provided an additional review of the latest version of the Spokane County Onsite Sewage Disposal Systems Phosphorus Loading Estimate Technical Memorandum, included as Exhibit 3.1. This assessment concludes that little additional information has been provided to demonstrate that the offset proposal is either scientifically or legally defensible.

[4] Mr. Andres' resume is included as Exhibit 4.

Specifically, this assessment finds that the HDR report fails to include a sensitivity analysis, adequately address seasonal variations, verify conclusions with field data, or adequately consider a soil/aquifer retention factor. *See generally* Exhibit 3.1. In considering whether the HDR satisfies the requirements of Ecology's offset regulation, the assessment concludes:

> The study does not quantify uncertainty in both P loading and migration to the river, address variability in the effluent quality, provide an appropriate margin of safety (no sensitivity analysis), or account for attenuation as P migrates in the SVRP.

These shortcomings clearly indicate that an inadequate strategy for delta elimination has been developed. The County must demonstrate that it will meet the 10 ug/l limit through a combination of technology and delta elimination. Without additional offsets or more robust analysis to support the proposed septic offset, it appears the County has failed to meet this requirement.

The proposal to offset phosphorus discharges from the new plant is also problematic from legal and policy perspectives. WAC 173-201A-450(2)(e) requires that pollution offsets may be utilized only to the extent the offset allocation derives from new (i.e. not pre-existing) requirements. The Septic Tank Elimination Program, which the County proposes to use as an offset for phosphorus loading to the River, is a longstanding obligation of the County and does not qualify as pollution offset.

The STEP program commenced in 1985 when County voters approved a resolution to create an Aquifer Protection Area and to allow the County to impose a $15 fee on property tax statements. A primary purpose of the fee was (and is) to construct sewer mains to eliminate septic systems and connect households to the City's sewage plant. The County has collected and spent tens of millions of property taxpayer dollars from this fund. In addition the County has received substantial funding from the State's Centennial Clean Water Fund, again on the order of tens of millions of dollars.

The obligation to utilize these funds to eliminate on-site sewage systems derives both from the County's own program as well as contracts with the State of Washington. This obligation pre-dates the TMDL and the discharge permit the County now wishes to obtain to allow discharge to the Spokane River. Removal of septic tanks from the Spokane Aquifer will not create a phosphorus "credit" over and above what will occur regardless of the new treatment plant.

The proposal to use septic elimination as an offset is a bad idea from a policy standpoint. Rewarding the County with a pollution offset credit for the septic elimination program creates an incentive for the County to promote the use of on-site septic systems for new home construction. Indeed, this is exactly what has

occurred since the County conceived the idea of using STEP as an offset. In 2005, the County loosened the requirements for connecting to sewer mains. There has also been significant growth in septic systems in the last several years in Spokane County. There has been little effort by the County to limit or control growth in a manner that would reduce demand for septic permits.

In sum, the proposal to trade septic elimination for a phosphorus effluent load in the Spokane River is supported neither in science nor law. The County facilities plan should be revised to propose and assess credible, valid offsets rather than rely on a program that does not pass legal muster and prevent the County from obtaining necessary permits to construct a new treatment plant.

2. The County Failed To Adequately Study And Assess All Reasonable Treatment Alternatives To Phosphorus Removing Wastewater Technology And, In So Doing, Failed To Provide A Comprehensive Technology Selection Protocol For Choosing The Most Effective Feasible Technology For Seasonally Removing Phosphorus From Its Effluent.

The Foundational Concepts document requires the County's facilities plan to provide a comprehensive technology selection protocol for choosing the most effective feasible technology for seasonally removing phosphorus from its effluent. This requirement mirrors the State Environmental Protection Act which requires facilities plans such as this to study, develop, and describe appropriate alternatives to the proposed action. RCW 43.21C.030.

The 2006 Wastewater Facilities Plan Amendment is the fourth iteration of the County's plan. The County previously tendered a 2002 plan followed by 2003 and 2004 amendments.[5] The 2006 Amendment presents its treatment technology alternatives analysis in Chapters 3 and 6. The amendment considers only four treatment technologies, but relies in part on the previous alternatives evaluation from the 2003 Amendment. Amendment 2006 Ch. 3.1 at. 3-1 ("Much of the past facilities planning alternatives analysis and previous conclusions remain valid and are components of Spokane County's wastewater management program.")

This is problematic. In 2003, the County was seeking a technology to meet "anticipated" seasonal limits for total phosphorus of .5 mg/l or 500 ug/l. *See* 2003 Amendment Ch. 4., Table 4.2 at 4-4. Its preferred alternative, MBR, was expected to achieve only 100 ug/l. For this analysis, the County's effluent with offsets must meet 10 ug/l upon commencement of discharge. Instead of revamping the 2003 technology selection protocol to reflect the new limits, and reviewing the many plants nationwide using different technologies to achieve low

[5] The 2004 Amendment was apparently withdrawn as it is no longer available on the Spokane County Utilities . *See* Regional Water Reclamation Facility website.

phosphorus levels, the County simply took the alternative chosen in 2003, AWT Alternative 1 (formerly Alternative S7), and compared it to three alternatives: two MBRs and one conventional activated sludge system with tertiary membrane. *See* 2006 Amendment Ch. 6.3.2 at 6-5,6.[6] No explanation is given as to why these four alternatives were the only ones chosen for consideration.

The 2003 alternatives selection protocol is of no assistance either. There, the County eliminated technologies from consideration because they relied on chemical addition for phosphorus removal. *See* 2003 Amendment Ch. 4.5.1 at 4-7. Yet, confusingly, the 2003 finalists were chosen precisely because "they would use chemical phosphorus removal." *See* 2003 Amendment Ch. 4.7.2 at 4-34. Similarly, all four 2006 alternatives utilize chemical addition.

The 2006 Amendment selected a technology that is expected to meet concentration limits of 50 ug/l and lists no plants where the proposed technologies are currently being used with data to support their efficacy. Instead, it merely states that "effluent quality assumptions are based on experience from other facilities with similar process designs." *See* 2006 Amendment, Ch. 6.3.2 at 6-5.

Yet, there are a number of facilities throughout the nation achieving low phosphorus. Indeed, EPA Region 10 will soon publish an inventory of exemplary wastewater treatment plants achieving low phosphorus concentrations, some of which have been achieving from 10 to 20 ug/l for years, all without such stringent permit limits as required here, and none of which are MBR. Instead, these facilities largely use BNR, chemical addition, and various forms of filtration. The following is a list of a few plants achieving exemplary phosphorus removal, none of which were reviewed or even mentioned by the County.

- Breckenridge S.D., Farmer's Korner WWTP, CO
  Capacity – 3 mgd
  Type of treatment – BNR, chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 7 ug/l
  Range of monthly ave. phos. concentrations – 2 to 3 ug/l

- Summit County Snake River WWTP, CO
  Capacity – 2.6 mgd
  Type of treatment – BNR, chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 10 ug/l
  Range of monthly ave. phos. concentrations – 10 to 40 ug/l

[6] The schematic of the 2003 preferred alternative presented in the 2006 Amendment, Ch. 6.3.2, Fig. 6-1 at 6-5, does not match that in the 2003 Amendment, Ch. 4.6.4, Fig. 4-6 at 4-20. The 2003 schematic included UV disinfection rather than chlorination and no membrane modules separate from the activated sludge, N/DN stage.

- Pinery WWRF Parker, CO
  Capacity – 2 mgd
  Type of treatment – BNR, chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 29 ug/l
  Range of monthly ave. phos. concentrations – 21 to 74 ug/l

- Clean Water Services, Rock Creek WWTP, OR
  Capacity – 39 mgd
  Type of treatment – Chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 70 ug/l
  Range of monthly ave. phos. concentrations – 40 to 90 ug/l

- Stamford WWTP, Stamford, NY
  Capacity – 0.5 mgd
  Type of treatment –Chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 11 ug/l
  Range of monthly ave. phos. concentrations – 5 to 60 ug/l

- Walton WWTP, Walton, NY
  Capacity – 1.55 mgd
  Type of treatment – Chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 10 ug/l
  Range of monthly ave. phos. concentrations – 5 to 60 ug/l

- Milford WWTP, Milford, MA
  Capacity – 4.8 mgd
  Type of treatment – Multi-point chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 70 ug/l
  Range of monthly ave. phos. concentrations – 40 to 160 ug/l

- Alexandria Sanitation Authority, Alexandria, VA
  Capacity – 54 mgd
  Type of treatment – BNR, multi-point chemical addition, filtration
  Ave. Effluent Phosphorus Concentration – 60 ug/l
  Range of monthly ave. phos. concentrations – 40 to 100 ug/l

- Upper Occoquan Sewerage Authority WWTP, VA
  Capacity – 42 mgd
  Type of treatment – Chemical and tertiary filtration
  Ave. Effluent Phosphorus Concentration – 80 ug/l
  Range of monthly ave. phos. concentrations –23 to 282 ug/l

- Fairfax County, Noman Cole WWTP, VA
  Capacity – 67 mgd
  Type of treatment – Chemical addition, filtration

Ave. Effluent Phosphorus Concentration – 60 ug/l
Range of monthly ave. phos. concentrations – 20 to 130 ug/l

Although most of the above were not reaching the concentrations required here, it is important to note that they were not required to do so. With permits ranging from 50 ug/l to 180 ug/l, these plants had no incentive to spend the time and resources to reach lower phosphorus levels.

It is possible that a full scale MBR plant with chemical addition may succeed in reducing phosphorus to very low levels. The Arapahoe County Water and Wastewater Authority in the Denver metropolitan area operates a 2.4 mgd MBR facility with chemical addition and treats wastewater to below 50 ug/l.[7] However, the County has failed to provide evidence that its chosen technology will do so to full scale.

In 2005, the City of Spokane conducted pilot testing of three technologies which claim to reduce phosphorus concentrations to low levels. These were Parkson's D2, dual sand filtration, US Filter's Trident HS-1, and Zenon's Zeeweed 500, an ultrafiltration membrane system. According to the City, all achieved target concentrations of under 50 ug/l with a majority of samples under 20 ug/l. Pilot testing has also been ongoing at the Hayden WWTP with BlueWater's BluePro Treatment, a dual sand filtration system. BlueWater reports results as low as 10 ug/l.

Interestingly, in recognition of the capabilities of BNR with chemical addition, the 2006 Alternative 3 includes these treatment methods in its design. *See* Amendment 2006 Ch. 6.3.6 at 6-10. Although the County rejected this alternative, it admits that various tertiary technologies such as Bluewater, Parkson, the Trident or other microfiltration "may be investigated in demonstration testing at the new plant." *Id.* at 6-11. The advantage the County has over existing dischargers is that it can build its plant to meet the requirements of the CWA now. It does not have the challenge of modifying outdated technologies. Any pilot testing should be done by the County prior to tendering its final design to Ecology.

The estimated costs of this plant are too high for the County to proceed without having conducted the requisite alternatives study, including cost comparison. *See* 2006 Amendment, Ch. 9.7.1 at 9-12. According to the MBR-Network, energy costs for MBR plants are generally 30% to 50% higher, the membranes themselves (the most expensive unit cost in the 2006 Amendment - here over $17 million) need to be replaced on a regular basis, and O&M costs are significantly higher due to the complexity of the technology and the potential for membrane fouling which necessities more than routine maintenance.[8]

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[7] Lorenz, Wayne, P.E., Phosphorus Removal in a Membrane Reactor System: A Full-Scale Wastewater Demonstration Study (2002).
[8] See http://www.mbr-network.eu/mbr-projects/index.php

It may well be that MBR technology provides other benefits justifying its additional substantial costs. Or that these costs will decrease as the market grows. If so, the County should provide a clear analysis of the economic issues, not only because it is required to do so, but for the sake of transparency. County residents will be paying for this plant for years. Public decision makers need to understand the long-term commitment they are making on behalf of the public.

Without revising its initial selection criteria and reviewing current technologies and plants achieving low phosphorus levels, the County not only violated RCW 43.21C.030, but also failed to satisfy Ecology's technology selection protocol requirement as set forth in the Foundational Concepts document.

3. <u>The Facility Plan Fails To Provide Adequate Alternatives To River Discharge Should Ecology Not Approve Its Delta Elimination Plan.</u>

As explained above, the 2006 Amendment did not provide detailed loading analyses and plans for phosphorus reductions through water reclamation and reuse, conservation, or any other strategy but septic elimination. However, in recognition that Ecology might not approve its delta elimination plan, the County proffered the following back-up: "Spokane County may need to maximize flow to the RPWRF if 'delta' elimination actions are not approved and Spokane County cannot meet the target wasteload allocations in the *Foundational Concepts*." *See* 2006 Amendment Ch. 11.2.2 at 11-4. In essence, the County proposes to send all but 1.6 mgd of its new 8 mgd capacity to the City and to treat the 1.6 mgd to 50 ug/l. That means the City would receive an additional 6.4 mgd. This back-up plan is not an acceptable solution for several reasons.

First, if the County discharges even 1.6 mgd at 50 ug/l without a corresponding offset, it will cause or contribute to water quality violations. Such a discharge is prohibited.

Second, the County estimates that by 2011, its total average sanitary flow will be over 8.8 mgd. Amendment 2006 Ch. 2 Table 2-2, at *20-12*. The plant design is for 8.0 mgd. Its current flow to the City is 6.6 mgd. Because there is no assimilative capacity in the river, there can be no additional loading or higher concentrations, whether by the City or County. *See* Water Quality Program Permit Writer's Manual at VI-36. The additional 6.4 mgd would constitute new loading to the City plant. Consequently, although a compliance schedule will apply to the City's existing loads, any increase in loading by the City, whether by the County or City, must meet final permit limits. If the County plans to increase its loading to the City plant, the City and County will need to determine which entity is responsible for offsets for that portion of the increase and then provide such offsets prior to increased loading. There is no indication that the City is willing or able to do this.

Third, if the County sends an additional 6.4 mgd to the City, it will exceed its current 10 mgd capacity at the plant, leaving no room for peak flows from the County plant. Moreover, the County estimates that by the time the new plant is online, the combined flow to the City will be an average flow of 10 mgd, with peak flows of 22.1. *See* 2006 Amendment Ch. 9.3.1 Fig. 9-1 at 9-4. There is no assurance that the City will sign an interlocal agreement with the County to increase the County's flow to the plant or that it would have the capacity to do so given its own projected growth.

Because the 2006 Amendment, as drafted, lacks assurance that its effluent will meet the requisite water quality standards, it will not qualify for an NPDES permit.

4. Without An NPDES Permit, The Plant Cannot Obtain a 401 Certification, Section 404 Permit For The Outfall, or SRF Funding.

"Implementation of the project will require a number of permits and approvals from federal, state and local agencies." *See* 2006 Amendment, Ch. 10.7 at 10-5. These include an NPDES permit, a § 404 permit from the Corps for the outfall to the river, and a state § 401 certification of the Corps permit by Ecology.

a. Section 404 and 401 issues

The County's plan relies on discharge to the Spokane River through an outfall. *See* 2006 Amendment Ch. 3.6 at 3.6. In order to construct an outfall, the County must first obtain a § 404 permit from the Corps of Engineers, which in turn must receive a § 401 certification from Ecology. 33 U.S.C. § 1341; Ch. 173-225 WAC. The purpose of a § 401 certification is to ensure that a project requiring a federal permit is in full compliance with the salient provisions of the CWA and state law. A § 401 certification may not be issued if the proposed activity does not have the appropriate NPDES permit or will cause or contribute to violations of state water quality standards.

Without an offset plan that demonstrates reasonable assurance that the plant will meet the TMDL requirements, and without adequate peak flow planning,[9] the County's facility plan does not provide sufficient assurances that it can meet the requirements of the TMDL or will not cause or contribute to water quality violations in contravention of the CWA. Thus, the County may not receive an NPDES permit, without which it cannot receive the § 404 permit or the § 401 certification.

[9] See infra pp. 23-24.

b. SRF Funding

Without these permits, the project is not eligible for an SRF loan, one of the primary funding mechanisms identified in the plan. "Spokane County and the Department of Ecology have developed an agreement for funding the recommended program that includes a loan from the State Revolving Fund (SRF) Loan Program. Under this program, Ecology provides up to 20-year loans to municipal agencies for water quality projects at interest rates that are generally lower than prevailing interest rates on municipal bonds." *See* 2006 Amendment Ch. 10.4.1 at10-2.

Revised Code of Washington 90.50A.020 establishes the state water pollution control revolving fund which is a federally financed program. Under the federal regulations governing Clean Water Act grants and loans to states, *facility planning must be based on load allocations,* the applicant must comply with the requirements of all applicable environmental laws, regulations and executive orders, and EPA retains final approval authority. 40 C.F.R. § 35.917 (emphasis added). In addition, facility plans must include an evaluation of the capability of each alternative to meet applicable effluent limitations, an identification of NPDES effluent discharge limits, and discussions as to how the proposed project will result in compliance with these requirements. 40 C.F.R. § 35.917-1. Facilities plans submitted for approval must also include all necessary resolutions and interlocal agreements or assurances that these will be executed. 40 C.F.R. § 35.917-6. If the Regional Administrator determines that substantial changes have occurred in a facilities plan which warrant revision or amendment subsequent to submission, the plan shall be revised or amended and resubmitted for review. 40 C.F.R. § 35.917-9.

Chapter 173-98 WAC provides the regulations governing eligibility for state revolving loans. This chapter requires Ecology to approve the facilities plan, including site-specific planning documents, before an application for funding can be considered. WAC 173-98-060. Facilities plans approved by Ecology more than two years prior must contain evidence of recent department review to ensure the documents reflect current conditions. In addition, all recipients must comply with all applicable federal, state and local laws, orders, regulations and permits; applications must not be inconsistent with pertinent adopted water quality plans including, but not limited to, plans under sections 208, 303(e), 319 and 320 of the CWA, and, most importantly, facility plans must provide assurances that the necessary permits required by the authorities having jurisdiction over the project have been secured.

In its letter of August 2, 2004 revoking its initial approval of the County's wastewater facilities plan, Ecology offered the County a $73,400,000 SRF loan with $8.5 million for "updating the Wastewater Treatment Facility Plan to reflect requirements of the Spokane River total maximum daily load (TMDL) and subsequently to design and construct the new Spokane County regional

wastewater-treatment plant per the approved and updated facility plan. The term of the loan is 20 years, with a 1.5 interest rate…." This offer came with a caveat: "We believe it is prudent to complete the TMDL and amend the facilities plan before proceeding with the design and construction of a new regional wastewater treatment facility." *See* Exhibit 1.

This loan is in jeopardy unless the County's new facilities plan is consistent with the waste load allocations in the TMDL.[10] SRF funding proceeds through a step process- first, site-specific facilities plans, second, design, and then construction. WAC 173-98-060. Thus, merely because the County received funds for its design does not automatically guarantee funding for the subsequent steps. Clearly, Ecology and EPA intended for the County to update its plan consistent with federal and state law as a condition precedent to funding in excess of $8.5 million. Indeed, to do otherwise would violate state and federal law.

The County had over two years and $8.5 million to revise its facilities plan by either studying and choosing a technology that could treat to10 ug/l, or developing detailed, scientifically defensible offset alternatives, including a feasible water reclamation and reuse plan, stringent pretreatment and other phosphorus limits and conservation ordinances. Instead, the County resubmits previous water reclamation and reuse, conservation and other phosphorus removal strategies recycled from its prior facilities plans. The County defers detailed planning and loading analyses to the future. *See* Amendment 2006 Ch. 11.2.3 at 11-4 ("In 2007, Spokane County will initiate development of a detailed Water Reclamation and Reuse Plan which will describe opportunities for reuse of reclaimed water and the associated phosphorus load reduction resulting from reuse. This to-be-determined load reduction will contribute to Spokane County's overall 'delta' elimination").

As to water conservation, implementation is largely left to the "discretion of the individual water purveyor." *See* 2006 Amendment, Ch. 4.3 at 4-5)("Adoption of a conservation plan is left to the discretion of the individual water purveyor"). Yet, the County admits that current groundwater pumping is approaching the natural supply of the aquifer and "may actually exceed the aquifer's ability to meet demand" and that "no 'new' water may be available for consumptive use at some point in the future." *Id.* at 2-18.

Given the urgent need to accommodate new growth in the region, the County's failure to move forward over the past two and a half years with reuse and conservation plans is inexcusable and can only cause further delay, delay that may necessitate a moratorium on growth, something that few desire. Yet, from this plan, it would appear the County views delay as an opportunity to continue permitting yet more septic systems with

[10] It is unclear whether or not the County utilized the entire $8.5 million to revamp its facilities plan as the only salient changes appear to be the septic tank elimination technical memorandum and some additions to the MBR design including BNR and chemical additions. As noted, there were no in-depth analyses of other site-specific alternatives to discharge out of the river.

corresponding offset potential. *See* 2006 Amendment, Ch. 2.4.3 at. 2-11 (County estimates that approximately 800 septic systems will connect to the sanitary sewer per year from 2005 to 2011 and 916 per year from 2011 to 2015). This is unacceptable. The County should not be rewarded for its refusal to move forward expeditiously, especially where it had the opportunity and funding to do so.

The County should have used the intervening years to develop these alternatives to the level of specificity required by the regulations. Likewise, it should have conducted its septic elimination technical memorandum in time for peer review and further study as necessary. As such, the County has failed to provide reasonable assurance that it can meet effluent limitations through a combination of end-of-pipe reductions and other phosphorus reducing strategies.

c. Interlocal agreements

This plan does not include necessary interlocal agreements or provide assurances that these will be signed as required for SRF funding.

Although the County Commissioners have signed a resolution authorizing the County to execute a memorandum of agreement with the Department of Ecology, the City of Spokane, the City of Spokane Valley, and Liberty Lake Sewer and Water District formalizing the "Foundational Concepts for the Spokane River TMDL Managed Implementation Plan," the parties have not yet executed this agreement. *See* Spokane County Resolution No. 6 0789 (September 19, 2006). Without a formal agreement with Ecology and the other dischargers, the County's wasteload allocation is in doubt.

Second, as of this date, there is no interlocal agreement between the City of Spokane Valley and the County concerning wastewater management within Spokane Valley's city limits. The facilities plan states only that the City of Spokane Valley has "indicated a preference" to have Spokane County provide wastewater management for the sewer service area within its city limits. *See* Amendment 2006, Chapter 1.1.5 at 1-4. Yet, there is no indication that an interlocal agreement is in the works or has been signed. An "indicated preference" is a far cry from assurance of a legally binding agreement.

Third, the plan does not provide assurances that an interlocal agreement has been signed with the City to provide capacity for the plant's peak flows. The County's plan does not call for redundant membranes for peak flow conditions. Instead, "the peak flow could be managed by offloading flow to the [City's] plant....The interlocal agreement with the City should be reviewed to confirm hydraulic capacity owned by the County in the City sewer system. Initial information indicates that the County owns 15.5 mgd of capacity (peak flow basis) in the City interceptor downstream from the SVI connection, and that there is no current restriction on the ratio of peak flow to average flow." 2006 Amendment, Ch. 2.4.4 at 2-13.

The City and County executed a Wastewater Management Agreement in December 1980, and four subsequent amendments thereto, in which the City agreed to reserve and the County agreed to purchase up to ten million gallons per day capacity in the regional wastewater treatment plant and interceptor system for the purpose of providing the County's wastewater treatment needs. *See* June 5, 2000 Facilitator Interlocal Agreement, available at http://spokanecounty.org/commpub/ImageCntrl.aspx. A review of these agreements indicates that there was never an agreement to provide treatment beyond 10 mgd.[11] *See* Exhibit 5.

If the County's assumption is incorrect, ***this is a fatal flaw in the design plan and raises alarming questions as to whether the plant can meet redundancy and reliability requirements.*** According to Washington State's criteria for sewage works design, unit operations in the main wastewater treatment system must be designed so that, with the largest flow capacity out of service, the hydraulic capacity of the remaining units is sufficient to handle the peak wastewater flow.[12]

As designed, the new County plant cannot handle peak flows, even with all units functional. Without adequate peaking capacity, the County's plant is unable to provide assurance that it can meet water quality standards and without an interlocal agreement providing the same, the County does not qualify for an SRF.[13]

5. Because There Are No Assurances That This Plant Can Meet Water Quality Standards At Start-Up, There Are No Assurances That It Will Not Violate Downstream Standards.

Under the CWA, tribes have the authority to establish NPDES programs in conjunction with EPA. EPA has the authority and obligation to require that upstream NPDES dischargers comply with downstream tribal standards. See 33 U.S.C. §§1311, 1341, 1342, 1377. *See also City of Albuquerque v. Browner*, 97 F.3rd 415 (10th Cir.). The Spokane Tribe's water quality standards for dissolved oxygen are currently violated at the boundary line. No NPDES permit may issue to a new upstream discharger that will cause or contribute to these violations.

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[11] The 2002 Amendment appears to contradict the 2006 Amendment. " Initial information indicates that the County owns 15.5 mgd of capacity (peak flow basis) in the City interceptor downstream from the SVI connection, and that there is no current restriction on the ratio of peak flow to average flow." By contrast, the 2006 Amendment reads, "Through an interlocal agreement, Spokane County purchased capacity in the City's collection system to convey 10 mgd of County wastewater to the SAWTP. If the County needs to send wastewater flows in excess of its current capacity allowance, improvements to the City's collection system will be needed. However, the nature, cost and implementation of these improvements will be determined in part by the City's ongoing combined sewer overflow (CSP) planning effort." 2002 Amendment Ch. 2.6.1.

[12] *See* http://www.ecy.wa.gov/pubs/9837/t3.pdf.

[13] The 2003 Amendment relied on the State's Criteria for Sewage Design for redundancy and design criteria. *See* 2003 Amendment Ch. 4 Table 4-5 at 4-13. By contrast, this plan appears to ignore these dictates.

6. The 2006 Amendment Fails To Adequately Describe The Environmental Effects Of Its Discharge At Rebecca Street In Violation of RCW 43.21C.030.

By law, the County must include any adverse environmental effects from its proposed course of action and study, develop and describe appropriate alternatives. RCW 43.21C.030. This facilities plan recommends discharging effluent at the Rebecca Street outfall, based on the 2002 Supplemental Environmental Impact Statement. However, the plan fails to adequately analyze the potential environmental risks and alternatives. *See* 2006 Amendment, Ch. 3.6.1, p. 3-7; Ch. 6.6.8 at 6-23.

This outfall is in close proximity to City wells and, as noted in the 2003 Amendment, could potentially contaminate City wells and the Spokane-Rathdrum Aquifer. To mitigate potential contamination, the 2006 Amendment proposes chlorine disinfection rather than UV disinfection as initially proposed. This is problematic for several reasons.

First, siting a wastewater effluent pipe where it could contaminate our sole source aquifer or drinking wells appears unreasonable on its face.

Second, the 2006 amendment fails to provide any analysis as to whether chlorination is adequate mitigation.

Third, the plan does not analyze the environmental effects of residual chlorine in its effluent at that discharge site. In its 2003 Amendment, the County chose ultraviolet disinfection to "avoid issues with chlorine toxicity." *See* 2003 Amendment Ch. 4 at 4-10. This amendment does not address chlorine toxicity.

Fourth, there is no recognition in any of these documents that the outfall is contiguous to Spokane Community College. There is no analysis as to how use of an outfall at this location will impact recreation on and along the river or area commercial and residential uses, especially during low water periods when dilution flows will be diminished. All one has to do is visit the river below the City's plant in the summer to know that similar water quality and odors would be unacceptable in an urban setting. Moreover, the plan calls for a reduction in treatment outside the critical summer months. Unless the County provides assurance that there will be no degradation in aesthetics, both in odor and water quality, at any time of the year, this outfall should not be approved. *See* WAC 173-201A-260(2)(b)(Aesthetic values must not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste).

7. The Facility Plan Also Appears To Violate Regulations Governing Cost Structures For Federal Financial Participation Grants And Loans.

Under both state and federal law, cost-plus-percentage-of-cost and percentage-of-construction-cost contracts are prohibited. *See* 40 C.F.R. § 35.937-6; *see also* WAC 173-98-050(7)(d)(vii) (SRF loans for cost-plus percentage contracts or multiplier contracts prohibited). Here, the Contractor's overhead and profit is fixed at 10% of the unit process costs and engineering, administrative and legal costs are fixed at 25% of the total construction cost. *See* 2006 Amendment Ch. 9 Table 9-1 at 9-12. Without knowing more, these appear to be cost-plus contracts in violation of the above laws.

8. The 2006 Amendment Violates Ch. 173-240 By Failing To Provide Plans And Specifications With Requisite Specificity.

WAC Chapter 173-240 applies to all facility plans and requires that reports must be sufficiently complete so that plans and specifications can be developed from these without substantial changes. Here, by failing to provide sufficient information regarding redundancy and peaking capacity, alternatives to river discharge, and deferring selection of a biosolids management plan to the Design/Build/Operator, the County violated this provision. In addition, the failure to provide reasonable alternatives to these unresolved conflicts violates the Washington State Environmental Protection Act, RCW 43.20C.030(c)(iii)(e).

The cost estimates also omit estimates of the cost of other phosphorus reducing alternatives to septic tank elimination. Given the professional disagreements over loading from septic tanks and potential reductions, it is highly likely that this plant will need to rely on reclamation and reuse in order to comply with the water quality standards. Thus these strategies are integral rather than corollary to the plan. The County should have included cost estimates of these and other effective phosphorus reduction means. Without at least a reuse cost analysis, the estimated costs are necessarily grossly inadequate.

9. The 2006 Amendment Violates RCW 90.48.490 And RCW 43.20C.030 By Failing To Adequately Address Implementation Of Pretreatment Standards.

WAC Chapter 173-240 requires that facility plans meet the requirements of chapters 90.48 and 90.54 RCW pertaining to prevention and control of pollution in state waters. RCW 90.48.490 provides that plans for new sewage treatment facilities shall address implementation of pretreatment standards.

In this facility plan, the County recognizes that pretreatment requirements and internal recycling could reduce phosphorus loading to the County's plant, but fails to detail implementation plans. "As new industries locate in the service area, and as existing industries expand operations, the County should encourage them to aggressively pursue

internal reuse and waste minimization programs." (ES -12). Instead of providing data to support feasible phosphorus reductions from these sources, however, this plan recommends the status quo. "Since a pretreatment program is in place, no revisions are anticipated." Ch. 4.5.1 at 4-16.

Generally speaking, after human wastes, industrial and commercial dischargers contribute the most phosphorus to the influent streams of wastewater treatment plants (WWTP). The contribution of phosphorus from these commercial and industrial sources accounts for approximately 46 percent of the non-ingested phosphorus load discharged into WWTPs. Reducing the commercial and industrial phosphorus contribution to WWTPs by one half would reduce the total non-ingested phosphorus discharged to WWTPs by almost 23 percent. [14] Unfortunately, no similar data exists for Spokane River dischargers.

Numerous commercial, industrial, and institutional businesses utilize phosphorus for such activities as cleaning and sanitizing, metal preparation, finishing and painting, and food processing. Such enterprises include agricultural co-ops, car/truck washing facilities, dairies, food processing plants, meat packing and locker plants, metal finishing facilities, municipal water treatment plants that add phosphorus to drinking water, nursing homes, hospitals, research facilities, restaurants, and schools. Many of these, especially food processing plants, contribute a significant amount of CBOD as well.

Traditionally, industrial/commercial pretreatment programs focused on end-of-pipe solutions to control the discharge of industrial/commercial wastewater phosphorus, thus increasing the cost of wastewater treatment and requiring larger amounts of harsh treatment chemicals. Indeed, there are currently no pretreatment regulations, standards or requirements for phosphorus reductions from such businesses in the region.

Appropriate pretreatment programs designed to reduce phosphorus from these sources can reduce influent loadings of phosphorus and reduce influent water (hydraulic loading) thus avoiding the need to invest in additional sewer and treatment capacity, reducing chemical, energy and sludge management costs, reducing water demand, and increasing the life of existing water supplies.[15] For example, the City of St. Cloud, Minnesota implemented a Phosphorus Management Plan that included strict pretreatment controls, biological treatment, modifications to city and local codes, and education and outreach to commercial businesses and residents. As a result, the City reduced the amount of phosphorus coming into its POTW by 32% and the amount of phosphorus leaving the facility by 48%.[16]

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[14] Minnesota Pollution Control Reports, available at http://www.pca.state.mn.us/publications/reports/pstudy-section4.pdf.

[15] *See* Minnesota Technical Assistance Program, available at http://mntap.umn.edu/POTW/index.htm.

[16] *See* http://mntap.umn.edu/pmp/stcloud.htm.

Appropriately crafted pretreatment regulations can also benefit industry by enhancing environmental performance, reducing water consumption, lowering operating costs, and reducing regulatory burdens. For example, by implementing a phosphorus reduction program in its manufacturing process, Electrolux Home Products, a freezer manufacturer, dropped its phosphorus loading by 90%.[17] Rochester Powder Coating, a job shop that paints sheet metal parts using powder coatings, reduced its phosphorus discharge by 98% over two years by using pollution prevention practices.[18]

The County has a legal duty to protect its plant from discharges of pollutants into the collection system by industrial/commercial users which may interfere with treatment processes, pass through to receiving waters, or contaminate WWTP sludge. The primary regulatory mechanism to control these pollutants is through pretreatment standards and requirements. 33 U.S.C. § 1317; Title 40 Chapter 403 C.F.R; RCW 90.48.260; WAC 173-208-090, 173-216-150. Excise taxes and/or effluent strength charges may also reduce influent pollutants.

Both the City and the County of Spokane have pretreatment programs as conditions of their combined NPDES permit, but neither includes mandatory phosphorus control. In fact, it would appear that the County, through a 1996 interlocal agreement, contracted with the City to administer and implement its plan, as the City has been treating all County effluent.[19] Unless the County can show that none of the influent to its new plant will be from industrial or commercial sources, the County must design, administer and implement its own program and it should do so in a fashion that reduces phosphorus influent to its plant.

As to businesses currently regulated under the County's program, the facilities plan failed to provide up-to-date information. According to the facility plan, ten businesses are currently regulated under its pretreatment program. *See* 2006 Amendment Ch. 4.5.3 Table 4-11 at 4-18. This was compiled from a 2001 list and is inconsistent with the Spokane County Annual Pretreatment Report of 2004 which listed seven businesses - Columbia Lighting, Kemiron, Mica Landfill, Novation, Honeywell Electronic Materials, Galaxy Compound Semiconductors, and Lloyd Industries.[20] The County should have provided current information on its pretreatment program.

In addition, given the need for the County to reduce phosphorus loading to its plant through alternatives other than or in addition to septic tank elimination, and the potential gain from commercial/industrial phosphorus reduction, the County should have done more than simply recycle its plan from the 2002 Amendment. The County should tender an analysis of current and future commercial/industrial loading and formulate a specific

[17] *See* http://mntap.umn.edu/POTW/electrolux.htm.
[18] *See* http://www.p2pays.org/ref/04/03462.htm. For more examples, *see* http://mntap.umn.edu/POTW/industrial.htm
[19] *See* Exhibit 5, Amendment No. 4 to Wastewater Management Agreement Between the City of Spokane and Spokane County (August 6, 1996).
[20] Spokane County Annual Pretreatment Report 2004 at 6 (March 30, 2005).

reduction plan. This plan should identify feasible phosphorus reduction pretreatment strategies sufficient to provide assurances that the plant can meet the requirements of the TMDL.

Such a plan should include adequate funding for the pretreatment program to identify and regulate those non-domestic users who contribute phosphorus loading to the plant and to partner with Ecology to develop a public education program and technical assistance for businesses. It should also commit to enact ordinances amending pretreatment requirements and standards under the County sewer code to require all known, available and reasonable phosphorus removal and other pollution prevention measures by industrial/commercial users. Although the County may decide to create incentive programs to induce adoption of such pollution prevention strategies, it is the Legislature's intent that pretreatment costs be borne by industries. *See* RCW 70.146.010. Hence, the County needs to do more than hope for "voluntary" reduction activities by industries.

10. Other concerns:

- The 2003 Amendment relied on the State's Criteria for Sewage Design for redundancy and design criteria. *See* 2003 Amendment Ch. 4 Table 4-5 at 4-13. By contrast, this plan appears to ignore these dictates, especially as to redundancy and peak loading.

- The 2006 Amendment, Ch. 2.5.5, Table 2-8 at 2-23, states "Compliance with effluent phosphorus limits should be determined on a monthly median basis in recognition of variability in treatment performance when achieving very low effluent phosphorus concentrations."

We disagree and believe that phosphorus effluent limitations in NPDES permits should be determined on an average monthly basis rather than the median. The regulations allow for mass concentration limits on an average or monthly basis, or other appropriate limitation. WAC 173-220-130(3)(b). Given that some type of averaging of effluent concentration is reasonable, the question then becomes the type of averaging and the averaging period that is the most relevant for phosphorus limits. During the TMDL Collaboration Technology Workshop in October 2005, the County and other dischargers suggested that seasonal or 30-day medians were appropriate. The Sierra Club, based on analysis by its expert, Dr. Joel Massman, strongly disagrees.[21] The median effluent concentration is not the correct metric and if averaging is allowed, the mean should be used instead of the median. In addition, the relevant averaging period is probably monthly. According to Dr. Massman:

> The median is the number in the middle of a set of numbers, that is, half the numbers have values that are greater than the median

[21] Dr. Massman's Technical Memorandum and resume are attached as Exhibit 6.

and half have values that are less. This is not a particularly relevant number in terms of the phosphorus load to a river system, as illustrated in the example on Table 1. Table 1 lists two sets of numbers that might represent the effluent concentrations during a 30-day period for two different treatment technologies – "A" and "B." These treatment technologies result in the same median concentration (100ug/l), but have very different mean values and total loads to the system.

Technology "A" has a mean concentration of 100 ug/l and a total load for the month of 1625 pounds of phosphorus, while Technology "B" has a mean concentration of 200 ug/l and a total load of 3350 pounds of phosphorus. These two effluent streams have the same median effluent, 100 ug/l, but they may result in dramatically different impacts in terms of water quality. The median phosphorus effluent, then, is not a relevant number and should not be used to define a treatment standard if the true objective is to control the phosphorus load on the system.

Water quality impacts related to algae in the Spokane River and Long Lake System occur over three general time scales: days, weeks and months. The shortest time scale is the daily fluctuations or "swings" that occur during a 24-hour period due to photosynthesis and respiration. Although the magnitude of the swing is affected to some degree by the rate of algae growth (which is in turn affected by the phosphorus load), this effect is secondary to other effects such as light, temperature, and average algae concentration.

The second time scale relates to the change in the algae concentration or population in the system. This change occurs on the order of weeks. The third time scale relates to the affect of the algae on the sediment oxygen demand. This occurs over time scales on the order of months to years.

In terms of phosphorus loading, the second scale (weeks) is probably most important. If algae concentrations are kept low, then the daily swings will not be important and the sediment oxygen demand will eventually be reduced. If algae concentrations respond to phosphorus load over time periods of approximately a week to a month, then this would be the relevant averaging period. The mean, however, underestimates the loading and should not be used.

Exhibit 6.

- Phosphorus is not the only pollutant driving low dissolved oxygen levels. "Direct loading of BOD from point and nonpoint sources also decreases dissolved oxygen concentrations." Draft DO TMDL, at 10 (October 2004). Thus, reductions in both BOD and nutrients are necessary to mitigate the impacts of these pollutants on dissolved oxygen. *Id.* The 2006 Amendment proposes permit limits with average monthly concentrations of CBOD of 25 mg/l and 40 weekly concentration of 20 mg/l. *See* 2006 Amendment, Ch. 2.5.5, Table 2-8 at 2-23. The City's monthly average permit limit is currently 30 mg/l and, in 2004, its monthly average was only 5.6 mg/l. TMDL at 15. Given that BOD concentrations will necessarily have to come down, these proposed permit limits must be revisited in conformity with TMDL loading requirements and "no backsliding" requirements.

- The 2006 Amendment states that the Spokane River is also critically impaired for persistent bioaccumulative toxins including PCBs, PBDEs, and dioxins and furans. The amendment states that treatment processes such as MBR and membrane filtration "are expected" to increase PCB removal and that chemical addition "will likely increase removal as well." *See* 2006 Amendment, Ch. 2.6.1 at 2-27. The County will be required to control PCBs in its effluent when the PCB TMDL is implemented. TMDLs for the other toxins will be coming as well. Because the County is building a new plant, it is irresponsible not to study and develop alternatives to toxin removal PRIOR to investing in this plant.

- This plan defers to a yet-to-be-selected DBO contractor to develop a biosolids management plan. The County also defers the decision as to who will be responsible for the biosolids management system, the "County alone or by the City and County together." *See* 2006 Amendment, Ch. 3.7 at 3-7. As a major capital component of the County's plan, the biosolids management plan must be detailed with specificity to allow public review prior to submission to Ecology.

- Here the County presents three alternatives for discharge – 1) advanced treatment to under 10 ug/l with delta offets; 2) secondary treatment with discharge to the Spokane River and land application during the critical months, or 3) advanced treatment with no river discharge but instead reuse, recharge, and wetlands application and/or discharge to the river as appropriate. "At present, Spokane County's preference is" is river discharge with offsets. *See* 2006 Amendment, Ch. 3.8 at3-9. A "preference" does not substitute for a detailed study of alternatives. Given the inherent uncertainties surrounding demonstrable offsets, the County's "preference" should be revisited in a manner that comports with SEPA and the regulations governing facilities planning.

In sum, Ecology should not approve this plan until it has been amended to provide assurances that the plant as designed is adequate to protect the quality of the state's waters as required by Ch. 90.48 RCW. RCW 90.48.110(1).

During a final meeting of the TMDL Collaboration, Commissioner Todd Mielke informed the audience that the County intends to build one of the best reclamation/reuse plants in the nation. We support that effort and look forward to reviewing a facilities plan that provides the details.

We appreciate your consideration of our comments.

Sincerely,

CENTER FOR JUSTICE

Bonne Beavers
Attorney at Law
On behalf of the Sierra Club, Upper Columbia Group

cc: Todd Mielke, Bonne Mager, Mark Richards
Spokane County Board of Commissioners

Jay Manning, Dave Peeler, Grant Pfeiffer, Ron Lavigne, Jim Bellatty
Washington Dept. of Ecology

Tom Eaton, Adrianne Allen
Environmental Protection Agency Region 10

Michael DeVleming, Mayor City of Spokane Valley

Dale Arnold, City of Spokane, Wastewater Management Director

Enclosures

BB:meh

EXHIBITS

Exhibit 1 - August 2, 2004 Letter from Ecology to Bruce Rawls
August 18, 2004 Letter from Ecology to Sierra Club

Exhibit 2 - Letter from Sierra Club to Dave Peeler re: Foundational Concepts

Exhibit 3 - Gary Andres, Technical Memorandum, Review of HDR Phosphorus Loading Estimate Technical Memorandum, June 27, 2006.

Exhibit 3.1 - Gary Andres, Technical Memorandum, Review of HDR Phosphorus Loading Estimate Technical Memorandum, January 15, 2007.

Exhibit 4 - Gary Andres' Resume

Exhibit 5 - City/County Interlocal Agreements

Exhibit 6 - Dr. Joel Massman Technical Memorandum with Table 1 and resume.

EXHIBIT 1

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-40[illegible]
TTY 711 or 800-833-6388 (For the Speech or Hearing Impaired)

August 2, 2004

N. Bruce Rawls, P.E.
Utilities Division
Spokane County Public Works Department
1026 West Broadway
Spokane, Washington 99260-0430

Dear Mr. Rawls:

RE: Spokane County Regional Wastewater Treatment Plant
State Revolving Fund Loan Offer (FP04094)

Thank you for your July 22, 2004, letter regarding Spokane County's interest in signing an $8.5 million loan from the state's Water Pollution Control Revolving Fund (SRF) that was offered to the county during the Fiscal Year 2004 funding cycle for the design-build of a new regional wastewater treatment facility. The purpose of this letter is to provide an $8.5 million SRF loan for your review and signature. The loan is for updating the Wastewater Treatment Facility Plan to reflect requirements of the Spokane River total maximum daily load (TMDL), and subsequently to design and construct the new Spokane County regional wastewater-treatment plant per the approved and updated facility plan. The term of the loan is 20 years, with a 1.5 percent interest rate.

I want to emphasize Ecology's continued support for Spokane County and our commitment to help you finance a new wastewater treatment facility that will meet the county's long-term needs and the water quality standards of the Spokane River. The loan we are offering not only provides the county with the loan, but also reserves a place on future SRF Intended-Use Plans when the county needs additional loan funding for the project. This is conditioned on the county's successful completion and Ecology's approval of the facility plan amendment that addresses the dissolved-oxygen TMDL.

As you are aware, Ecology staff has worked closely with Spokane County Public Works and its consultants for the past several years to plan, design and construct a regional facility that will cost-effectively meet the future wastewater management needs of the county and the region, as well as address the complex water quality needs of the Spokane River. We recognize and appreciate that the planning for this project has been a very challenging and difficult process. However, Ecology and the U.S. Environmental Protection Agency (EPA) have determined that we will not be able to issue an NPDES permit for a new wastewater treatment facility based on the facility plan as approved by Ecology on February 28, 2003. In addition, a SRF loan cannot

be awarded to the county with the scope of work discussed in the facility plan at this time, based on the scientific and technical information that is currently available regarding the dissolved-oxygen TMDL. The data indicate that any discharge to the Spokane River will be required to meet very stringent, water-quality-based effluent requirements. Acknowledging these uncertainties, we believe it is prudent to complete the TMDL and amend the facilities plan before proceeding with the design and construction of a new regional wastewater treatment facility. Ecology and EPA are committed to working with Spokane County and others to finish the dissolved-oxygen TMDL and to develop an implementation strategy that will be legally and scientifically defensible.

The enclosed SRF agreement has been structured with the following conditions:

Section IV.
Subsection A. Project Description, Page 3
The project involves preparing an amendment to the Ecology-approved facilities plan dated February 28, 2003, and the design and construction of an 8 MGD (annual average) wastewater treatment plant at a location east of Freya Street and south of Boone Avenue in the City of Spokane, commonly referred to as the former Stockyards. The wastewater treatment plant will be planned, designed, and constructed, to achieve compliance upon commencement of operation with National Pollution Discharge Elimination System (NPDES) effluent limitations, based on the waste load allocations established in the Spokane River Dissolved-Oxygen Total Maximum Daily Load.

ATTACHMENT 5
SCOPE OF WORK
Subsection C. Facilities Plan
The RECIPIENT shall develop an amendment to the Ecology-approved facilities plan dated February 28, 2003, to evaluate reclamation alternatives. The facilities plan amendment shall be in compliance with the National Pollution Discharge Elimination System (NPDES) effluent limitations, based on the waste load allocations established in the Spokane River Dissolved Oxygen Total Maximum Daily Load. An approvable facilities plan amendment shall meet the requirements of Chapter 173-240 WAC, "Submission of Plans and Reports for Construction of Wastewater Facilities," the facility planning requirements of "Title 40 Code of Federal Regulations," and RCW 90.46 Reclaimed Water Use.

ATTACHMENT 6
SPECIAL TERMS AND CONDITIONS
Subsection A. Disbursement of Funds. No funds will be disbursed for the design and construction portion of the project until the amendment to the Ecology-approved facilities plan dated February 28, 2003, is approved by Ecology.

If you find this agreement to be satisfactory, please have Commissioner Harris sign, date and return all three originals to me by August 13, 2004. We understand this timeframe is very tight for the county to review, sign and return the loan agreement, but we are nearing the regulatory limit of one year from the date of loan offer to sign a loan with the county by August 16, 2004.

In addition, please have your legal counsel sign and date the Opinion of Recipient's Legal Counsel (see Attachment 4 of the loan agreement).

Please let me know if you or other Spokane County officials would like to meet and discuss the enclosed SRF loan agreement in further detail. I can be reached at (360) 407-6405, or you can call Steve Carley of my staff at (360) 407-6572.

Sincerely,

David C. Peeler, Manager
Water Quality Program

Enclosures

Cc: The Honorable Phillip D. Harris,
Chair, Board of County Commissioners of Spokane County
The Honorable M. Kate McCaslin
Vice-Chair, Board of County Commissioners of Spokane County
The Honorable John Roskelley
Spokane County Commissioner
Rene-Marc Mangin, Ecology Eastern Regional Director
Jim Bellatty, Water Quality Program Eastern Regional Section Manager
Steve Carley, Water Quality Program Financial Management Section Manager

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N. Monroe Street • Spokane, Washington 99205-1295 • (509) 456-2926

August 18, 2004

Ms. Rachael Paschal Osborn
Sierra Club – Upper Columbia River Group
Box 413
Spokane, WA 99210

Dear Ms. Osborn:

The purpose of this letter is to respond to your July 19, 2004 letter regarding the proposed Spokane County wastewater treatment plant. In your letter you ask Ecology to (1) clarify the status of the proposed Spokane County wastewater treatment facility with respect to water quality permits and loan agreements, and (2) require Spokane County revise/amend their facilities planning and environmental review documents to provide compliance with the Spokane River TMDL.

In terms of clarifying the status of an NPDES permit for their proposed facility, Spokane County has not submitted an NPDES permit application to Ecology, therefore, an NPDES permit has not been issued. At this point, there has been no commitment to issue an NPDES permit and any future NPDES permitting opportunities will depend on the outcome of the Spokane River dissolved oxygen TMDL and the submittal and subsequent approval of an amended facilities plan. Both Ecology and EPA have communicated to the County that we will not be able to issue an NPDES permit for a new wastewater treatment facility based on the facility plan as approved by Ecology on February 28, 2003.

Regarding the status of the August 15, 2003, State Revolving Fund (SRF) loan offer to Spokane County, Ecology and Spokane County signed a loan agreement on August 12, 2004 for $8,500,000. The purposes of this loan are 1) to update the wastewater treatment facility plan to reflect the requirements of the Spokane River dissolved oxygen TMDL; and 2) to design and to construct a regional wastewater treatment facility per an amended and approved facility plan. The total amount of the SRF loan is $73,400,000 with a term of 20 years at an interest rate of 1.5%.

The following is an excerpt from the loan agreement which defines this project:

> *The project involves preparing an amendment to the Ecology-approved facilities plan dated February 28, 2003, and the design and construction of an eight million gallons per day (MGD) (annual average) wastewater treatment plant at a location east of Freya Street and south of Boone Avenue in the city of Spokane, commonly referred to as the former Stockyards. The wastewater*

> *treatment plant will be planned, designed, and constructed to achieve compliance upon commencement of operation with National Pollution Discharge Elimination System (NPDES) effluent limitations, based on the waste load allocations established in the Spokane River Dissolved Oxygen-Total Maximum Daily Load (TMDL).*

Based on the information presented in your letter, we believe that we have addressed your concerns and agree with your assertions that neither an SRF loan agreement or an NPDES permit application can be considered for Spokane County's proposed wastewater treatment facility unless all required documents (including facility plans and environmental studies) are consistent with the results of the Spokane River dissolved oxygen TMDL.

I sincerely appreciate your continued interest and involvement with these issues and hope we have answered your questions and concerns. Feel free to contact me again should you have additional questions or comments. If you are interested in obtaining copies of any of the documents referred to in this communication, I respectfully request you submit a public records request to our office at your convenience. If you need any further assistance or direction with that process please feel free to give me a call at 509-329-3534.

Sincerely,

James M. Bellatty

James M. Bellatty
Section Manager
Water Quality Program

JMB:dw
cc: Bruce Rawls, Spokane County
Linda Hoffman, Ecology
Dave Peeler, WQ-HQ
Steve Carley, WQ-HQ
Jim Bellatty, WQ-FTO
Tom Eaton, EPA

EXHIBIT 2

SIERRA CLUB
FOUNDED 1892

Upper Columbia River Group

Box 413
Spokane, Washington
99210
509 456-3376
www.idaho.sierraclub.org/uppercol/

January 24, 2007

Dave Peeler
Water Quality Program Manager
WA Department of Ecology
PO Box 47600
Olympia, WA 98504

Re: Spokane River MIP Implementation

Dear Mr. Peeler:

We are writing to express our concerns regarding implementation of "Foundational Concepts" requirements for the Spokane River dissolved oxygen TMDL. As you know, Sierra Club was an active participant in the negotiations that led to the creation of this document and its innovative approach to water quality cleanup.

The particular problem at hand involves development of the "Technology Selection Protocol" (TSP). Technology selection is a key element to ensure success of the MIP concept. It is critical that Spokane River dischargers engage in a comprehensive, disciplined, and transparent effort to identify the best possible treatment technology before making major public investments.

Ecology has explored development of TSP requirements, but has not distributed a draft or final document to the dischargers. A draft TSP framework was shared with Sierra Club and is attached. However, in a recent public records request to the agency, we were informed that Ecology has not created a TSP framework. Rather, according to Ecology staff, capital facilities plans will substitute for a formal TSP process.

Problems with this approach are exemplified by Spokane County's planning for a new treatment plant. The County re-initiated sewage planning shortly after the MIP was signed, and a Capital Facilities Plan is now circulating for public review and comment. Contrary to the requirements of the MIP, the County has not engaged in a TSP process and has not submitted a TSP analysis to Ecology. The County is proposing to use the same treatment technology (MBR, with a few process alterations) that was previously rejected as inadequate to control phosphorus. This is particularly troubling because the County proposes to address its "delta" (the difference between its P concentrations and the 10 micrograms/liter effluent requirement) through a septic tank removal program. Initial review of that proposal indicates it will not meet state regulatory requirements for offsets.

The purpose of the TSP step in the MIP process is to require the dischargers to stop, look and think carefully about the cost effectiveness of various treatment options. Technologies are available to achieve high levels of phosphorus removal. It is incumbent upon the dischargers – who are using tax dollars to plan and build their plants – to ensure that the

public is getting the best deal, and appropriate river protection, from these very expensive projects.

We ask that you direct your staff to develop a framework for a Technology Selection Protocol for exemplary phosphorus removal. We further request that you inform Spokane County that it will be required to conduct a TSP review of its treatment technology options pursuant to the TSP framework. Given the time and public dollars spent to create the MIP, recycling of old plans is not an acceptable technology selection process.

Yours very truly,

Rachael Paschal Osborn
Sierra Club Spokane River Project Coordinator

cc: County Commissioners Todd Mielke, Mark Richard and Bonnie Mager
Bruce Rawls
Mike Sharar
Bill Ross

First Draft of Guidance for Technology Selection Protocol required by Foundational Concepts agreement.

Ecology requires AKART analysis

Workshop in 2004, Collaborative effort of 2005 and workshop of 2006 have narrowed technology choices to:

City of Spokane – tertiary wastewater treatment including NDN for BOD and nitrogen removal with physical chemical treatment for phosphorus removal. The final step being filtration with chemical addition.

Spokane County - EBNR for BOD, nitrogen removal and the first cut at phosphorus removal. Final P removal will be with filtration and possible chemical addition.. County WWFP is recommending membrane filtration.

Liberty Lake Sewer and Water District - EBNR for BOD, nitrogen removal and the first cut at phosphorus removal. The recent upgrade was designed on the presumption that final P removal will be with filtration and possible chemical addition.

Yet to be determined is the method and technology to be used for filtration to meet the interim effluent limitation of 50 ug/L or better.

It is Ecology's expectation that the discharger will submit a technical memorandum to be incorporated into an Engineering Report at a later date. The technical memorandum will describe the criteria and process of filtration technology selection including a schedule. It is anticipated that at a minimum the criteria will include:

Ability of the technology in conjunction with prior treatment units to achieve the interim effluent limitations for total phosphorus.
Performance Reliability of treatment train.
Operational considerations
Maintenance considerations
Weight to be given to each concern.

It is understood that at least one discharger's selection process will include pilot testing for comparison of various selected technologies.

(RAK Thursday, November 30, 2006)

Delta Elimination Plan

At minimum, an acceptable Delta Elimination Plan (DEP) must include or address the following items:

1. **Goals:** The DEP must clearly identify established goals including, but not limited to:
    a. Define DEP, including how it is determined/calculated for the individual entity as a function of TMDL goals and wastewater treatment effectiveness
    b. Timelines or time constraints for DEP implementation
2. **Process:** The DEP must identify, describe and detail the possible DEP projects or activities under consideration by the respective entity including, but not limited to:
    a. List of all identified possible DEP project or activities
    b. Estimation/projection of amount and timing of pollutant ("delta") reduction of each, including supporting calculations, references, etc
3. **Recommendation:** The DEP must recommend one or more projects or activities capable of achieving DEP goals including, but not be limited to:
    a. Prioritization of all identified projects or activities
    b. Timing of implementation of each
    c. Description of how the recommended projects or activities will achieve goals

DEP 101

(plan and schedule of actions to eliminate the delta)

Need – MIP

- MIP to provide reasonable assurance that standards can be achieved during first 10 yrs through treatment technology and planned and scheduled actions to eliminate the delta

Timing

- Cumulative approach – review DEP and TSP simultaneously
- MIP due 1-yr after TMDL approved
- Lead time submittal DEP/TSP to Ecology?

DEP (Tech Memo)

- Description of actions to reduce delta
- Expected results – amount and timing
- Measuring results – amount and timing.

NPS Trading

- Program consistent with EPA guidelines
- Offsets verified by Ecology

EXHIBIT 3

PBS&J

Technical Memorandum

Date: 27 June 2006
To: Rick Eichstaedt, Center for Justice
From: Gary Andres, Sr. Hydrogeologist, PBS&J
Re: Review of HDR Phosphate Study Report

This memorandum presents a summary of a review of a Technical Memorandum developed by HDR for Spokane County entitled *Onsite Sewage Disposal Systems Phosphorus Loading Estimate*, dated May 31, 2006. I understand that this review may be forwarded to the Washington State Department of Ecology.

Overview and General Comments

The HDR Memo provides an estimate of Phosphorus (P) loading to the SVRP aquifer from onsite sewage disposal systems or septic systems. The loading is determined by using County information on the number and age of existing systems and average effluent volume and concentration values. The study then uses assumed soil parameters and depth to aquifer information to estimate P loading. The loading is calculated by adding the mass of P that reaches the aquifer as soil adsorption capabilities are overwhelmed (breakthrough) to P mass reaching the aquifer by bypassing soil adsorption through rapid infiltration where there isn't time for P to attach to the soil. All of the P loading to the SVRP is then assumed to reach the Spokane River.

This study could certainly provide the basis for more detailed studies considering the comments discussed below. One way the Memo could be improved would be to include much of the information presented in table or graph form to better illustrate the assumptions and results.

Specific Comments

If this evaluation is to be used as anything more than an initial estimate of P loading to be followed by further study then several weaknesses are worth pointing out. These weaknesses include:

1. A lack of evaluation of the impact that variations of certain assumptions have on the calculations;
2. Not considering some additional factors that may impact P loading;
3. Absence of field data that support the conceptual model of P migration in the subsurface; and
4. The conservative nature of the evaluation that likely overestimates P loading to the Spokane River.

Because of the uncertainty involved with assumptions used in the analysis, P loading to the SVRP should be expressed as a range rather than a specific number. Certain parameters used are assumptions of average conditions without field data to support them (such as the P adsorption capacity of soil or effluent volume/concentration) and even those averages vary in the literature. It would greatly enhance the study and benefit future investigators to conduct a sensitivity analysis to show how the estimated loading varies as each parameter is varied within reason. This information should be illustrated with tables or graphs.

The conceptual model of P migration in the subsurface does not appear to consider the leaching of sorbed P due to precipitation events or irrigation. These additional flushes of water through the soil column may very well increase the amount of P migrating down to the aquifer. In addition, the competition of P with

other parameters for sorption sites on the soil is not considered, which may also increase the amount of P loading to the aquifer.

In order to determine a viable average annual amount of P loading, seasonal variations should be evaluated to see if loading varies as a function of time. The transient nature of parameters used in the calculations such as effluent volume (seasonally variations in the waste people generate) or those yet to be considered (seasonal variations in irrigation or precipitation and infiltration events) needs to be addressed.

Models of natural systems all require assumptions, with good ones presenting field data that support the conceptual model of the system and verify the accuracy of the model to predict phenomenon. This study could be enhanced or potential flaws revealed with the collection of field or laboratory data to support the nature of the proposed P migration mechanisms. One example of this might be a study of isolated septic systems of various age with data collected on effluent volume and P concentration, P concentrations with depth in the soil, and P concentrations with depth in the percolating infiltration water.

Last, the study makes the overly conservative assumption that all P reaching the SVRP subsequently reaches the Spokane River. It is well known at this point that SVRP water discharges via three routes, the Spokane River, the Little Spokane River, and underflow to Long Lake. Therefore some percentage of the calculated P loading will not reach the Spokane River based on this alone. Additionally, the proximity of the P loading for each system to the river may be an important factor in how much actually reaches the river. The further away from the river the longer the P needs to travel to reach it, increasing the potential mass may be removed through mechanisms such as adsorption or even extraction by wells.

While it may be beyond the scope of the HDR evaluation, the nature of P loading to the river could be better understood by employing the groundwater flow model being developed as part of the Bi-State study of the SVRP that is nearing completion. The MODFLOW model could easily be expanded to include the solute transport code MT3D (they are designed to work together) with simulations developed to explore the geographic variations in P migration within the aquifer and resulting spatial variations in loading to the river.

Offset Applicability

One of the motivating factors for the HDR study is that Spokane County is attempting to use its septic elimination program as a water quality offset to allow the construction of a new sewage treatment plant, which would certainly add new phosphorus to the river. Under Ecology's regulation on offsets (WAC 173-201A-450), the County must document its proposed offset as follows:

(c) The technical basis and methodology for the water quality offsets is documented through a technical analysis of pollutant loading, and that analysis is made available for review by the department. The methodology must incorporate the uncertainties associated with any proposed point or nonpoint source controls as well as variability in effluent quality for sources, and must demonstrate that an appropriate margin of safety is included. The approach must clearly account for the attenuation of the benefits of pollution controls as the water moves to the location where the offset is needed.

Based on the wording of the regulation it appears that the HDR study falls short of this based on the weaknesses discussed above. The study does not quantify uncertainty in both P loading and migration to the river, address variability in the effluent quality, provide an appropriate margin of safety (no sensitivity analysis), or account for attenuation as P migrates in the SVRP. Potential ways to address these are discussed above.

Technology Selection Protocol

At minimum, an acceptable Technology Selection Protocol (TSP) must include or address the following items:

1. **Goals:** The TSP must clearly identify the goals for the wastewater treatment technology, including, but not limited to:
    a. Provide a complete list of established/identified goal
    b. Timelines or time constraints for each goal
2. **AKART:** The TSP must speak to how AKART is being addressed for each individual technology considered in this evaluation
3. **Process:** The TSP must describe and detail the processes used to evaluate and eliminate individual wastewater treatment technologies
4. **Recommendation:** The TSP must recommend either a single wastewater treatment technology, or a combination of wastewater treatment technologies, and include, but not be limited to:
    a. Timing of implementation of selected technology
    b. Description of how the recommended technology will achieve treatment goals

EXHIBIT 3.1

PBS&J

Technical Memorandum

Date: 15 January 2007
To: Rick Eichstaedt, Center for Justice
From: Gary Andres, Sr. Hydrogeologist, PBS&J
Re: Review of HDR Phosphorous Loading Estimate Technical Memorandum

---

This memorandum presents a summary of a review of a Technical Memorandum developed by HDR for Spokane County entitled *Onsite Sewage Disposal Systems Phosphorus Loading Estimate-Final Draft Revision #1*, dated October 18, 2006. The previous final draft of this Technical Memorandum, dated May 31, 2006 was reviewed by PBS&J and documented in a Technical Memorandum dated June 27, 2006.

Side by side comparison of the two draft versions reveals that the revised draft is nearly identical to the May 31 version. Some additional language has been added to clarify the approach used, but the calculations and results are the same.

Criticisms of the May 31 draft are reiterated below followed by an assessment of whether or not the perceived shortcomings have been rectified in this revision.

1. *A lack of evaluation of the impact that variations of certain assumptions have on the calculations.*

   Because of the uncertainty involved with assumptions used in the analysis, P loading to the SVRP should be expressed as a range rather than a specific number. Certain parameters used are assumptions of average conditions without field data to support them (such as the P adsorption capacity of soil or effluent volume/concentration) and even those averages vary in the literature. It would greatly enhance the study and benefit future investigators to conduct a sensitivity analysis to show how the estimated loading varies as each parameter is varied within reason. This information should be illustrated with tables or graphs.

The revised draft still does not provide this type of sensitivity analysis. Aside from varying the soil/aquifer retention factor, none of the other parameters were varied over the ranges cited or provided in the literature. This remains a potential flaw in the analysis, for although the study uses average or recommended values in most cases, the parameters are not known for certain and could be different from the assumed values so bracketing things seems a more appropriate approach.

2. *Not considering some additional factors that may impact P loading.*

   The conceptual model of P migration in the subsurface does not appear to consider the leaching of sorbed P due to precipitation events or irrigation. These additional flushes of water through the soil column may very well increase the amount of P migrating down to the aquifer. In addition, the competition of P with other parameters for sorption sites on the soil is not considered, which may also increase the amount of P loading to the aquifer.

   In order to determine a viable average annual amount of P loading, seasonal variations should be evaluated to see if loading varies as a function of time. The transient nature of parameters used in the calculations such as effluent volume (seasonally variations in the waste people

generate) or those yet to be considered (seasonal variations in irrigation or precipitation and infiltration events) needs to be addressed.

Seasonally variations are still not addressed in the revised draft, which only presents an annual average approach. The impact of flushing is also not considered. Although the study uses a conservative approach and incorporating flushing would likely increase the calculated amount of phosphorous entering the SVRP at times, it is a process that should still be addressed.

3. *Absence of field data that support the conceptual model of P migration in the subsurface.*

   Models of natural systems all require assumptions, with good ones presenting field data that support the conceptual model of the system and verify the accuracy of the model to predict phenomenon. This study could be enhanced or potential flaws revealed with the collection of field or laboratory data to support the nature of the proposed P migration mechanisms. One example of this might be a study of isolated septic systems of various age with data collected on effluent volume and P concentration, P concentrations with depth in the soil, and P concentrations with depth in the percolating infiltration water.

No additional field data is included in this revised draft, nor are there any recommendations for doing so in the future.

4. *The conservative nature of the evaluation that likely overestimates P loading to the Spokane River.*

   Last, the study makes the overly conservative assumption that all P reaching the SVRP subsequently reaches the Spokane River. It is well known at this point that SVRP water discharges via three routes, the Spokane River, the Little Spokane River, and underflow to Long Lake. Therefore some percentage of the calculated P loading will not reach the Spokane River based on this alone. Additionally, the proximity of the P loading for each system to the river may be an important factor in how much actually reaches the river. The further away from the river the longer the P needs to travel to reach it, increasing the potential mass may be removed through mechanisms such as adsorption or even extraction by wells.

The study uses a soil/aquifer retention factor to account for the phosphorous entering the SVRP that does not reach the Spokane River. This approach was also used in the first version, but in this draft the purpose of the calculation is clarified.

The soil/aquifer retention factor is intended to account for phosphorous in the groundwater that gets adsorbed on its way toward the river or removed by pumping. It is essentially a "fudge" factor that cannot be evaluated to any degree of accuracy to its validity as it accounts for a couple of different processes that are not analyzed to any great degree. Phosphorous entering the SVRP travels different distances depending upon location before reaching the aquifer, so for example if all of the loading occurred adjacent to the river the amount entering the river would be greater than if it were all entering the aquifer further away, yet the calculated amount using the soil/aquifer retention factor would be the same.

It is also impossible to evaluate the applicability of the factor to account for pumping. Instead, the study could have used an analysis like that done to estimate the annual average loading from capture zones to calculate the mass removed by pumping.

There is also no accounting for the fact that some portions of the aquifer do not discharge to the Spokane River.

The study would still benefit from a table and/or bar graph summarizing the calculations. A table like this would be useful:

Phosphorous Loading Calculations Summary

Component	Over Aquifer	Spokane County Service Area
Breakthrough-All	9,750	6,290
Breakthrough- Retention 0.5	4,870	3,150
Breakthrough- retention 0.7	2,920	1,890
Pre-Breakthrough	261	52.2
Total:	3,181-5,131	1,942-3,202
Simplified Method	16,300-27,100	9,900-16,500
Annual Avg SVRP Load	3,890-4,440	

All units in lbs/yr

Overall, the study, as previously mentioned, does a good job at developing phosphorous loading estimates from very little site specific data. Conservatism is built in at several steps, such as not accounting for systems outside the aquifer boundary but within the recharge area.

On the other hand, where more detail could have been used it wasn't, such as using a generic soil/aquifer factor to account for several more complex factors. Another key limitation to this is the absence of any uncertainty or sensitivity analysis. The document should include a clear statement of the limitations of the analyses and indicate how rough the estimates are, and it should also include recommendations for steps needed to improve the accuracy of the analysis, such as identifying parameters that would be worthy of a field data collection program to better pin down values.

Offset Applicability

This is repeated from the previous tech memo following the review of the first draft, but it is still applicable:

One of the motivating factors for the HDR study is that Spokane County is attempting to use its septic elimination program as a water quality offset to allow the construction of a new sewage treatment plant, which would certainly add new phosphorus to the river. Under Ecology's regulation on offsets (WAC 173-201A-450), the County must document its proposed offset as follows:

(c) The technical basis and methodology for the water quality offsets is documented through a technical analysis of pollutant loading, and that analysis is made available for review by the department. The methodology must incorporate the uncertainties associated with any proposed point or nonpoint source controls as well as variability in effluent quality for sources, and must demonstrate that an appropriate margin of safety is included. The approach must clearly account for the attenuation of the benefits of pollution controls as the water moves to the location where the offset is needed.

Based on the wording of the regulation it appears that the HDR study still fall short. The study does not quantify uncertainty in both P loading and migration to the river, address variability in the effluent quality, provide an appropriate margin of safety (no sensitivity analysis), or account for attenuation as P migrates in the SVRP.

PBSJ

EXHIBIT 4

Gary Andres

Senior Hydrogeologist

PBS&J

Education

M.S. Geology, Eastern Kentucky University, 1988

B.A. Geology, State University of New York at Buffalo, 1982

B.A. Environmental Studies, State University of New York at Buffalo, 1982

Registrations and Certificates

Registered Geologist, State of Washington, 2002

Registered Hydrogeologist, State of Washington, 2002

Registered Geologist, State of Oregon, 1992

Registered Geologist, State of Idaho, 1997

Certified Ground Water Professional, National Ground Water Assoc., 1996

40-Hour Haz/Mat Health and Safety Training with yearly refresher, 1987 1998

Awards

Montana Department of Environmental Quality Excellence Award, December 1998

PBS&J Environmental Services 2005 *Intra-Service Teamwork Award*

Sr. Hydrogeologist, PBS&J in Spokane, WA. 1999-Present.

Mr. Andres is a Senior Hydrogeologist in our Spokane, Washington office. Mr. Andres has 20 years of hydrogeologic, water resources, and environmental project experience. Mr. Andres has completed projects for municipal governments, private clients, state agencies, and federal bureaus throughout the United States.

Mr. Andres has an M.S. in Hydrogeology from Eastern Kentucky University; is a registered Geologist in Oregon and Idaho; and is also a registered geologist and hydrogeologist in Washington. Gary is also a Certified Ground Water Professional with the National Ground Water Association, and was a recipient of the Montana Department of Environmental Quality's Excellence Award.

Mr. Andres is experienced with groundwater and solute transport modeling, as well as with modeling of vadose zone transport of contaminants. Modeling has included the use of analytical, finite-difference, and finite-element codes. He has a strong background in site characterization and remediation, and data collection and analysis, and has worked on a wide variety of projects ranging from small petroleum contamination sites to Superfund sites. He also has practical experience on water supply projects and surface water studies. Mr. Andres has implemented and evaluated aquifer tests, data collection systems, remediation systems, and monitoring networks for projects throughout the Northwest and Midwest. His experience includes a mix of field and office work, with responsibilities ranging from project management to task management to litigation support and expert testimony.

Hydrogeologist, Landau Associates, Inc., Spokane, Washington. 3-10/2000. Responsibilities included data analysis and screening against regulatory criteria, work plan development, groundwater and solute transport model review, slug test analyses, task management and report writing. Projects included remedial investigations of a petroleum distribution facility and a sand and gravel mining operation, and routine landfill monitoring and reporting.

Hazardous Waste Specialist, Montana Department of Environmental Quality. 1997-1998. Served as project officer for both the Petroleum Release Section and Site Response Section of the Hazardous Waste Site Cleanup Bureau.

Responsibilities included management and oversight of regulatory aspects of projects, involving leaking UST's and CERCA sites. Also provided modeling support for a committee developing a risk-based corrective action (RBCA) programs for the state.

Hydrogeologist, URS Greiner, Inc., Seattle, Washington. 1997. Responsibilities included providing hydrogeologic and modeling support for various subsurface characterization and remediation projects. Projects included sites that were part of the U.S. Navy CLEAN contract, and also sites that were part of the EPA ARCS contract. Project support included groundwater flow, solute transport, and free-phase hydrocarbon modeling, as well as pumping test and recovery system data analysis, RI/FS development, and stream gauging and sampling.

Hydrogeologist, Summit Envirosolutions, Inc., Bellevue, Washington. 1994-1997. Responsibilities included supervision of staff as department manager, hydrogeologic analyses including pumping test analyses and modeling, remediation system design and evaluation including pump and treat and AS/SVE, mine site characterization, surface water studies, and geochemical and bioremediation evaluations. Other duties included database maintenance, computer support and data collection instrumentation, report development, and marketing.

Hydrogeologist, Landau Associates, Inc., Edmonds, Washington. 1990-1994. Responsibilities included pumping and slug test design and analysis, groundwater and solute transport modeling, and regulatory and litigation support issues. Projects included petroleum and solvent contaminated Superfund sites. Additional responsibilities included field work involving soil borings and well installation, remedial system installation and maintenance, and groundwater and soil sampling.

Hydrogeologist, Leggette, Brashears and Graham, Inc., St. Paul, MN. 1988-1990.

Field Technician/Hydrogeologist, Twin City Testing, Inc., St. Paul, MN. 1986-1988.

PUBLICATIONS AND PRESENTATIONS:

Agua Fria Linear Recharge Project-Modeling Reclaimed Water Recharge Impacts, 59th Canadian Geotechnical Conference 7th Joint IAH-CNC/CGS Groundwater Specialty Conference, October 1-4, 2006, Vancouver, British Columbia, Canada.

Upland Basin Groundwater Models for Predicting Septic System Impacts and Land Use Planning, Washington, 5th Washington Hydrogeology Symposium, Tacoma, Washington, 2005.

Modeling of Remedial System Modifications at the Western Processing Superfund Site, Kent, Washington, IGWMC Conf. on Application of Groundwater Modeling, 1993

Groundwater Modeling at the Colbert Superfund Site, Geol. Soc. Amer. Cordilleran Section, Abstract with Programs, 1992.

Remedial Investigation of Hydrocarbon Contamination in a Complex Aquifer System Along the Mississippi River, Minneapolis, Minnesota, NWWA Third National Outdoor Action Conference on Aquifer Restoration, Ground Water Monitoring and Geophysical Methods, 1989.

The Groundwater Monitoring System in the Karst Aquifer of Mammoth Cave, Kentucky, Conference on Science in the National Parks, Fort Collins, Colorado, 1986.

EXHIBIT 5

CITY AND COUNTY WASTEWATER MANAGEMENT AGREEMENT

395-30-2

I. PARTIES.

A. This agreement is between the City of Spokane, hereinafter "City," and County of Spokane, hereinafter "County."

II. PURPOSE. The purpose of this agreement is to:

A. Provide for the collection and treatment of wastewater flows throughout Spokane County.

B. Establish criteria and guidelines to be followed for extending sewer service to unserved areas in the City and County in accordance with the Comprehensive Wastewater Management Plan developed by the City and County, the requirements of the Environmental Protection Agency and Department of Ecology for Facilities Plan, and the findings and goals of the 208 Water Quality Management Program.

C. Recognize the use of the existing City wastewater treatment plant and interceptor system as a regional facility service.

D. Expand the City Wastewater Utility Service Area beyond the existing City boundaries.

E. Define specific geographical areas of responsibility between the parties for development of service beyond the current system use.

F. Not alter current independent responsibilities for operation of existing facilities.

III. REPRESENTATIONS.

A. City

1. It has excessive capacity at the existing wastewater treatment plant, available for regional service.

2. It has capacity to provide now, and in the future, both dry weather sewage conveyance and treatment capacity up to a maximum of 10 MGD to provide for the first phase of the County's wastewater treatment capacity needs in accordance with the EPA/DOE approved CWMP.

3. The existing system and site is capable of being expanded to 66 MGD through a combination of facilities enlargement and/or reduction or elimination of stormwater inflow.

B. County

1. It is in imminent need of sewage conveyance and treatment capacity to serve the WWMA.

13-6

2. Its interest is based on the unincorporated areas of the Spokane County Wastewater Utility Service Area not identified as the City WWUSA

3. The County will not collect stormwater for treatment by the RWWTP.

IV. DEFINITIONS. (Partial Listing)

A. EPA/DOE approved Spokane County Comprehensive Wastewater Management Plan (CWMP) shall mean the plan developed by the City of Spokane and Spokane County in accordance with provisions of Section 201 of the Federal Clean Waters Act. The CWMP prepared by Economic & Engineering Services, Inc. fulfills the requirements of the Step I Facilities Planning Requirements of EPA and DOE, the state planning requirements for sewer utilities, as outlined in WAC 173, and the County Services Act Requirements, as outlined in RCW 36.94.

B. Spokane County Wastewater Management Area (WWMA) shall mean the area representing the urbanizing area of Spokane County, including and surrounding the City of Spokane. The WWMA includes the geographical area that may require an integration of public utility service to protect the area's water resources. The area is designated by the approved CWMP as the 201 planning area and coincides with the External Boundary of the Spokane County Coordinated Water System Plan as designated through the Public Water System Coordination Act.

C. Wastewater Utility Service Area (WWUSA) shall mean that area covered by a specific wastewater utility for the purpose of planning, constructing, operating and managing all public facilities or programs necessary to ensure the satisfactory disposal of wastewaters within its area. This shall include the responsibility for public sewers and the management of individual wastewater disposal systems. Nothing contained herein shall be construed to limit the City's power and authority to form local improvement districts based on the drainage area of the sewage system. The area enclosed within the bold border of Exhibit A is identified as and defines the City WWUSA.

D. MGD shall mean million gallons per day.

E. City Interceptor System shall mean those pipes and facilities necessary to convey sewage from the point of connection described in paragraph V. C. to RWWTP.

F. Sewage shall mean sanitary sewage only, consisting of domestic commercial and industrial wastewater which does not contain prohibited or as defined in the City side sewer ordinance nonstandard sewage as defined in the City of Spokane Sewer Code as hereafter adopted and passed by City.

G. Regional Wastewater Treatment Plant(RWWTP) shall mean the City's wastewater treatment plant located along the Spokane River.

H. Wastewater utility or sewer utility shall mean the administrative department whose sole purpose is to design, construct, and operate the facilities required to collect and treat sewage.

V. GENERAL RESPONSIBILITIES OF CITY AND COUNTY.

A. The County will be responsible for the design, financing, construction and operation of the publicly owned wastewater collection, conveyance and processing facilities necessary to deliver wastewater to the City interceptor system, except as hereafter provided.

B. The City and County shall have joint approval over design of equalization basins, related pumping equipment and metering, monitoring and controls and other incidental facilities necessary to integrate flows into the City interceptor system.

C. The County will deliver wastewater intercepted in their WWUSA to predetermined connection points on the City interceptor system. The initial connection points are identified in the approved CWMP. Future or alternative connection points will be based on system capacity.

D. The City will be responsible for conveying all wastewater from the predetermined points of connection to the RWWTP. The City will be responsible for the operation of the RWWTP as specified by NPDES permit requirements and other state or federal requirements.

E. A uniform program for pre-treatment requirements, exclusion of inflow and infiltration, control of strong waste criteria, a sewer use ordinance, an equitable sewer user charge distribution system shall be established in accordance with the NPDES permit and/or other applicable state or federal laws. Each utility will be responsible for implementing the requirements within their WWUSA. The City will be responsible for enforcement of the program and in the event the County fails or refuses to implement the requirements the City may implement same and bill for its services rendered. If the County fails to obtain EPA approval of its sewer use ordinance and an equitable sewer user charge distribution system the City's EPA approved ordinance and system shall be used.

F. The cost of operation and maintenance of the City sewer utility shall be based on the EPA approved sewer use ordinance and equitable sewer user charge distribution system. The cost of operation and maintenance of that portion of the City system providing service to the County WWUSA shall be identified and shall be the basis of the formula the City uses to develop the user charge for the County. Included in this cost should be all labor, materials, administrative, legal, engineering, and other necessary operational expense of the sewer utility.

G. City user charge schedule for the County Customer Class shall be submitted to the Utility Advisory Committee by July 1 of each year. The Advisory Committee shall review the proposed rate schedule and make appropriate recommendations to the two legislative boards within 30 days. The rate shall be effective on January 1 following adoption by the City.

If new charges are not submitted, the use charges for the preceding year shall remain in force and effect. Routine financial reports on expenses and revenues of City facilities shall be provided to the Board of County Commissioners through the Advisory Committee.

H. The County shall obtain an appropriate state wastewater discharge permit for all connections to the City system.

VI. CITY WASTEWATER FACILITY CAPACITY.

A. Existing Interceptor System.

1. The approved CWMP identifies the initial points of connection of City and County systems. Future points of connection will be identified by the City.

2. County will provide a schedule and projected wastewater flow for each point of connection to the City facilities. This schedule will be for five years and updated annually.

3. County wastewater flow will be intercepted and integrated into City WWUSA flow during low flow periods. Operational control of the flow from County shall be responsiblity of the City.

B. Existing Regional Wastewater Treatment Plan.

1. The City established the available dry weather flow (DWF) capacity of the existing RWWTP as 44 MGD. The design of the interceptor and equalization basins in the County WWUSA will provide for retention of flows for release during dry periods of available conveyance and treatment capacity.

2. The City will reserve a maximum of 10 MGD to provide for the first phase of the County's wastewater treatment capacity needs in accordance with CWMP. The County will purchase this reserve capacity right.

C. Future Interceptor and Wastewater Treatment Plant Capacity.

1. Expansion of the City interceptor system and RWWTP will be based on capacity deficiencies and will be expanded when required to meet the City and County projections of future flow contributions as provided for in Section VI A 2.

VII. USER CHARGE SYSTEM.

The County shall bear its reasonable and fair share of the interception and treatment of County sewage in the City's interception and treatment facilities based on the EPA approved sewer use ordinance and equitable sewer use charge distribution system.

County Class of Service rate schedule shall be based on an allocation of the cost of operating the City sewer utility proportionate to the County flows in facilities used to provide service to the County and allocated in accordance with the following formula:

COUNTY CLASS OF SERVICE USER CHARGE ELEMENTS

I. Operation and Maintenance

a) Treatment Plant Expense (Proportionate to flow at RWWTP headworks)

b) City Interceptor Cost (Proportionate to flow at RWWTP headworks)

c) Equalization Basin Cost

II. Capital Facility Debt Service

a) Reserve Capacity Acquisition (10 MGD - Plant & Interceptors)

b) Future Capacity Expansion (As Determined)

Proportionate flow between the City and County system will be determined by actual measurement of flow at the points of connection between the County's and the City's sewer system and allocated proportionately to the volume of flow at the RWWTP headworks, adjusted by volume of storm water flow not subject to biological treatment. The ratio of average annual flow between the County contribution and the total average annual flow of the City system shall determine the allocation of cost in the County's user charge rate schedule unless provided for otherwise. Costs associated with strong waste shall be allocated in accordance with the City's sewer ordinances.

VIII. WASTEWATER UTILITY ADVISORY COMMITTEE.

A three-member committee consisting of one individual from the City, one from the County, and one private citizen selected by the other two, shall serve as an advisory board for reviewing the County customer class rate schedule and providing other coordination as requested by the City and the County.

IX. LIABILITY.

A. This agreement has no relation to any operations conducted by either party individually or as a joint venture with others.

Liability of the County for the City's operation shall be shared in proportion to volumetric flows, including the equalization basins, unless such operation is performed maliciously and in bad faith.

13-10

B. Costs attributed to liability for either party within the WWUSA shall be the sole responsibility of that party.

X. INSURANCE.

The City shall procure such insurance as it deems advisable to cover its facilities. The cost shall be paid through the EPA approved user charge system.

XI. GENERAL.

A. Maintenance of Records.

Both entities shall make available to each other or the Washington State Auditor or other federal or state agency or their respective duly authorized representatives, at any time during their normal business hours, all records, books or pertinent information which each party shall have kept in conjunction with this agreement.

B. Assignment.

Both parties hereto agree that neither may assign any interest in the agreement without the express written consent of the other party.

C. Waiver.

No officer, employee or agent or otherwise of the City or County have the power, right or authority to waive any of the conditions or provisions of this agreement. No waiver of any breach of this agreement shall be held to be a waiver of any other or subsequent breach. All remedies afforded in this agreement at law shall be taken and construed as cumulative, that is, in addition to every other remedy provided herein or by law. Failure of either the County or City to enforce any time any of the provisions of this agreement or to require at any time performance by the other of any provision hereto shall in no way be construed to be a waiver of such provisions nor in any way affect the validity of this agreement or any part hereof, or the right of either to hereafter enforce each and every such provision.

D. Notices.

All notices called for or provided for in this agreement shall be in writing and must be served on any of the parties either personally or by registered mail, return receipt requested, at their respective addresses hereinabove given. Notices sent by registered mail shall be deemed served when deposited in the United States mail postage prepaid.

E. Headings.

The article headings in this agreement have been inserted solely for the purpose of convenience and ready reference. In no way do they purport to and shall not be deemed to define, limit or extend the scope or intent of the captions to which they appertain.

F. All Writings Contained Herein.

This agreement contains all of the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind any of the parties hereto.

XII. PERIOD OF AGREEMENT.

A. Duration. This agreement shall be of indefinite duration except as provided herein.

B. Amendment. Modification or amendment of the agreement shall not occur without the concurrence of the parties.

C. Termination. This agreement may not be terminated without the concurrence of both parties except as provided herein.

D. In the event the County is unable to obtain firm financial commitments for meeting the first five year goal set forth in the approved CWMP, or a modified phased program thereof, by January 1, 1983, this agreement shall terminate automatically.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by their proper officers on the 22 day of December, 1980.

SPOKANE COUNTY, WASHINGTON

By Jerry C. Kopet
Chairman

Harry M. Farrell

Richard Christensen

Attest: Clerk of the Board

By Lorraine Montague
Deputy

Approved as to Form:

Prosecuting Attorney

By James Mason
Chief Civil Deputy

13-12

CITY OF SPOKANE

By _____
City Manager

Attest: _____
City Clerk

Countersigned:

_____
Director of Finance

Approved:

_____
Assistant Corporation Counsel

13-13

1 - 1982

SPOKANE

File Copy

FILED
AUG 23 1982
CITY CLERK'S OFFICE
SPOKANE, WASH.

te: August 23, 1982

AGENDA CATEGORY
- ☐ Hearing
- ☐ Report
- ☐ Contract
- ☐ Resolution
- ☐ Annexation
- ☐ Ordinance:
  - Emergency _____
  - 1st & 2nd _____
- ☐ Staff Report DPR

RECOMMENDATION
- ☒ Approve
- ☐ Accept
- ☐ Deny
- ☐ Set Hearing Date For: _____
- ☐ Continue To: _____
- ☐ Council Direction

81-1053

Budget Account # _____

: MAYOR AND CITY COUNCIL
- ☒ For Action
- ☐ For Information

AMEND #1

ENDA WORDING

proval of contract with County, 10 million gallons per day sewage treatment capacity

CKGROUND

gally, this contract is an addendum to the City--County wastewater management reement approved in late 1980. I attach a summary of that agreement which we used explaining it to the City Council at that time and a copy of a "jig saw puzzle" ich I used to explain the various elements which need to fall in place for the area-de wastewater management to be successful. I will use these visual aids on Monday ening to explain the City--County agreement further.

is addendum is the result of a number of meetings held between City and County staff and July. This memorandum will describe the goals of the two agencies of govern-the issues which concerned us and the resolutions of those items.

e City's goals are to save the aquifer, not disrupt the County's valley sewer project, l get a fair return for our 10 million gallons per day capacity. The County's goals e different, but not necessarily antagonistic. They seek to avoid the cost and delay constructing a new free-standing plant and avoid the development of additional sewer stricts in the Valley. They want to pay a fair price for 10 million gallons per day

AL IMPACT

fication necessary to Spokane Valley Advisory Council? Yes X No ___

RECEIVED
SEP 7 1982
Dept. of PUBLIC UTILITIES

ACHMENTS: (list) (2)

tting Department City Manager

Legal

er (Finance, Admin., Engineering, or nning)

Finance

Terry L. Nash
City Manager

L POSITION

APPROVED & ADOPTED BY SPOKANE CITY COUNCIL:
AUG 30 1982

DISTRIBUTION DESIRED AFTER COUNCIL ACTION:

Spokane County Commissioners
Public Utilities
General Acctg.

capacity but also make that payment at a date in the future when their utility department is in a stronger financial condition than it is today, having many more customers than is presently the case.

Issues:

When would the County begin to pay for the capacity? The initial agreement of 1980 contains language under which it would terminate if the County has not taken action to hook-up valley service by 1985. We thus agreed to reserve this 10 million gallons capacity until 1985 for the County without a fee.

What is 10 million gallons per day worth? We negotiated several different items of cost and came upon a formula acceptable to both City and County staff. Under this formula we would take the 1978 construction cost of the plant, appreciate that cost to 1982 replacement value by using the Engineering News Record cost index for sewer plant construction, Then depreciate that price by applying a depreciation schedule. From that amount we would then deduct the federal and state funds which were available to the project and split the remaining local share on a 10/40 basis because 10 million gallons of the plant would be the County's proportionate usage. This complex formula leads to a value of that 10 million gallon capacity of $5,780,000.

What is the pay-off period? The County anticipates having very few customers until 1985, then gradually increasing the number of customers on the system. Rather than burden the County with a heavy payment in years when it has few customers, we agreed to accept a 15 year pay-off period for the County's debt to the City with a gradually escalating portion of the payment being made each year. The County would pay to the City 1% for each of the first two years, 2% for each of the next two years, 4% for the fifth year. For years five through nine they would pay 8% on each of those years and for years 10 through 15 they would pay 10% for each of those years.

How is the City assured it will receive real dollars? City staff was concerned that 15 years hence the dollars we would receive from the County would be of much less value than today's dollars, unless the County agreed to some type of indexing. The Seattle implicit price deflator was thus used in the calculation of annual payments. If, for example, the price on a specific year to be paid to the City was $300,000, and the implicit price deflator for that year was 7%, the County would pay us 107% of the calculated value, or $321,000. In this way, applying that calculation each year, we are assured of receiving constant value dollars for this capacity.

Are there other rules that apply? The major other rule which will apply is the requirement that the County provide "Industrial pretreatment" for any effluent entering our plant from their system in violation of the EPA standards which would be deemed detrimental to the plant's operation.

Conclusion:

There is no right or wrong to negotiating this type of contract, and we are searching for that elusive method of determining a "fair price." Both staff of City and County feel that the pricing system we have settled upon meets both the City goals and the County goals. I will readily admit we have not received for the 10 million gallons capacity the maximum amount of money which it might bring in a different market. We have, however, other goals besides maximizing our return on this plant. The long-run benefit to all of the citizens of the Spokane area from this contract far exceeds that differential.

TWnol

82 0786

OPR 81-1053

City and County Wastewater Management Agreement

AMENDMENT #1

1. GENERAL

This amendment to the City and County Management Agreement dated December 11, 1980, provides for the acquisition cost and schedule for payment for County use of the City's interceptor system and waste treatment facilities as outlined in Section VI and VII of the Agreement.

This amendment also establishes the basic methodology of allocating costs between the City and County for modifications to the existing City facilities and for the expansion of those facilities.

2. ACQUISITION PROCEDURES FOR EXISTING FACILITIES

Supporting documentation and calculations for the County's acquisition costs of the City's Wastewater Treatment Plant and Interceptor Facilities established are on file at both the City and County Utilities Departments.

A. Wastewater Treatment Plant

Acquisition Capacity	10 MGD
Acquisition Cost	$5,177,138 (Dec. 31, 1985 purchase cost)
Payment Period	15 years

B. INTERCEPTOR FACILITIES

Location	Interceptor lines from the intersection of Havana & Hartson to the City Sewage Treatment Plant
Acquisition Cost	$602,571 (Dec. 31, 1985 purchase cost)
Payment Period	15 years

C. PAYMENT SCHEDULE

The payment schedule provides for a purchase price for the plant and interceptor identified in A. and B. above of $5,779,709 on December 31, 1985. The County shall make the minimum annual payments for a fifteen (15) year period in accordance with the following schedule. The County, at its discretion, may accelerate the schedule. The annual payment made will be modified by the change in the Seattle Implicit Price Deflater (IPD). The base of the IPD will be January 1985 = 100. Each year the payment due will be increased by the percent (%) change from the January 1985 IPD until the full amount is paid as adjusted by the IPD.

Payment Schedule

Date	% of Total Acquisition	(Minimum Amount)
12/31/85	1	$ 57,797
12/31/86	1	57,797
12/31/87	2	115,594
12/31/88	2	115,594
12/31/89	4	231,188
12/31/90	8	462,376
12/31/91	8	462,376
12/31/92	8	462,376
12/31/93	8	462,376
12/31/94	8	462,376
12/31/95	10	577,971
12/31/96	10	577,971
12/31/97	10	577,971
12/31/98	10	577,971
12/31/99	10	577,975
		5,779,709

D. ACQUISITION OF ADDITIONAL INTERCEPTOR CAPACITY

Acquisition of additional interceptor capacity from the City will be established at the time the City's sewage treatment plant requires expansion from 44 MGD. The same general principles used to develop the interceptor acquisition costs outlined herein, will be utilized to establish future capacity costs.

E. The Wastewater Utility Advisory Committee provided for in Article VIII of the December 11, 1980 Agreement shall review this payment schedule in 1985 and at least every three years thereafter to recommend modification, if any, to achieve the objectives of the CWMP.

3. MODIFICATION OF EXISTING CITY WASTEWATER TREATMENT PLANT

The following will be used by the City and County in allocating future costs associated with modifying or expanding the Regional Wastewater Treatment Plant.

A. The existing Regional Wastewater Treatment Plant has a 44 MGD capacity. The City and County Agreement provides for 10 MGD of that capacity to be reserved for County use and the remaining 34 MGD for City use. Modifications to the existing plant to respond to existing water quality requirements will be shared on a proportionate basis based on the ratio of 10 MGD to 34 MGD.

B. Expansion of the 44 MGD plant to approximately 62 MGD is anticipated and defined in the City's Facility Plan. At the time expansion is considered, the County and City will independently determine their future treatment plant capacity needs. The expansion costs will be allocated based upon the County and City's respective share of the total expansion volume. Each utility will be responsible for arranging for financing of their respective share, unless other joint arrangements are made.

C. If water quality conditions require that seasonal land disposal or other capital facility improvements are necessary, in addition to the expansion of the existing facility from 44 MGD to 62 MGD, and provided that the additional treatment is only specified for flows in excess of 44 MGD, then the same proportionate financing responsibility, as identified in paragraph B, will prevail.

D. Operation and maintenance cost will be allocated based upon the actual flow as specified in the Agreement. If the operation and maintenance cost is assignable to a specific unit process, i.e., land disposal, the O&M allocation for that unit process will follow the proportionate allocation of capital cost assignments.

E. The cost of special Water Quality Monitoring Studies and/or in-lake treatment of algae in lieu of capital improvement programs, will be based upon the benefits received. Any reduction in capital improvement costs will equate to benefits that can be allocated as discussed in paragraph D. If the benefits received are associated with O&M, the cost will be incorporated into the rate structure and allocated according to proportionate flow measures.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by their proper officers on the 17 day of August, 1982.

SPOKANE COUNTY, WASHINGTON

By Jim McBride
Chairman

Attest:

By Rosanne Santoyo
Deputy

Approved as to Form:

Prosecuting Attorney

James Emerick
Deputy

Adopted by the City Council of the City of Spokane, Washington, at a lawful open public meeting thereof this 30th day of August, 1982.

CITY OF SPOKANE, WASHINGTON

By James E. Chase
MAYOR

ATTEST:

Marilyn J. Montgomery
City Clerk

2 - 1983

CITY AND COUNTY WASTEWATER MANAGEMENT AGREEMENT

AMENDMENT #2
August 1983

OPR 81-1053

1. GENERAL

This amendment to the "City and County Wastewater Management Agreement" dated December 11, 1980, and Amendment #1 dated August 17, 1982 provides for the modification of the City's existing sanitary and storm sewer system to make available to the County an average of 10 MGD of wet weather interceptor capacity for service to the Spokane Valley.

The amendment establishes the general modification required, the tentative schedule for the construction, and the responsibility for financing such changes as previously reviewed and accepted by the Department of Ecology.

2. MODIFICATIONS REQUIRED

The modification to the City Regional Waste Treatment Plant and Sanitary & Storm sewer system will be based on the analysis presented in the Pre-Design Report for the Spokane Valley Interceptor, November 1982 and Addendum No. 1, July 1983 prepared by Bovay Engineers.

a. The City agrees to modifications of the Hartson overflow structure proposed by the County to allow use of City interceptor as outlined in 2(b).

b. The County may discharge Valley Interceptor flows into the Hartson system until the Valley Interceptor flows reach 1.6 MGD average or 4 cfs peak flow conditions, or the end of the DOE Grant period for the Valley Interceptor project, whichever occurs first. The Grant period is currently scheduled to end on April 1988. Prior to the established control date the County will construct a Valley Interceptor extension (36-inch diameter line) to the River Interceptor and the Valley Interceptor wasteflow will then bypass the Hartson System.

c. The City will allow the County to utilize the existing 5 cfs of peak wet weather flow (PWWF) River Interceptor capacity until the Valley Interceptor flows approach 2 MGD average or 5 cfs peak. Prior to the County's Valley Interceptor flows reaching 2 MGD average or 5 cfs peak, the County and City will at County expense separate the storm sewers in the Trent and Mallon basins to provide 24 cfs of additional PWWF capacity in the River Interceptor.

d. Upon completion of the separation of the Trent and Mallon basins, the City will use the 5 cfs PWWF capacity to reduce combined sewer overflows.

3. ENGINEERING DESIGN & FINANCING

The County will prepare engineering plans and specifications for approval by the City based upon the pre-design report approved by the City and the DOE and the above criteria. If the City expands the project to achieve additional City CSO project objectives, the County will participate in the project proportionate to the County's identified responsibility.

The County will be responsible for funding their portion of the project on the schedule identified.

In witness whereof, the parties hereto have caused this agreement to be executed by their proper officers on the 6 day of September, 1983.

SPOKANE COUNTY WASHINGTON

By _____
Chairman

DATE: Sept. 13, 1983

I HEREBY CERTIFY THIS IS A TRUE AND ACCURATE COPY OF THE ORIGINAL WHICH IS ON FILE IN THE OFFICE OF THE CITY CLERK.

Marilyn J. Montgomery
CITY CLERK

SEAL CITY OF SPOKANE
COUNTY OF SPOKANE
STATE OF WA.

ATTEST:

BY _____

APPROVED AS TO FORM:
PROSECUTING ATTORNEY

Adopted by the City Council of the City of Spokane, Washington at a lawful open public meeting thereof this 6th day of September, 1983.

CITY OF SPOKANE, WASHINGTON

By _____
Mayor Pro Tem

ATTEST:
Marilyn J. Montgomery
City Clerk

Approved as to Form:
Sandy C. Sloane
Assst. Corporation Counsel

3 - 1983

FOR COUNCIL MEETING OF: October 20, 1986

Notify Prior to Meeting:
Spokane Valley Advisory Council? ☐
Other? _____

MAYOR AND CITY COUNCIL
☒ For Action
☐ For Information

RECEIVED
OCT 14 1986
CITY CLERK'S OFFICE
SPOKANE, WA

AGENDA CATEGORY	RECOMMENDATION
☐ Hearing	☐ Accept
☐ Annexation	XX Approve
☐ Report	☐ Deny
XX ☒ Contract	☐ Place on File
☐ Resolution	☐ Set Hrg. / Review Date For: _____
☐ Emergency Ord.	☐ Defer / Continue To: _____
☐ First Rdg. Ord.	☐ Council Direction
☐ Report of City Manager	

Clerk's File # OPR 81-1053
Eng. / LID # _____ BID # _____

AGENDA WORDING:

City of Spokane/Spokane County Interlocal Cooperation Industrial Sewage Pretreatment Agreement; Amendment #3

BACKGROUND:

The City of Spokane must develop and implement an industrial sewage pretreatment program pursuant to conditions contained in its wastewater discharge permit issued by the Washington State Department of Ecology. The County, similarly, pursuant to 40 CFR, Part 403, has legal obligations regarding industrial sewage pretreatment. This interlocal agreement amendment reflects the effort of the City and County to adopt and enforce coordinated local government regulatory programs aimed to ensure a safe and healthful environment. Details of the pretreatment program are being developed for further consideration later.

ENVIRONMENTAL FINDING: Positive

FISCAL IMPACT: None-Agreement coordinates City/County programs to be developed.

BUDGET ACCOUNT #: _____

ATTACHMENTS: (list) Agreement on file with Manager/Engineering Services (Received by Clerk's Office 10-20-86)

Signatures of:

Submitting Department — Legal — Wastewater Management

Manager (Finance, Administration, Engineering, or Planning) — Finance — City Manager

RECEIVED
OCT 29 1986
ENGINEERING SERVICES

COUNCIL ACTION
AT ITS October 20, 1986 MEETING, THE SPOKANE CITY COUNCIL TABLED CONSIDERATION OF THIS MATTER FOR one week TO: Monday, October 27, 1986 AT 7:00 P.M. IN THE COUNCIL CHBR.

APPROVED & ADOPTED BY SPOKANE CITY COUNCIL:
OCT 27 1986
Marilyn J. Montgomery
CITY CLERK

DISTRIBUTION AFTER COUNCIL ACTION
WA State DOE
WA State Ofc of Community Affairs
Spokane Co. Health Distric
Environmental Affairs
WWTP
Legal
Spokane Co. Utilities/Debra

12

RECEIVED
OCT 20 1986
CITY CLERK'S OFFICE
SPOKANE, WA

October 20, 1986

Jim Prudente
State of Washington
Department of Ecology
N. 4601 Monroe, Suite 100
Spokane, Washington 99205

State of Washington Office
of Community Development
9th & Columbia Building
MS GH-51
Olympia, Washington 99504

Re: Interlocal Cooperation Agreement

Dear Sir/Madame:

Enclosed is a copy of Amendment #3 to the City-County Interlocal Cooperation Agreement relating to sewage pretreatment. My reading of RCW Ch. 39.34 suggests your departmental approval is needed (see p. 6 of agreement).

For convenience, since this agreement has been requested by the state, I am presuming your approval. It would be appreciated if you could sign the page 6 so indicating and return to our City Clerk, File No. OPR 81-1053.

The agreement references an earlier agreement. Feel free to call the City Clerk (509/456-4350) if you would like copies of that agreement. Please reference File No. OPR 81-1053.

Absent your response, we presume approval, as needed.

Very truly yours,

JAMES C. SLOANE
City Attorney

By:
Robert G. Beaumier, Jr.
Assistant City Attorney

RGB:jb
Enclosure
cc: Clerk's File No. OPR 81-1053

NO. 86 0886

BEFORE THE BOARD OF COUNTY COMMISSIONERS OF

SPOKANE COUNTY, WASHINGTON

IN THE MATTER OF EXECUTING AMENDMENT NO. 3 TO THE CITY/COUNTY WASTEWATER MANAGEMENT AGREEMENT WITH RESPECT TO INDUSTRIAL SEWAGE PRETREATMENT	)	RESOLUTION

WHEREAS, pursuant to the provisions of the Revised Code of Washington, Section 36.32.120(6), the Board of County Commissioners of Spokane County has the care of County property and the management of County funds and business; and

WHEREAS, pursuant to the provisions of Chapter 36.94 RCW and Chapter 39.34 RCW, the City of Spokane and County of Spokane entered into an Interlocal Cooperation Agreement, pursuant to which the County of Spokane purchased certain sewage capacity from the City of Spokane; and

WHEREAS, pursuant to 40 CFR, Part 403, the City of Spokane, in conjunction with its Wastewater Discharge Permit, is required to adopt certain pretreatment programs for industrial users, which the City desires the County likewise recognize and adopt in conjunction with its industrial users; and

WHEREAS, the parties thereto have prepared an Amendment to the Interlocal Cooperation Agreement dated December 22, 1980, between the parties, which Amendment reduces to writing each parties obligation with respect to industrial sewage pretreatment; and

WHEREAS, William R. Dobratz, Spokane County Utilities Director, has recommended that the Board of County Commissioners execute the proposed amendment agreement;

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Spokane County, that either the Chairman of the Board of County Commissioners of Spokane County or a majority of the Board, be

36 0886 (changes shown)

City Clerk's File No. OPR 81-1053

CITY OF SPOKANE/SPOKANE COUNTY INTERLOCAL COOPERATION

INDUSTRIAL SEWAGE PRETREATMENT AGREEMENT

(Amendment #3, Interlocal Cooperation Agreement of December 22, 1980)

THIS AGREEMENT made and entered into this 14 day of October, 1986, between the City of Spokane, a municipal corporation, hereinafter known as the City, and the County of Spokane, a political subdivision, hereinafter known as the County.

W I T N E S S E T H:

WHEREAS, the City owns and operates a wastewater treatment system; and

WHEREAS, the County has purchased wastewater treatment system capacity pursuant to the service agreement, dated December 22, 1980; and

WHEREAS, the City must develop and implement an industrial pretreatment program pursuant to conditions contained in its wastewater discharge permit (Permit #WA-002447-3) issued by the State of Washington Department of Ecology (Ecology), in compliance with Ecology Order #DE 85-689; and

WHEREAS, the County desires to continue to utilize the wastewater treatment system and to recognize and comply with its industrial pretreatment obligations under 40 CFR Part 403;

NOW, THEREFORE, in consideration of the following terms and conditions, City and County agree:

1. AMENDMENT

This agreement may be referenced as City/County Wastewater Management Agreement, Amendment #3, Industrial Sewage Pretreatment. It amends and incorporates by reference the December 22, 1980, City/County Wastewater Management Agreement, as amended.

2. PURPOSE; INDUSTRIAL USER

A. This agreement recognizes a continuing cooperative relationship between the City and County of Spokane, to coordinate local and regional wastewater treatment needs, including development and implementation of a wastewater pretreatment program mandated by federal, state and local regulatory agency requirements and in accord with State Department of Ecology requirements, 40 CFR Part 403, and related laws.

B. The parties agree, subject to this agreement and applicable laws, that the County is responsible to develop and enforce its pretreatment program, ordinance, regulations and permits; PROVIDED, such program will be substantially equivalent to the City's program, ordinance, regulations and permits; and PROVIDED FURTHER, that the City may conduct inspections, monitor said program, test County discharge sources, and review any records, permits, or files related to the pretreatment program in the event federal, state or local regulations require the same and the County does not perform such tasks.

C. As used in this agreement, "industrial user" refers to a utility customer or premises connected to the City or County sewer system as defined in the City's pretreatment ordinance, and in accord with City practice. It also includes any significant discharge source designated as such by the City Director of Wastewater Management. PROVIDED, HOWEVER, in the event "City practice" or designation by the City Director of Wastewater Management is more restrictive than EPA or WDOE definitions, they shall be binding on the County only with its agreement.

3. PRETREATMENT PROGRAMS; ORDINANCES

A. In conformance with Washington State of Department of Ecology Order #DE 85-689, the City is in the process of adopting and implementing a pretreatment program, including a regulatory ordinance, implementing regulations, and adoption of utility service contract modifications and rate adjustments with City customers.

B. Within the time frames as established by WDOE, the County agrees to have adopted and put in force a substantially similar pretreatment ordinance as that of the City, and implementing regulations. For any City amendments or changes thereafter, the County will ((~~initiate consideration of~~)) <u>enact</u> such amendments or changes within ((~~ninety (90) days~~)) <u>time frames established by the WDOE</u>.

C. Within similar time periods, the County agrees to consider, adopt and implement utility service contract modifications, rates and related matters, as deemed necessary by the County, etc., to accomplish a pretreatment program substantially similar to the City's program.

D. This agreement shall not apply to matters outside the legal regulatory or contractual powers of the City or County or matters in contradiction of the requirements of any applicable law or order of the State Ecology Department or other lawful regulatory agency.

4. OTHER JURISDICTIONS; INDUSTRIAL USERS

For industrial users or other significant wastewater discharge sources, as defined in EPA or WDOE regulations, using the

County sewer system but located in other jurisdictions, the County agrees either to:

A. negotiate a City pretreatment compliance contract similar to this agreement and in compliance with state and federal law with said other jurisdiction; or

B. contractually impose industrial discharge permit requirements developed as part of the County pretreatment program and in compliance with state and federal law directly upon said industrial users or designated discharge source.

5. RECORDS AND FILES; INSPECTIONS

A. All County files, ordinances and records developed or related to this agreement shall be freely open to inspection and copying by the City Director of Wastewater Management ((~~and the County appoints~~)). Said Director ((~~as its agent~~)) ~~to~~ may inspect, take samples or tests, or conduct other monitoring activities as he/she deems necessary to assure compliance with this agreement and any ordinance or program relating thereto.

B. Any authorized officer or employee of the City may enter and inspect, at no cost, at any reasonable time, any part of the sewer system of the County for the purpose of determining compliance with pretreatment requirements. "No cost," for the purpose of this section, means the County shall not impose any charge. It does not mean that the County shall be liable for any expenses incurred by the City. The right of entry and inspection shall include access to public streets, above and below ground, and easements and property within which the affected system is located. Additionally, the City shall be permitted, as appropriate and, upon reasonable notice to the County and the private owners, to enter onto private property to inspect sewage discharges. The right of inspection shall include on-site inspection of pretreatment and sewer facilities, observation, measurement, sampling, testing and access to (with the right to copy) all pertinent compliance records located on the premises of the industrial user or other significant discharge source identified by the City Director of Wastewater Management.

C. The County Utilities Director shall furnish, as requested, the City Director of Wastewater Management, free of charge, copies of County ordinances, applicable regulations, as adopted and amended, other interjurisdictional agreements, each industrial waste discharge permit acceptance form issued, and any contract entered into for the purposes of industrial or other sewage or waste control which may be required for the City to meet required federal, state, or local regulations and monitor compliance with this agreement. The County shall provide the City access to and copies of, if requested, all industrial or other pretreatment disclosure forms, industrial or other monitoring reports, including 40 CFR, Section 403.12 compliance reports, self-monitoring reports, baseline reports, records of violations and actions taken, and any other monitoring or reporting require-

ments imposed by federal, state, or local health regulations. These records and other relevant information shall be maintained by the County for City inspection for at least three (3) years.

6. CITY REMEDIES.

A. Where the Director of Wastewater Management determines that the County has not adopted or implemented a pretreatment ordinance/program consistent with this agreement or has failed to satisfactorily implement or enforce the requirements established thereunder, or has otherwise failed to perform this agreement, he may issue a written notice to the County Utilities Director, specifying the nature of the default and any proposal to correct the same. The notice shall specify a reasonable compliance schedule.

B. Should the County fail to perform in accord with the notice within the time specified, the City may proceed to accomplish the terms thereof, at the County's expense and liability; PROVIDED, HOWEVER, if the County fails to agree with the written statement, it may appeal the same to a ((~~board of arbitration, mutually selected~~)) mutually selected arbitrator. For convenience, both parties will accept an Ecology official from WDOE designated by the Department as arbitrator.

C. In addition, if the Director of Wastewater Management determines that the County has failed or has refused to fulfill any federal, state, or local regulations concerning pretreatment obligations, or that any County industrial user or other significant discharge source identified by the City is violating the pretreatment ordinance or program, and if the County has not fulfilled its obligations after having received due notice, then the City may develop and issue a remedial plan containing a description of the nature of the pretreatment deficiencies, an enumeration of necessary steps to be taken by the County, and a reasonable time schedule for attaining necessary compliance with all pretreatment requirements. The County agrees to timely implement such plans; PROVIDED, HOWEVER, if the County has appealed any matter discussed herein to the ((~~Board~~)) entity designated in subparagraph 6-B herein, it shall have no legal duty to comply with the plan unless its appeal is denied.

D. Should any utility customer fail or refuse to comply with the pretreatment ordinance and program, or with the remedial plan, either the County or the City may seek, where deemed necessary, injunctive relief against such discharge.

7. INDEMNITY.

The County shall indemnify the City for all loss, liability, damages, fines and costs incurred as a result of harmful industrial or other waste discharge from the County system of sewerage. The County shall reimburse the City for fines or costs stemming from injury to City personnel, damages to City facilities, disruption of treatment processes or operations, harmful

degradation of sludge quality, NPDES permit violations, and other air, water and sludge quality violations caused by industrial wastes received from the County's sewer system.

8. DANGER.

Where a discharge from the County or its customers to the City wastewater treatment system presents an imminent danger to the health and welfare of persons, or presents an imminent danger to the environment, or interferes with the operation of the wastewater treatment system, all in the judgment of the City Director of Wastewater Management, he may immediately initiate steps to identify the source of the discharge, and to halt or prevent said discharge. He may seek injunctive relief against outside jurisdictions and/or any industrial user or discharge source contributing to the emergency condition, and/or may pursue other remedies.

9. ADDITIONAL.

A. The County agrees to provide funds, personnel and resources as determined by the County as necessary to establish and enforce its pretreatment program.

B. The County agrees to develop and regularly update an Industrial User Survey similar to the City survey and notify the City of any significant changes regarding industrial dischargers subject to pretreatment within thirty (30) days of such change.

C. The City official in charge of administering the City's responsibilities herein is the City Director of Wastewater Management. The County official in charge of administering the County's responsibilities is the County Utilities Director. These persons function directly and through designees.

10. NOTICE.

The requirement of provision XI(D) of the original, December 22, 1980, contract to transmit notices by registered mail is modified to allow transmission by certified mail, in addition to any other permissible method.

11. TERM.

This agreement will remain in effect so along as the service agreement remains in effect. Termination of the service agreement shall also result in the termination of this agreement.

IN WITNESS WHEREOF, the parties have caused this agreement to be executed by their proper officers this 14 day of October, 1986.

SPOKANE COUNTY

By _____
Chairman, Board of County Commissioners

ATTEST:

_____
Clerk of the Board of Commissioners 86 0886

APPROVED AS TO FORM:

_____
County Prosecutor

ADOPTED by the City Council October 28, 1986.

CITY OF SPOKANE

By: _____
City Manager

ATTEST

_____
City Clerk

Approved as to form:

_____
Assistant City Attorney

AMENDMENT #3 AND PRIOR EXISTING CONTRACT APPROVED:

_____
Department of Ecology
(RCW 39.34.050)

_____
Office of Community Affairs
(If applicable, RCW 39.34.120)

4 - 1983

UO 01-1053

DUPLICATE ORIGINAL

AMENDMENT NO. 4 TO WASTEWATER MANAGEMENT AGREEMENT BETWEEN THE CITY OF SPOKANE AND SPOKANE COUNTY

THIS AMENDMENT, is made and entered into this 6 day of August, 1996, by and between the CITY OF SPOKANE, a municipal corporation of the State of Washington, hereinafter referred to as the "City", and SPOKANE COUNTY, a political subdivision of the State of Washington, hereinafter referred to as the "County."

RECITALS

WHEREAS, the City currently owns and operates a general sewerage system within and without its corporate limits in Spokane County, Washington, including the operation of a regional wastewater treatment plant (RWWTP); and

WHEREAS, the County currently owns and operates a general sewerage system within the unincorporated portions of Spokane County, Washington; and

WHEREAS, Section 36.94.110 of the Revised Code of Washington (RCW) requires the City and the County to abide by the terms of the Comprehensive Wastewater Management Plan (CWMP) and any amendments thereto adopted by the County pursuant to Chapter 36.94 RCW, in the future development of their systems; and

WHEREAS, pursuant to RCW 36.94.190, the City and the County are authorized to contract with each other regarding the establishment, maintenance and operation of all or a portion of a system of sewerage; and

WHEREAS, pursuant to Chapter 39.34 RCW, two or more public entities may jointly cooperate to perform functions which each may perform individually; and

WHEREAS, pursuant to the City and County Wastewater Management Agreement executed between the County and the City and dated December 22, 1980(hereinafter referred to as the "1980 Agreement"), the City of Spokane agreed to reserve and the County agreed to purchase up to ten (10) million gallons per day capacity in regional wastewater treatment plant and interceptor system (RWWTP), for the purpose of providing for the County's wastewater treatment needs in accordance with the CWWP; and

WHEREAS, the 1980 Agreement was amended successively by the parties on August 17, 1982, September 6, 1983 and October 28,1986; and

WHEREAS, pursuant to the 1980 Agreement, as amended, the County collects and discharges wastewater from the County's general sewerage system into the RWWTP for treatment and disposal; and

WHEREAS, in the process of developing the County's pretreatment program, the parties have reached agreement wherein the County will fund City staff to implement, manage and administer the County's pretreatment program and pretreatment ordinance under the authority of the Director of Spokane County Utilities; and

WHEREAS, the parties recognize that only the County has the legal authority to enforce County ordinances and regulations, and to prosecute and impose civil and criminal penalties for violations of the County's pretreatment ordinance occurring within the unincorporated area of Spokane County.

In consideration of the above recitals and the mutual promises below, the County and the City agree that the December 22, 1980 City and County Wastewater Management Agreement, as amended, is further amended as follows:

SECTION 1

A. The County agrees to retain the City, through its Wastewater Management Department, to implement, administer and manage the requirements of the County's regulatory pretreatment program and pretreatment ordinance (as now constituted or hereafter amended) for the County's general sewerage system within the unincorporated portion of Spokane County. The County, at the request of its Director of Utilities, may also retain the City, through its Wastewater Management Department, to assist the County in implementing, administering and managing the pretreatment provisions of sewer connection agreements which the County executes or has executed with other municipal corporations or sewer districts in Spokane County and which discharge sanitary sewage to the County's system.

B. The City shall:

1. Make contact with potential users, draft permits for users, which the County will review and forward with County letterhead to the user.

2. Endeavor to keep the program with assistance from County in compliance with State and Federal requirements.

3. Determine, administer, and implement compliance monitoring program for user; and prepare reports and forward to user and the County.

4. Copy all monitoring results to the County, as well as correspondence to users that indicate non-compliance with the program.

5. Prepare an annual summary for both the City and the County, and forward to appropriate regulatory agencies, as well as the County.

By: _____
Deputy Clerk

Steven Hasson

Approved as to form:

_____
Deputy Prosecuting Attorney

CITY OF SPOKANE:

Attest: _____
City Clerk

By: _____
ACTING CITY MANAGER

Approved as to form:

_____
Assistant City Attorney

rental and out of pocket expenditures, plus all associated costs for fringe benefits to labor, including but not limited to Social Security, retirement, industrial insurance, and medical aid, prorated sick leave, holidays and vacation time, and group medical and dental coverage.

SECTION 5

The City shall submit monthly billings to the County for its services performed and costs incurred pursuant to this Amendment, by invoice to the Division of Utilities, Public Works Building, West 1026 Broadway, Spokane, Washington 99260-0430. Payment by the County to the City shall be made within thirty (30) days of receipt by the County of a properly completed invoice from the City. Delinquent payments shall accrue interest at a rate of one percent (1%) per month.

The City's cost of overhead for the pretreatment program currently being paid by a proportionate share of flow basis at the meter will continue. In the event the County's portion of the pretreatment program results in an increase to the City's pretreatment overhead costs; the City and County will agree on an equitable adjustment in the billing from the City to the County. Current Point Source Specific charges that in the past have been detailed and billed separately to the County; will continue on a information basis only and no additional billing. The County will use this information to bill the source industrial user. The City and County may agree on an alternative method of billing the Point Source than described above as long as the resulting cost impact remains as described.

County will determine if the cost of pretreatment will be passed on to all customers, commercial customers, or a combination.

SECTION 6

The City is an independent contractor in the provision of service to the County under this Amendment, and City employees performing services pursuant to this Amendment, shall in no instance be considered as being employees of the County.

The County will determine what information needs to be sent on County letterhead or determine a standard cover letter that can be sent out to inform the user of the City/County arrangement.

City vehicles that visit County users will be unmarked.

City employees will have proper identification and documentation for all work performed in the County.

SECTION 7

INTERLOCAL 1996

OPR 96-466

INTERLOCAL COOPERATIVE AGREEMENT

BETWEEN

THE CITY OF SPOKANE
AND
SPOKANE COUNTY

in the

STATE OF WASHINGTON

Interlocal cooperative agreement between the City Council of the City of Spokane and the Board of County Commissioners of Spokane County, Washington establishing the conditions and understandings under which the two agencies will apply to the Washington State Department of Ecology for an Extended Payment Grant to offset the costs associated with completing the necessary sewering projects in Spokane County for protection of the Spokane-Rathdrum Aquifer, the sole source of our drinking water, and other related issues.

BACKGROUND

The Centennial Clean Water Act required a legislative review of the Act's grant fund allocation formula in 1995. Following this review, the allocation formula for the grant program was revised. The Legislature has authorized the Department of Ecology(DOE) to offer the Spokane region an Extended Payment Grant(provided for in the RCW) for a total of $10,000,000 for the FY 95-97 biennium, with an anticipated legislative biennial appropriation of $10,000,000 during each of the next 9 biennia for a total 20-year appropriation of $100,000,000. This would commit the state to provide the region with $5,000,000 annually over the twenty year period for sewering needs which apply to the Act's goals. For this region, the objective is the prevention of contamination of the Spokane-Rathdrum Aquifer. The DOE proposes to condition this grant on the following: 1)the region must provide a definitive project scope and goal which addresses the total sewering needs including aquifer protection and surface water considerations; 2) the project must demonstrate a pressing need or urgency to provide justification for the Extended Payment Grant; and 3) the project's urgency will require an accelerated construction schedule with a completion date of approximately fifteen years after start.

5

AGENDA DATUM SHEET FOR COUNCIL MEETING OF: June 10, 1996

● For Action
○ For Information

Name of Submitting Department	Contact Person	Phone Ext.
Planning & Engineering Svcs.	Irving Reed	6270

AGENDA CATEGORY
● Consent Session
0 Policy Session
0 Hearings Session
0 Mayor/Council Reports

ITEM CATEGORY
0 Report
● Contract
0 Resolution
0 Emergency Ord.
0 Final Reading Ord.
0 First Reading Ord.
0 Mayoral Appointments
0 Report of City Manager

RECOMMENDATION
0 Accept
● Approve
0 Receive
0 Deny
0 Place on File
0 Set Hrg./Review Date for: _____
0 Defer/Continue To: _____
0 Pass Ordinance
0 Adopt
0 Council Direction

COUNCIL COMMITTEES:	APPROVAL	DISAPPROVAL
Public Safety	—	—
Finance	—	—
Public Works	X	—
Neighborhood	—	—

NEIGHBORHOOD ASSOCIATION NOTIFIED BY SUBMITTING DEPARTMENT:
Name of Assn. _____
Assn. Notified _____ Assn. Unidentified _____
Area Manager _____

Eng./LID # _____ Bid # _____ Clerk's Files: # OPR 96-466 # _____

AGENDA WORDING: Interlocal Cooperative Agreement between City of Spokane and Spokane County pertaining to wastewater and stormwater issues, leading to a mutual and cooperative application for Centennial Clean Water grants from the State Department of Ecology.

BACKGROUND: Since the County got into the sewer business in the early 1980's, there have been several unresolved issues between the City and County that have stifled a cooperative approach to the regions problems. City and County staffs have worked out the proposed interlocal agreement which will settle the more contentious issues (APA funding, franchises, etc) and set the stage for a more cooperative approach to our mutual problems of the future. County Commissioners approved the agreement on 28 May 1996. The Public Works Committee has reviewed this agreement.

RECOMMENDATION: Approve the Interlocal Cooperative Agreement.

FISCAL IMPACT: None **BUDGET ACCOUNT #:** _____

ATTACHMENTS: /X/ On file in Office of City Clerk /_/ Include in Packets
(List Attachments) Agreement

Signatures of submitting officers (sign legibly):

Dir. Planning & Engineering Services

Finance

Legal

City Manager

COUNCIL ACTION:

APPROVED BY
SPOKANE CITY COUNCIL:
June 10, 1996
CMC/AAE. SPOKANE CITY CLERK
acting

SPOKANE

DISTRIBUTION AFTER COUNCIL ACTION:
Planning & Engineering Svcs.
✓Capital Programs (Gerry Shrope)
Construction Services (Brad Blegen)
Wastewater Mgmt (Gale Olrich)
AAF
(The law requires that this agreement be filed with the Spokane County Auditor - per B. Beaumier.)

Condition 1 implies that no further funding within this grant will be available toward project or legislative goals unless applications are processed through a state-wide competitive process. There would be no further grants available for construction of collector/lateral sewers. Condition 1 further implies that there is an interconnect between the water quality requirements for discharges to the river and aquifer protection. This concept has been used previously in obtaining grant funding for both combined sewer overflow(CSO) and stormwater planning. Conditions 2 and 3 address the intent of the Extended Payment Grant legislation which is to provide funding assistance for high cost projects which have an urgent need.

The City and County aquifer protection (sewering) costs for the collection system construction alone will exceed the grant eligible amount of $200,000,000(based upon a 50% local match requirement). There is no consideration in this DOE proposal for treatment plant expansion and/or modification to meet increased flows and regulatory requirements. There is no provision for continued efforts to reduce the CSO to the river, and there are no provisions for addressing regional stormwater problems. Treatment plant needs could be in the hundreds of millions of dollars, depending upon federal and state regulatory requirements and growth. It is important for the City and County to approach the DOE in a united and coordinated manner in effort to gain some flexibility in the grant program to allow for these additional needs.

RECITALS

WHEREAS, there are significant numbers of unsewered areas within the metropolitan area of Spokane County contributing to the potential degradation of the Spokane-Rathdrum Aquifer; and

WHEREAS, it is in the best interest of the citizens of the metropolitan area of Spokane County to have the sewering programs of the city and county completed as soon as practicable; and

WHEREAS, the Washington State Department of Ecology has indicated there is an anticipated $100,000,000 Extended Payment Grant available to the Spokane region for aquifer protection which will assist in reducing the cost to those areas needing sewers; and

WHEREAS, there are issues between the City of Spokane and Spokane County that need to be resolved in order for the two agencies to work cooperatively in pursuing this grant;

NOW THEREFORE, the City of Spokane and Spokane County agree:

DEFINITIONS

City shall mean the City of Spokane.

County shall mean Spokane County.

Grant shall mean the Extended Payment Grant offered under the administration of the Washington State Department of Ecology.

MGD shall mean Million Gallons per Day.

COOPERATIVE PROVISIONS

1. PURPOSE OF THIS AGREEMENT. The purpose of this agreement is to establish the conditions and understandings under which the City and County pursue the Grant for the region's sewering, treatment plant, and other related needs.

2. GRANT SHARE. It is agreed that the Grant payment shall be shared by the two agencies on a 75/25% basis, with the County receiving the larger share. In the event that either agency cannot productively utilize its share, the City and County agree to cooperatively reallocate the unused funds.

3. AQUIFER PROTECTION FUNDS. The City and County agree that, starting in 1996, the County will remit $500,000 annually to the City as their share of the funds collected. The use of APA funds by either agency is subject to the limitations of Chapter 36.36 of the Revised Code of Washington and the County's enabling legislation. Within such limitations, the use of APA funds by either agency lies within that agency's sole discretion and judgment. The County will issue a check to the City in December of each year. If APA funds are not collected, this clause will not be effective.

4. CAPACITY CHARGE FOR ADDITIONAL CONNECTIONS. The City and County agree to negotiate a connection charge or operations and maintenance fee for the additional connections made by the County to the City's collection system which were not included in the existing Interlocal agreement. Specifically, these connections are the North Valley Interceptor(NVI) and the North Spokane Interceptor(NSI). This amendment to the existing Interlocal agreement shall be completed by December 31, 1997.

5. FRANCHISE. The City and County agree that execution of this agreement constitutes a Franchise Agreement for the installation of water and/or sewer facilities in County Rights of Way in the Moran Prairie area of the unincorporated County remaining to be sewered by the City. This is in recognition of the previously approved franchises in that area for the purpose of sewer and water construction and the existing responsibility of the City to provide that area with water and sewer service. Technical issues regarding roadway repair, compaction and the like will be coordinated between the appropriate City and County departments according to County standards in use for similar projects.

6. ANNEXATION COVENANTS. The City and County agree to limit annexation covenant requirements to new developments within the City's utility service area which receive City water and/or sewer service. Covenants will not be required for utility services when provided to existing structures.

7. FUTURE FLOW REQUIREMENTS. The City and County agree to negotiate at some future date the projected treatment plant capacity requirements of the County in coordination with the projected City treatment plant capacity needs. These collective needs will be better known at the completion of the City's Wastewater Facility Plan and the County's Comprehensive Wastewater Plan. It is further agreed that until these total needs are further identified, service capacity allocations will remain as currently agreed upon(10 MGD for the County), although by mutual agreement, the two agencies may agree to serve outside their respective service area boundaries if it is more appropriate to do so. Rather than addressing the capacity issue with each out-of-service area connection that may be made, the net resulting capacity needs will be determined in conjunction with the final capacity calculations for each agency.

8. PROGRAM COORDINATION. Given the finite capacity of the Wastewater Treatment Plant and the uncertainties of future regulatory treatment requirements, it is imperative that the City and County include each other in any plans, discussions or programs which will affect the treatment plant capacity or capability to satisfactorily process wastewater. In that regard, the City and County agree to such cooperation and coordination and further agree to annually review and coordinate their respective capital sewer plans and programs. The respective documents shall be submitted to each agency prior to May 1st of each year. They shall contain at least the following six years of programmed sewer projects. Earlier staff coordination and consultation is expected.

9. FUNDING FOR FUTURE TREATMENT PLANT MODIFICATION/EXPANSION. The City and County agree to develop a funding plan and mechanism in 1996-97 to avoid significant and sharp rate increases that may result from future capacity and regulatory requirements. The final levels of funding needed by each agency can be better determined after the studies and plans identified in paragraph 7 above are completed; however, it is considered important and prudent to initiate such a funding plan before final needs and costs are determined.

10. STORMWATER PLANNING AND PROJECTS. In recognition that both agencies must work cooperatively to determine and solve the regional stormwater problems, the City and County agree to jointly study, plan and fund stormwater projects that include areas within the City boundaries as well as in the unincorporated areas of the County.

For the purposes of the Glenrose Watershed Study, and other studies as may be required and/or appropriate, the City and County agree on the following parameters governing the cost-sharing of this study.

- Land area, measured or approximated, in square feet or acreage, whichever is most appropriate, will be the factor to determine the cost of each agency.

- Expenses pertaining to or relevant to land area lying within the corporate boundaries of the City will be borne by the City.

- Expenses pertaining to or relevant to land area lying only in the unincorporated area of the County, and not affected by the Urban Growth Area boundary, will be borne by the County.

If the Urban Growth Area boundary, as determined in the Growth Management Act process, is positioned outside the present City limits, the City agrees to fund that portion of the study pertaining to the area lying within the City's Urban Growth Area if it is annexed to the City within five years of establishment of the UGA boundary; provided, such funding will be prorated with the County depending upon when the annexation is finalized. For example, if the annexation takes place at the first year mark, the City will bear 80% of the study cost for that area annexed. If it takes place at the fourth year, the City will be responsible for 20%.

In future studies, the City and County will coordinate and agree on the Scope of Work's common requirements. Cost of those common requirements will be allocated according the above parameters. Special or unique requirements of either agency will be borne by that agency.

Project costs resulting from the above studies will be determined on a case-by-case basis depending upon the relative benefits to each agency.

11. <u>GENERAL</u>

A. Maintenance of Records.

Both City and County shall make available to each other or the Washington State Auditor, if requested, at any time during their normal business hours, all records, books or pertinent information which each agency shall have kept in conjunction with this agreement.

B. Assignment

Both City and County agree that neither may assign any interest in this agreement without the written permission of the other.

C. Waiver

No officer, employee or agent of the City or County has the power, right or authority to waive any of the conditions or provisions of this agreement. No waiver of any breach of this agreement shall be held to be a waiver of any other or subsequent breach. Failure of either the City or County to enforce at any time any of the provisions herein, or to require at any time performance by the other of any provision herein, shall in no way be construed to be a waiver of such provisions nor in any way affect the validity of this agreement or any part thereto, or the right of either to hereafter enforce each and every such provision.

D. Notices

All notices called for or provided for in this agreement shall be in writing and must be served on any of the parties either personally or by registered mail, return receipt requested, at their respective addresses at the time of notice. Notices sent by registered mail shall be deemed served when deposited in the United States mail with postage prepaid

E. Headings

The headings used in this agreement have been inserted solely for the purpose of convenience and ready reference. In no way do they purport to and shall not be deemed to define, limit or extend the scope or intent of the captions to which they pertain.

F. All Inclusive Agreement

This agreement contains all of the terms and conditions agreed upon by the City and County. No other understandings, oral or otherwise, regardless of the subject matter of such agreement shall be deemed to exist or to bind either of the parties.

12. PERIOD OF AGREEMENT

A. Duration. This agreement shall be perpetual unless terminated by mutual consent of the City and County.

B. Amendment. Modification or amendment of this agreement shall not occur without the concurrence of both parties.

C. Termination. If this agreement is terminated by mutual consent or otherwise, the County's payment obligation under paragraph 3, is prorated in accord with the number of days elapsed up to the date of termination.

13. ADMINISTRATION

This agreement shall be administered by the City Manager and the County Administrator, or their respective designees.

Dated June 7, 1996

FOR SPOKANE COUNTY, WASHINGTON

ATTEST:

APPROVED AS TO FORM:

County Prosecutor

BOARD OF COMMISSIONERS SPOKANE COUNTY SEAL SPOKANE COUNTY, WA

CITY OF SPOKANE, WASHINGTON

ATTEST:

Terri L Pfister - 6-10-96
Spokane Acting City Clerk

City Manager

APPROVED AS TO FORM:

City Attorney

EXHIBIT 6

TECHNICAL MEMORANDUM

To: Rachael Paschal Osborn
2421 W. Mission
Spokane, WA 99201

From: Joel Massmann, Ph.D., P.E.

Date: October 25, 2004

Subject: "Advanced Wastewater Treatment Technology Workshop"
Prepared by Jim Correll, September 27, 2004

Rachael,

I have reviewed the document referenced above and provide the following comments and responses to the questions from your October 18 e-mail.

Responses of natural biological systems to short-term changes in phosphorus loads

The "instantaneous" phosphorus loading rate is probably less important than a time-averaged rate or load. The appropriate averaging period is probably on the order of a week to a month.

Water quality impacts related to algae in the Spokane River and Long Lake system occur over three general time scales: days, weeks, and months. The shortest time scale is the daily fluctuations or "swings" that occur during a 24-hour period due to photosynthesis and respiration. Although the magnitude of the swing is affected to some degree by the rate of algae growth (which is in turn affected by the phosphorus load) this effect is secondary to other effects such as light, temperature, and average algae concentration. The second time scale relates to the change in the algae concentration or population in the system. This change occurs on the order of weeks. The third time scale relates to the affect of algae on the sediment oxygen demand. This occurs over time scales on the order of months to years.

In terms of phosphorus loading, the second scale (weeks) is probably most important. If algae concentrations are kept low, then the daily swings will not be important and the sediment oxygen demand will eventually be reduced. If algae concentrations respond to phosphorus load over time periods of approximately a week to a month, then this would be the relevant averaging period.

Is a median discharge limit protective?

Given that some type of averaging of effluent concentration is reasonable, the question then becomes the type of average and the averaging period that are most relevant. The technology workshop suggests that seasonal or 30-day medians are appropriate. I would argue strongly that the median effluent concentration is not the correct metric and that if averaging is allowed the mean should be used instead of the median. I would also argue that the relevant averaging period is on the order of 7 to 30 days, as described above, and not "seasonal."

The median is the number in the middle of a set of numbers; that is, half the numbers have values that are greater than the median, and half have values that are less. This is not a particularly relevant number in terms of the phosphorus load to a river system, as illustrated in the example on Table 1. Table 1 lists two sets of numbers that might represent the effluent concentrations during a 30-day period for two different treatment technologies ("A" and "B"). These treatment technologies result in the same median concentration (100 ug/L), but have very different mean values and total loads to the system. Technology "A" has a mean concentration of 100 ug/L and a total load for the month of 1625 pounds of phosphorus while Technology "B" has a mean concentration of 200 ug/L and a total load for the month of 3350 pounds of phosphorus . These two effluent streams have the same median effluent, but they may result in dramatically different impacts in terms of water quality. The median phosphorus effluent is not a relevant number and should not be used to define a treatment standard if the true objective is to control the phosphorus load on the system.

The Bellagio conference and outcome

I did a little research on the Bellagio conference and found a description of the "Bellagio 2003 Statement" in a National Water Research Institute newsletter from the summer of last year. I have attached an excerpt from this newsletter. The Bellagio Statement is on page 2 of the newsletter. The brief description of Orange County's treatment system included on page 2 is also relevant to the Spokane TMDL and might also be of interest to you.

I recognize the names of some of the attendees of the conference – they are internationally known experts. I know Bruce Rittmann from when I was on the faculty at the University of Illinois. He is very knowledgeable and objective in these areas.

The Scientific Approach

The ad-hoc approach used in the initial screening may result in early elimination of technologies that may have merit when evaluated using a more formal approach with a more complete set of metrics. For example, ion exchange (item 15 in Attachment 3 of the workshop report) is eliminated because reverse osmosis is "just as effective" (page 9, paragraph 2) and the membrane bioreactor with reverse osmosis (item 20 in Attachment 3) is eliminated because it is "similar to" reverse osmosis. Reverse osmosis is then ranked low because of costs. I am not an expert in wastewater treatment technology, and I do not know if these other technologies would be cost effective as compared to reverse osmosis. However, I am familiar with approaches used in decision analysis and alternative selection processes. This type of ad hoc, sequential elimination can result in sub-optimal decisions.

A technology has been identified to achieve the required treatment level of 10 ug/L: microfiltration with reverse osmosis. This technology can be used to reduce concentrations to very low levels by putting treatment units in a series or by re-routing the treated water back through the system. Based on what I do know about this technology, there are no insurmountable technological issues related to the scale or size of the treatment system – it is one of costs. A description of the Orange County system is available at http://www.gwrsystem.com/index.html

Table 1 – Example of effluent streams with the same median but with different loads

	Technology "A"			Technology "B"	
Date	C (ug/L)	Load[1] (lbs/day)		C (ug/L)	Load[1] (lbs/day)
1-Sep	99	54		99	54
2-Sep	101	54		101	54
3-Sep	107	58		650	352
4-Sep	103	56		100	54
5-Sep	94	51		94	51
6-Sep	108	59		108	59
7-Sep	118	64		400	217
8-Sep	88	48		88	48
9-Sep	115	62		115	62
10-Sep	92	50		92	50
11-Sep	84	45		600	325
12-Sep	88	47		88	47
13-Sep	105	57		105	57
14-Sep	93	50		93	50
15-Sep	114	62		114	62
16-Sep	98	53		98	53
17-Sep	117	63		117	63
18-Sep	117	63		500	271
19-Sep	86	47		86	47
20-Sep	81	44		81	44
21-Sep	85	46		85	46
22-Sep	88	48		88	48
23-Sep	89	48		89	48
24-Sep	105	57		105	57
25-Sep	117	63		800	433
26-Sep	103	56		103	56
27-Sep	118	64		700	379
28-Sep	107	58		107	58
29-Sep	100	54		100	54
30-Sep	80	44		80	44
Mean	**100**			**200**	
Median	**100**			**100**	
Total Load:		**1625 lbs**			**3243 lbs.**

[1]Total load is calculated assuming a discharge of 100 cubic feet per second

KETA WATERS LLC
6520 East Mercer Way
Mercer Island, WA 98040

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joel@KetaWaters.com

JOEL MASSMANN, Ph.D, P.E.
Principal Engineer and Owner

Dr. Massmann has over twenty years of experience as an engineering consultant and works with a wide spectrum of public- and private-sector clients, including industry, government agencies, tribes, and environmental groups. Dr. Massmann received B.S. and M.S. degrees in Civil Engineering from the Ohio State University and the Ph.D. degree in from the University of British Columbia. He has taught courses in civil engineering at the University of Washington, the University of Illinois, and Michigan Technological University. Dr. Massmann's work on environmental and water resources issues has received national recognition, including the Rudolf Hering Medal from the American Society of Civil Engineering in 1990 and the Presidential Young Investigator Award from the National Science Foundation in 1988. He has served as a consultant to the U.S. EPA Science Advisory Board (1992-1997) and as a member of the Environmental Restoration Priority System Panel for the National Research Council (1992-1994). He has also served as a consultant to the Finnish Ministry of the Environment and to the Swedish Nuclear Fuel and Waste Management Company (SKB). Professor Massmann also served on the Columbia River Comprehensive Impact Assessment Peer Review Committee (1995-1997) and on the Hanford Advisory Board (1999-2001). He was appointed to the Fate and Transport Subcommittee of the Washington Department of Ecology Science Advisory Board (1996-2000) and assisted them in developing risk-based clean-up standards at contaminated sites. He also served on the Washington Department of Ecology Technical Advisory Group charged with establishing the standards for review of applications for underground artificial storage projects (2000-2002) and is currently a member of the Mercer Island Utility Board.

Academic background

Ph.D. Hydrology	University of British Columbia	1987
M.S., Civil Engineering	The Ohio State University	1981
B.S., Civil Engineering	The Ohio State University	1980

Professional history

Principal Engineer and Owner, Keta Waters LLC, Mercer Island, Washington, 2002-current.

Associate Professor with Tenure, Department of Civil Engineering, University of Washington, Seattle, Washington, 1993-2002.

Visiting Lecturer, Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand, 1997-98 (sabbatical leave).

Assistant Professor, Department of Civil Engineering, University of Washington, Seattle, Washington, 1992-93.

Assistant Professor, Departments of Geology and Civil Engineering, University of Illinois, Champaign-Urbana, Illinois, 1990-92.

Assistant Professor, Department of Geological Engineering, Michigan Technological University, Houghton, Michigan, 1987-90.

Senior Project Engineer, Hart Crowser, Seattle, Washington, 1985-87.

Selected Consulting Experience – See attached table.

Professional Society and Other Service

Appointed to U.S. EPA Science Advisory Board, Consultant, 1992-1997.

Appointed to Environmental Restoration Priority System Panel, National Research Council, Commission on Geosciences, Environment, and Resources, 1992-1994

Appointed to Columbia River Comprehensive Impact Assessment Peer Review Committee, 1995-1997

Appointed to Washington Dept. of Ecology, Science Advisory Board, Fate and Transport Subcommittee, 1996-2000.

Appointed to Hanford Advisory Board, Alternate, 1999-2001

Appointed to Washington Dept. of Ecology, Technical Advisory Group on Aquifer Storage and Recovery, 2000-2002

Associate Editor, *Water Resources Research*, published by American Geophysical Union, 2000-2002.

Appointed to Mercer Island Utility Board, 2004-2008.

Professional licenses

Professional Engineer #36101, State of Michigan
Professional Engineer #74912, State of Oregon
Professional Engineer #40749, State of Washington,
Water System Distribution Manager #9819, State of Washington
Water Treatment Plant Operator, #9819, State of Washington

Professional Society Membership

American Geophysical Union
American Society of Civil Engineers
Environmental and Water Resources Institute
American Water Works Association

Selected Refereed Journal Publications –

Sixteen articles related to groundwater hydrology published in refereed journals. List provided upon request.

Selected Book Chapters

Five book chapters related to groundwater hydrology and subsurface flow and transport. List provided upon request.

Selected Invited Lectures and Seminars

"*Management Decisions Impacted by Groundwater-Surface Water Interactio*ns," invited presentation at the American Geophysical Union Annual National Meeting, San Francisco, December, 2002.

"*Effects of Salmon on Groundwater Resource Development*," presented to the Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand, May,1998 and presented to the Department of Applied Earth Sciences, Stanford University, September 30, 1998.

Table 2 - Summary of selected projects and services.

Prime Contractor*	Client	Years	Location	Brief description of project and services	Decision Analysis	Environmental	Water Resources
Keta Waters	Tulalip Tribes	**2005-present**	Tulalip, WA	Work with Tribal personnel and Indian Health Service to improve the water supply system for the reservation. This project involved evaluating existing supplies, recommending modifications to the existing system, and designing new water supply wells.		X	X
Keta Waters	Muckleshoot Indian Tribe/U.S. EPA	**2006-present**	Auburn, WA	Assess feasibility of water supply from Coal Creek Springs for hatchery operations. Involved evaluating existing spring collection facilities and providing recommendations for locating new wells to increase yield.		X	X
Keta Waters	LOTT Alliance/Brown and Caldwell	**2006-present**	Thurston County, WA	Perform hydrogeological investigations necessary to evaluate the groundwater recharge potential of sites that may be considered for groundwater recharge facilities for reclaimed water.		X	X
Keta Waters	Washington Department of Ecology	**2006-present**	Olympia, WA	Provide peer review of a groundwater flow model for the Spokane Valley Rathdrum Prairie (SVRP) Aquifer. The SVRP Aquifer study is intended to provide an improved scientific basis for evaluating water management alternatives for the SVRP aquifer and Spokane and Little Spokane Rivers. The SVRP Aquifer Study is a cooperative effort between the State of Idaho, Washington and the United States Geological Survey.		X	X
Keta Waters	Tulalip Tribes	**2005-present**	Tulalip, WA	Provide assistance as an expert to assist the Tribes in developing, negotiating, and implementing strategies to protect tribal treaty and reserved water rights.		X	X
Keta Waters	Suquamish Tribes	**2005-present**	Suquamish, WA	Provide hydrogeologic conditions and water rights evaluation services.		X	X
Keta Waters	Squaxin Island Tribes	**2006**	Shelton, WA	Develop a groundwater flow model and derive opinions about the relationship between surface water, groundwater, and water withdrawals in the Woodland Creek watershed		X	X

Prime Contractor*	Client	Years	Location	Brief description of project and services	Decision Analysis	Environmental	Water Resources
Keta Waters	Swinomish Indian Tribe	**2004-2005**	La Conner, WA	Evaluate groundwater-surface interactions in the Lower Skagit River basin, with particular focus on effects of exempt wells on flow in tributaries to the Skagit River.			X
Keta Waters	Muckleshoot Indian Tribe/U.S. EPA	**2002-present**	Auburn, WA	Provide technical analysis and modeling for the White River Total Maximum Daily Load (TMDL) assessment. This TMDL involves limiting phosphorus input to the White River to address issues related to periphyton growth and high pH.	X	X	X
Keta Waters	Muckleshoot Indian Tribe	**2000-present**	Auburn, WA	Provide technical analysis and related potential impacts of the Lake Tapps Reservoir Water Right.	X	X	X
Aspect Consulting	Gila River Indian Community	**2004-2006**	Gila River, AZ	Provide technical support to help plan strategic and operational delivery of water to meet agricultural, municipal, and industrial uses. Assist in developing a groundwater model to simulate both quantity and quality of groundwater resources, including potential effects of salt build-up due to irrigation practices.	X		X
Keta Waters	Muckleshoot Indian Tribe	**1995-present**	Auburn, WA	Provide technical analysis, advice, and expert testimony related to groundwater resource development and interactions between groundwater and surface water. As part of this work, Dr. Massmann has evaluated groundwater supply systems for fourteen utilities and cities in King, Pierce, and Snohomish Counties. His most recent activities have related to review of the aquifer storage and recovery projects on the Sammamish Plateau in King County, Washington.			X
Keta Waters	Illahee Forest Preserve and the Port of Illahee	**2005-2006**	Kitsap County, WA	Evaluate impacts of development on groundwater and surface water resources in the Illahee Forest Preserve.		X	X
Keta Waters	Black Hills Audubon Society	**2005**	Thurston County, WA	Assist in developing a long-term groundwater monitoring plan to help protect wetlands adjacent to gravel mining at the Maytown Aggregates site.			X

Prime Contractor*	Client	Years	Location	Brief description of project and services	Decision Analysis	Environmental	Water Resources
Keta Waters	Sierra Club Upper Columbia River Group	2004-2005	Spokane, WA	Provide technical analysis and review of surface water modeling related to the Spokane River Total Maximum Daily Load (TMDL) for dissolved oxygen in the Spokane River and Long Lake.		X	X
Pacific Groundwater Group	Arkema (formerly Atofina Chemicals)	2003-2005	Tacoma, WA	Evaluate effects of upland groundwater contamination on sediment quality under tidally-influenced conditions. Work with state and federal regulators to gain approval for in-situ stabilization activities. Evaluate impact of inter-tidal habit restoration activities on groundwater flow and transport.		X	
Northwest Hydraulic Consultants	Shared Strategy for Puget Sound	2005	Olympic Peninsula, WA	Instream Flow Assessment Pilot Project aimed at assessing human impacts on stream flow and salmon populations within subbasins of the Stillaguamish Watershed.			X
Pacific Groundwater Group	City of Milwaukie, Oregon	2003-2005	Milwaukie, Oregon	Provide technical analysis, advice, and expert testimony related to groundwater contamination which has affected the City's municipal water supply system.		X	X
Pacific Groundwater Group	Port of Seattle	2004-2005	Seattle-Tacoma, WA	Provide peer review of the groundwater flow and transport models developed for the Port of Seattle to assess contaminant migration at the SeaTac airport		X	
J. Massmann	State of Washington Attorney General	2003-2004	Olympia, WA	Provide technical analysis, advice, and expert testimony related to a groundwater and surface water contamination site in Spokane, WA.	X	X	
J. Massmann	Muckleshoot Indian Tribe	2002-2004	Auburn, WA	Assist in developing habitat models for WRIA's 8, 9, and 10. Dr. Massmann's responsibilities included developing models for simulating flow and temperature in main-stem channels and tributaries.		X	X
J. Massmann	American Public Works Association	2003	Olympia, WA	Teach short course on design of storm water infiltration facilities and implementation of the Washington Department of Ecology's 2001 Stormwater Manual			X
Inter-Fluve and Pacific Groundwater Group	Public Utility District #1 of Whatcom County.	2003	Bellingham, WA	WRIA 1 Multipurpose Storage Grant, Grant G0300131 awarded by the Washington Department of Ecology. Evaluated projects related to groundwater storage and groundwater/surface water interactions, including converting surface water diversions to groundwater withdrawals and augmenting flow with groundwater.			X

Prime Contractor*	Client	Years	Location	Brief description of project and services	Decision Analysis	Environmental	Water Resources
Farella Braun & Martel, San Francisco	Confidential	2000-2001	San Francisco, CA	Evaluate the hydrogeology and groundwater flow systems at several sites that provide spring water. Assessed compliance with regulations established by the Food and Drug Administration for spring waters			X
Brown and Caldwell	Orange County Sanitation District and Santa Ana Watershed Project Authority	2001-2002	Irvine, CA	Member of an expert panel convened to evaluate alternatives for the Santa Ana River Interceptor Expanded Alternatives Study. This project looked at various alternatives for constructing an interceptor sewer line along the Santa Ana River. My role was as an expert in hydrology and applications of decision analysis.	X		
J. Massmann	Thistledown Farms	2001	Eugene, OR	Evaluate effects of dewatering activities associated with a proposed gravel mine and evaluate proposed mitigation of these de-watering activities through the use of infiltration trenches.		X	X
Planning and Management Consultants, Ltd.	U.S. Army Corp of Engineers	2000-2001	Norfolk, VA	Evaluate the risk of water shortages in the Lower Peninsula, Virginia, including a review of future water use in the service area of a consortium of water utilities representing Newport News, Hampton, Poquoson, Williamsburg, York County, and James City County, Virginia. It was my responsibility to review and evaluate studies aimed at estimating the groundwater yield for these utilities	X		X
University of Washington	U.S. Department of Energy	1999-2000	Richland, WA	Use decision analysis techniques to determine if a partitioning interwell tracer test (PITT) at the Z-9 Trench in the Hanford Reservation. This project involved quantifying the value of information related to site remediation activities.	X	X	
J. Massmann	Muckleshoot Indian Tribe	2000	Auburn, WA	Evaluated impacts of the White River Amphitheater on groundwater resources and water supply. Interacted with representatives from the National Marine Fisheries Services to obtain necessary approval and permits related to water resource impacts.			X

Prime Contractor*	Client	Years	Location	Brief description of project and services	Decision Analysis	Environmental	Water Resources
Boateng Associates	Atofina Chemicals	1999-2000	Tacoma, WA	Assess the performance of groundwater remediation activities along the Hylebos Waterway. These remediation activities include a barrier wall and groundwater extraction system.		X	
Robertson, Monagle, Eastaugh	Homer Electric Association	1999	Anchorage, AK	Review analyses aimed at estimating impacts of groundwater contamination on construction costs at adjacent properties.		X	
J. Massmann	Portland Water Bureau	1998-1999.	Portland, Oregon	Provide technical advice related to assessing the vulnerability of their South Columbia Wellfield to surface contamination. This is a 100 MGD system that is located beneath an industrialized area.	X		X
University of Washington	City of Seattle, Office of Economic Development	1997-1998	Seattle, WA	Duwamish Coalition Hydrogeologic Pathways Project. Developed three-dimensional groundwater flow model for the Duwamish River industrial corridor			X
Foster-Wheeler Environmental	Washington Department of Ecology	1996-1997	Olympia, WA	Assist in developing risk-based clean-up standards at contaminated sites for the Washington Department of Ecology, including development of soil cleanup standards to protect in-door air quality.	X	X	
Parametrix, Inc.	Kitsap County	1996	Bellevue, WA	Provide technical review and design recommendations for landfill gas control system at the Hansville Landfill.		X	
J. Massmann	U.S. Department of Justice	1996	Washington D.C.	Provide expertise regarding groundwater movement and contaminant transport from the Whidbey Island Naval Air Station, Washington		X	
J. Massmann	Westinghouse Savannah River Co.	1995-2000	Aiken, SC	Provide technical review and recommendations for groundwater remediation activities at the F- and H-area seepage basins on the Department of Energy's Savannah River site.		X	
Sperling-Hansen Associates	City of Penticton,	1995-1996	Penticton, British Columbia.	Provide technical review and advise on approaches for extinguishing subsurface fires at the Campbell Mountain Landfill.	X	X	

Prime Contractor*	Client	Years	Location	Brief description of project and services	Decision Analysis	Environmental	Water Resources
J. Massmann	Baltimore Gas and Electric	1993-1995	Baltimore, MD	Provide technical review of subsurface contaminant transport modeling activities associated with site-remediation at Spring Gardens gasification facility. Evaluation included interactions between groundwater and the Chesapeake Bay.	X	X	
Landau Associates	Boeing	1995	Seattle, WA	Provide technical review and advise on gas extraction activities at the Boeing facility in Gresham, Oregon.		X	
J. Massmann	GATX Transportation	1994	Chicago, IL	Facilitate implementation of decision analysis and observational approaches for conducting remedial actions at Saegertown Industrial Site, Pennsylvania	X	X	
Burns and McDonnell	Harcross Chemical	1994	Kansas City, MO	Provide technical review and advise on gas extraction activities.		X	
Jacques Whitford Environmental	Government of Newfoundland and Labrador	1994	Gander, New Foundland	Provide technical review and advise on gas extraction activities for cleaning soils beneath the Trans-Canada highway.		X	
Tampere University	Finnish Ministry of the Environment	1993-1994	Helsinki, Finland	Provide technical review of field characterization activities at a site with chlorinated solvent contamination in Hattulla, Finland.		X	
Riddell, Williams, Bullitt & Walkinshaw	Confidential	1993	Seattle, WA	Provide expertise regarding groundwater and contaminant transport for a CERCLA hazardous waste site contaminated with dense non-aqueous phase liquids.		X	
J. Massmann	Argonne National Laboratory	1992-1993	Argonne, Illinois	Review plans developed by the Energy Systems Division for conducting pilot-scale studies related to site remediation and vapor extraction design		X	
Geraghty-Miller, Inc	U.S. Department of Energy	1989-1993	Reston, VA	Application of decision analysis and groundwater modeling techniques in groundwater extraction design for the Savannah River site, Aiken, South Carolina	X	X	
U.P. Engineering	Baraga County	1988-1989	Houghton, Michigan	Evaluation of regional groundwater flow systems for municipal groundwater supply.			X
Heller, Ehrman, White & McAuliffe	Confidential	1988	Seattle, WA	Provide expertise regarding groundwater and contaminant transport for a CERCLA hazardous waste site.		X	
Hart Crowser, Inc.	Crown Zellerbach Corporation	1986-1987	Camas, WA	Evaluation of groundwater flow and leachate impacts for Lady Island Landfill, a wood-waste disposal facility located on an island in the Columbia River		X	

Prime Contractor*	Client	Years	Location	Brief description of project and services	Decision Analysis	Environmental	Water Resources
Hart Crowser, Inc.	Aluminum Company of America (ALCOA)	1986-1987	Vancouver, WA	Design and implement a remedial investigation and feasibility study for groundwater contamination from waste piles contaminated with arsenic.		X	
Hart Crowser, Inc.	Washington Department of Ecology	1985-1987	Kent, WA	Develop and implement a sampling and work plan for completing the remedial investigation and feasibility study for the landfill, including evaluating procedures and methods used to assess landfill gas migration and design emergency gas control activities.		X	
Hart Crowser, Inc.	City of Anchorage	1990-1992	Anchorage, AK	Provide technical review and design recommendations for landfill gas control system at the Merrill Field Landfill. This landfill underlies an airport and light-industrial developments.		X	
Hart Crowser, Inc.	Shell Oil Company	1986-1987	Tacoma, WA	Design and install a petroleum recovery system to clean groundwater contaminated with petroleum products. This site is located along the City Waterway and was influenced by tidal fluctuations.		X	

*The prime contractor is identified for those projects where Dr. Massmann was a sub-consultant. For those projects that list Dr. Massmann as the prime contractor, he contracted directly with the client.

Sierra Club
Spokane River Dissolved Oxygen TMDL
Dispute Resolution Documents

3.1 Letter, James Bellatty, Dept. of Ecology to Bruce Rawls, Spokane County (3-14-08)

COPY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

RECEIVED
MAR 17 2008
SPOKANE COUNTY UTILITIES

March 14, 2008

Mr. Bruce Rawls, P.E.
Utilities Division
Spokane County Public Works Dept.
1026 W. Broadway
Spokane, WA. 99260-0430

Dear Mr. Rawls:

RE: Spokane County Wastewater Facilities Plan Amendment – Revised Final Draft of December 2007

The Wastewater Facilities Planning document, listed above, for a Spokane County Regional Wastewater Treatment Facility has been reviewed. The selected, cost-effective alternative is described in Chapter 9. The alternative briefly consists of treatment using enhanced biological nutrient removal incorporating membranes reactors, UV disinfection, sludge thickening, digestion, dewatering, odor control facilities, two pumping stations with force mains and outfall to the Spokane River.

The package submitted includes the analysis of and technology selection for the proposed Spokane County Regional Water Reclamation Facility (SCRWRF) and the County's Delta Elimination Plan. The technology selected does satisfactorily demonstrate that SCRWRF will achieve the desired effluent quality required by the "Foundational Concepts for the Spokane River and Lake Spokane DO TMDL" and the draft Spokane River and Lake Spokane DO TMDL. The County's Delta Elimination Plan does have a diverse and robust plan providing reasonable assurances the County facility's waste load allocations in the draft Spokane River and Lake Spokane DO TMDL will be in compliance.

Currently, compliance with the phosphorus waste load allocation means the County's Water Reclamation Facilities shall comply with the following effluent limitations:

1) The seasonal average concentration measured at the point of discharge shall be 50 μg/L TP or less, based on the arithmetic mean of daily discharges measured between April 1st and October 31st;

2) Delta Elimination Plan objectives have been sufficiently realized to have and maintain a final equivalent TP concentration of 8 μg/L; and

3) The equivalent mass discharge of total phosphorus shall not exceed a seasonal average (April 1 – October 31) of 0.53 lbs/day. Compliance with effluent limitation numbers 2 and 3 above must be met at the time discharge commences from the SCRWRF and will be determined by the seasonal average (April 1 – October 31) effluent mass discharge combined with any credits from the Delta Elimination Plan.

However, the Spokane River DO TMDL hasn't been yet approved. Also, Ecology presently can give no assurances the final Spokane River DO TMDL will receive approval in a timely manner meeting the needs of Spokane County.

Therefore, in accordance with RCW 90.48.110 and Chapter 173-240 WAC and on behalf of the Department of Ecology, the subject document package is hereby **only** CONDITIONALLY APPROVED as a Wastewater Facilities Plan meeting the requirements of RCW 90.48.110 and Chapter 173-240 WAC.

The conditional approval is based on anticipated compliance with the draft Spokane River and Lake Spokane DO TMDL and on a presumption of no substantive change reducing the waste load allocations for the County's water reclamation facilities. If the final Spokane River and Lake Spokane DO TMDL includes changes that reduce the County's load allocation, the County will be required to submit an amended Wastewater Facilities Plan demonstrating how the County will comply with any reduced waste load allocations.

Additionally, while the wastewater facilities plan suggest possible effluent limitations and many of the suggestions are good, the permit's effluent limitation may or may not be the same.

A copy of the approved document package is enclosed for your project records.

This office is to be notified immediately of any proposed changes or revisions to the approved document. Any such changes or revisions must be issued in the form of addenda, technical appendices, or supplemental reports to the original approved package of documents and must be approved in writing by the Department of Ecology.

The Department of Ecology's review and approval of this document is only to assure compliance and consistency with the appropriate rules, regulations, guidelines, planning and design criteria, terms of the loan agreement, and/or other similar documents and is not to be construed as a quality control check. Nothing in this approval shall be construed as satisfying other applicable federal, state or local statutes, ordinances or regulations.

If you have any questions or need any additional information, please don't hesitate to contact me at (509) 329-3534 or Richard A. Koch, the facilities engineer, at (509)329-3519.

Sincerely,

James M. Bellatty

James M. Bellatty
Water Quality Section Manager
Eastern Regional Office

JMB:RK:eh

Enclosure

cc: Dave Clark, P.E.; HDR Engineering Inc. – Boise
K. David Moss, P.E., Spokane County Utilities
Cindy Price, Financial Manager, WQP/FMS
Richard A. Koch, P.E.; ERO