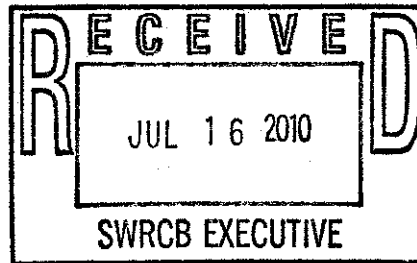




CITY OF KLAMATH FALLS, OREGON

500 KLAMATH AVENUE - P.O. BOX 237
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July 16, 2010

VIA U.S. AND ELECTRONIC MAIL (commentletters@waterboards.ca.gov)

Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Re: Comment Letter – Klamath River - TMDLs

Dear Ms. Townsend:

The City of Klamath Falls ("City") appreciates the opportunity to comment on the State Water Resources Control Board's ("State Board's") proposed approval of an amendment to the Water Quality Control Plan for the North Coast Region ("Plan Amendment"). The Plan Amendment would establish in California: (1) site specific water quality objectives for dissolved oxygen in the Klamath River; (2) an action plan for the Klamath River Total Maximum Daily Loads addressing temperature, dissolved oxygen, nutrient, and microcystin impairments; and (3) an implementation plan for the Klamath and Lost River Basins. The City presents these comments as a Designated Management Agency under the May 2002 Upper Klamath Lake Drainage Total Maximum Daily Load and Water Quality Management Plan ("UKL TMDL") and the Draft Upper Klamath and Lost River Subbasins Total Maximum Daily Load and Water Quality Management Plan ("OR TMDL"), and as a National Pollutant Discharge Elimination System ("NPDES") permittee in Oregon.

The City recognizes and appreciates the significant inter-state collaborative efforts that many parties have made to understand, develop, and promote the health of the Klamath River. We have been an active participant in this process by implementing river protection restoration measures in our own jurisdiction. We have also participated in the development of TMDLs in Oregon and commented on the UKL TMDL and, more recently, the OR TMDL. The City's comments on the OR TMDL are under review by the Oregon Department of Environmental Quality ("DEQ" or "Department"). The comments to DEQ are attached to this letter and incorporated herein by reference.

The below comments focus on the State Board's proposed adoption of the Plan Amendment that would, in turn, adopt the Klamath River Total Maximum Daily Loads and their implementation

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plan ("CA TMDL"). These comments also focus on the *Final Staff Report for the Klamath River Total Maximum Daily Loads Addressing Temperature, Dissolved Oxygen, Nutrient, and Microcystin Impairments in California, the Proposed Site Specific Dissolved Oxygen Objectives for the Klamath River in California, and the Klamath River and Lost River Implementation Plans* ("Staff Report"), which was prepared by the North Coast Regional Water Quality Control Board ("Regional Board"). The Staff Report is part of the administrative record and provides a technical and scientific basis for the Plan Amendment and the CA TMDL.

The City has a long-term interest in the sustainable use and development of the Klamath River and supports TMDLs based on reasonable premises about water quality conditions and measures to promote and protect river health. To that end, the City is very concerned that the CA TMDL is set up for failure because it is built on a flawed building block – that impossibly low phosphorus load reductions will occur in Oregon once the OR TMDL is fully implemented and successful. *See Staff Report at 5-22.* Because the CA TMDL links its success to the flawed OR TMDL, which has not yet been adopted, the CA TMDL is also flawed.

A. The planned phosphorus load reductions at the Stateline are irrational and unreasonable and not likely to occur.

Neither the State Board nor the Regional Board has authority over non-point or point source discharges in Oregon. Further, California does not have any authority to assign an enforceable load allocation to the Stateline. It is the Oregon DEQ that has authority over point and non-point sources in Oregon that discharge into the Klamath River. Nonetheless, it is clear that California authorities will rely on the DEQ to implement non-point and point source controls for constituents like phosphorous to address water quality objectives in California.

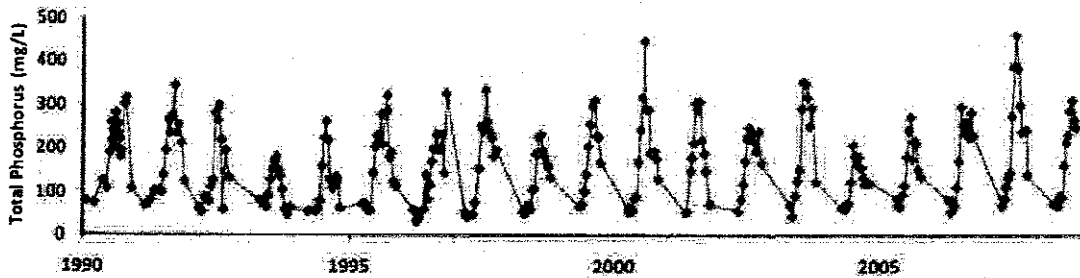
The City raised significant concerns under Section A of its comments to DEQ about the underlying premise of the OR TMDL that, once the UKL TMDL is implemented, only 70,786 pounds of total phosphorus will enter Lake Ewauna from the UKL. As indicated in the OR TMDL Figure 2.38 (replicated below), that is a planned 91 percent reduction in phosphorus loading from the upstream UKL (818,049 pounds to 70,786 pounds), which is extreme, unprecedented and not supported by water quality trends in the region or by similar efforts in other states. This is evident by the OR TMDL Figure 2-18 (replicated below), which is a time series of mean total phosphorus concentrations from the UKL from 1990 through 2002 (the time the UKL TMDL was approved) and through 2009. Over this period, the record does not show reductions in phosphorus loading from the UKL.

Unfortunately, the planned phosphorus load reductions at the Stateline in the CA TMDL are based on the same false premise – the attainment of extremely low phosphorus reductions from the UKL. *See Staff Report at Figure 5.1* (expected annual phosphorus load allocations at Stateline); *see also Plan Amendment at Table 4-16* (nutrient and organic matter daily load allocations at 245+ pounds of phosphorus at Stateline). As the Regional Board acknowledges,

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there is no question that the UKL system is naturally eutrophic, highly variable, and the dominant source of downstream water quality impairments. *See* Staff Report at 4-2, 4-4, 4-14, 9-6; *see also* Plan Amendment at 4-6.00. There is simply no scientific or technical evidence that the presumed and unprecedented reductions of loads from the highly variable and nutrient-rich UKL will ever occur. Therefore there is no rational basis to support California's assumptions about the loads it expects to receive at the Stateline now, in five years, or decades into the future.

Figure 2-18. Time series of mean total phosphorus concentrations from Upper Klamath Lake.

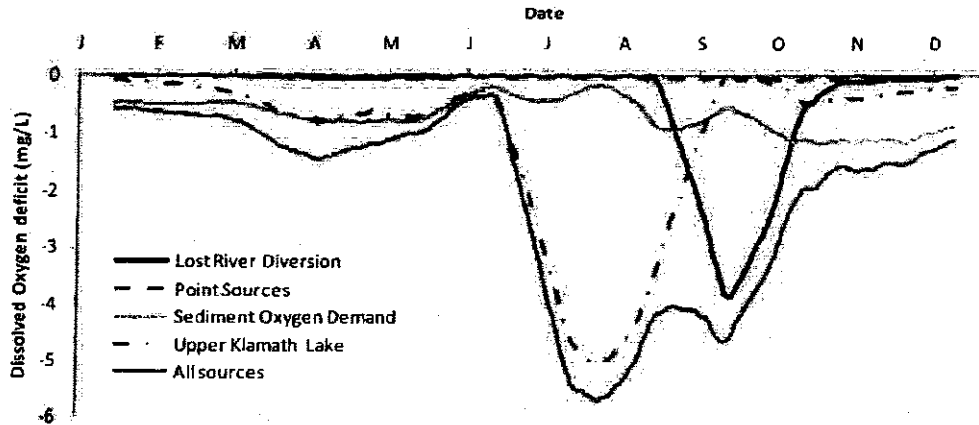


B. The DEQ and Regional and State Boards need to focus on non-point source controls in the UKL system to improve water quality in the Klamath River.

The City appreciates the need for action on the part of Oregonians to protect water resources in California. However, that action needs to be grounded in reasonable expectations of what load reductions are possible and who should bear the costs of those reductions.

The City explained in Section B of its comments to DEQ that water quality data in the Klamath River clearly show that phosphorus loading from the UKL is the dominant factor that has caused the water quality impacts downstream in the Klamath River. This is well illustrated by Figure 2-25 of the OR TMDL (replicated below), which presents the dissolved oxygen impact of sources on the 30-day moving average of DO concentrations at Miller Island, Keno impoundment reach.

Figure 2-25. The dissolved oxygen impact of sources on the 30-day moving average of DO concentrations at Miller Island, Keno impoundment reach.



The figure illustrates that the impact of point sources on water quality is dwarfed by the impact of the UKL and other sources. This is also made clear by the following table, which summarizes

information from Figure 2-26 of the Oregon TMDL to show the approximate phosphorus loadings to the Klamath River in Oregon from the UKL and point sources.

Annual Phosphorus Loadings, 2000		
Source	Total Phosphorus	
	Pounds	Percent of Total
Upper Klamath Lake	818,000	76%
City of Klamath Falls	35,600	3%
South Suburban Sanitary District	21,600	2%
Lost River Diversion	97,600	9%
Strait Drain	96,600	9%

The Staff Report recognizes that the UKL is the dominant source of downstream loading of phosphorus, but then seems to under-emphasize its significance. For instance, Section 6.2 of the Staff Report states in pertinent part:

... Nutrient loads in the Klamath River at stateline originate mainly from Upper Klamath Lake, as well as from the Lost River basin through the Klamath Straits Drain and Lost River Diversion Channel, and to a lesser extent from point sources in Oregon. Nutrients coming from these sources contribute to DO and pH swings downstream, as well as to aquatic plant growth within the river and blue-green algae blooms within the Copco and Iron Gate reservoirs in California.

Such references are misleading and should instead explain that there is a comparatively enormous contribution of nutrients from the UKL which dwarfs contribution from point sources.

Thus, it is clear that compliance with the draft phosphorus Waste Load Allocation ("WLAs") by the City and other point sources in Oregon will not produce a perceptible improvement in river water quality without significant reduction in the UKL loads. In the case of the City, if it is required to meet its draft WLA for phosphorus, such compliance will come at an exorbitant cost with little promise of any measurable water quality improvements.

There is a profound need for authorities in Oregon and California to prioritize non-point source pollution controls in the upstream UKL without requiring point sources to immediately construct high cost treatment facilities with little promise of actually improving water quality. In Sections B and C of the City's Comments to DEQ, the City recommended measures to prioritize non-point source control and to ease undue burdens on point sources (e.g., by not allocating WLAs to point

sources at this time, by setting them higher, by phasing in WLAs over time to prioritize non-point source controls, and/or by implementing WLAs that do not apply year round to expand wastewater treatment options). Such measures would also allow DEQ and NPDES permittees to address significant uncertainties surrounding prospective arsenic standards, and to resolve unknowns as to the effects of the proposed dam decommissioning on Klamath River water quality, before the City is forced to invest significant rate-payer funds into treatment technologies.

The City also expressed to DEQ and reiterates here its strong endorsement for the concept of water quality credit trading as a potential low-cost method to achieve water quality objectives. Such efforts are clearly supported by the Regional Board as a key implementation measure for the CA TMDL. *See Staff Report at 6-66.* However, the City cautions both DEQ and the State and Regional Boards that it is critical that no authority should consider this emerging market when determining what WLA to allocate to a permittee. The fact that there can be water quality trades does not mean there will be and does not justify allocating to a point source a low WLA simply because it might at some point be able to purchase credits from another.

C. The State and Regional Boards should delay the adoption of this TMDL or develop alternative plans based on realistic load reduction scenarios.

The DEQ has not yet adopted the OR TMDL and only recently closed the public comment period. It is illogical for California to adopt the downstream CA TMDL before Oregon adopts its TMDL. After all, the downstream TMDL is based on presumed load allocations at the Stateline that themselves are flawed, not adopted, not enforceable, and subject to change by the DEQ. Assuming these allocations are changed, California's assumptions about loads it expects to receive at the Stateline will be meaningless.

However, given the timing of the proposed adoption of the CA TMDL, the City is very concerned that if California adopts this TMDL, that will undeniably create undue and inappropriate pressure on the part of the DEQ to adopt the OR TMDL and, in the course of doing so, to disregard or dismiss the significant comments that the City has made on the OR TMDL, even if the Department agrees with those comments.

The City recognizes that there is a consent decree that apparently requires that the CA TMDL be adopted in 2010. *See Staff Report at 1-3.* However, the timing for adoption has been extended at least once and, under the circumstances, it should be extended again to adopt the CA TMDL after the load allocations in Oregon are final and enforceable. Otherwise, the adoption of the downstream TMDL could potentially constrain DEQ's independent judgment to adopt appropriate load allocations for the upstream segments of the Klamath River. Alternatively, the State and Regional Boards should integrate into their TMDL an analysis of alternatives that may be feasibly accomplished in the event that the draconian load reduction assumptions at the

Stateline prove unattainable and how downstream load allocations would be adjusted accordingly.

Such actions are consistent with the first principle expressed in the Plan Amendment's list of "Implementation Actions" to address the Stateline load allocations that the Regional Board, the DEQ, and the U.S. Environmental Protection Agency ("EPA") Regions 9 and 10 "[w]ork to develop and implement a joint adaptive management program, including joint time frames for reviewing progress and considering adjustments to TMDLs...." See Plan Amendment at Table 4-18. In the City's view, adaptive management involves developing planning scenarios for what to do if the DEQ and the Regional Board are wrong about the realistic load reductions from the UKL. Given that it is highly unlikely that the phosphorus loads will be reduced as planned at the Stateline, the State and Regional Boards should revise the CA TMDL to adopt more realistic assumptions for load reductions or, in the alternative, to adopt measures that would apply in the event that phosphorus loads are not reduced as expected.

D. Additional technical concerns in the CA TMDL that should be addressed.

As explained under Section E of the City's public comments on the OR TMDL, the WLAs assigned to the City for nitrogen and phosphorus are predicated on model output that is not reliable and, in turn, the WLAs themselves are unreasonable. It appears that the CA TMDL is based on the same modeling output performed in Oregon. See Staff Report at 4-1. The City has requested that the DEQ review and revise its use of the TMDL models and modeling output to ensure that such output can reasonably be relied on to support allocation decisions. The Regional Board should also review and revise its use of the models and modeling output for the CA TMDL to reflect more realistic assumptions about phosphorus loading from the UKL, to the extent such models relied on model output from Oregon.

The City also requests a clarification in the Plan Amendment and a technical revision to the Staff Report. Table 4-18 of the Plan Amendment refers to one implementation action to achieve Stateline allocations by "Explore[ing] engineered treatment options such as treatment wetlands, algae harvesting, and package wastewater treatment systems to reduce nutrient loads to the Klamath River and encourage implementation of these options where feasible...." The City requests clarification as to what is meant by "package wastewater treatment systems." The City also notes that Figure 4.2 of the Staff Report is supposed to present a "Current total nitrogen annual loading diagram," but the diagram should be revised because it presents information about phosphorus loading and not nitrogen loading.


Conclusion

The City is concerned that the Regional and State Boards' proposed Plan Amendment and the CA TMDL are set up for failure. The TMDL erroneously relies on a poor foundation that massive and unprecedented phosphorus load reductions will occur in Oregon when there is no

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scientific or technical basis to support this assumption. The City also strongly encourages the Regional and State Boards to delay finalizing the TMDL until Oregon has established appropriate phosphorus load reduction assumptions for the UKL system and finalized its TMDL for the Klamath River. That way the expected load reductions at the Stateline can be based in reality as opposed to the unrealistic targets set in the OR and CA TMDLs.

Sincerely,



Mark Willrett, P.E.
Director of Public Works
City of Klamath Falls

w/ enclosure (City's public comments on OR Klamath River TMDL)

cc Steve Kirk (DEQ)
Tom Lindley
Steve Higgs
Dick Nichols



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ROTORUA, NEW ZEALAND

May 26, 2010

VIA OVERNIGHT DELIVERY, ELECTRONIC MAIL AND FACSIMILE

Mr. Steve Kirk
Oregon Department of Environmental Quality
DEQ Eastern Region - Bend Office
475 NE Bellevue Drive, Suite 110
Bend, OR 97701
kirk.steve@deq.state.or.us
Facsimile #: (541) 388-8283

Re: Comments on Upper Klamath and Lost River Subbasins Draft TMDL and WQMP

Dear Mr. Kirk:

The City of Klamath Falls ("City") appreciates the opportunity to comment on the Draft Upper Klamath and Lost River Subbasins Total Maximum Daily Load and Water Quality Management Plan, February 2010 ("Klamath TMDL" or "TMDL").¹ The City presents these comments as a Designated Management Agency ("DMA") under the TMDL, a National Pollutant Discharge Elimination System ("NPDES") permittee, and as a steward of the Klamath River.

The City recognizes and appreciates the level of effort that the Oregon Department of Environmental Quality ("Department" or "DEQ") has invested in developing this TMDL. This is a complex river system with a large number of stakeholders and, in our view, the TMDL process, as managed by the Department, has brought a stronger and more collaborative focus among multiple stakeholders to regional watershed-wide management and partnership.

The City expects this partnership to continue and, for its part, will continue its leadership on water quality restoration and protection initiatives, including efforts to address non-point source pollution on City owned-property, education and outreach to residents and business on water quality protection, and our operation and maintenance of the City's sewer and stormwater system and wastewater treatment plant. The City will also continue to implement its responsibilities as a DMA under the May 2002 Upper Klamath Lake Drainage Total Maximum Daily Load and Water Quality Management Plan ("UKL TMDL"), which will compliment its responsibilities as a DMA under the Klamath TMDL.

¹ All documents cited in these public comments are incorporated herein by reference.

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Steve Kirk
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In these comments, we raise concerns about the development and potential promulgation of the TMDL with a specific focus on the impacts on the City as a DMA and an NPDES permittee. We raise these points because we are committed over the long-term to the goal of improved river health and to ensure the investments the City and its rate-payers have made and will continue to make will achieve all our desired environmental outcomes, including a healthy river. We also emphasize here our strong support for the Department's leadership in promoting and facilitating water quality trading. We anticipate that the Klamath River will prove a viable setting to promote this process and other innovative solutions to protect and restore water quality.

Summary of Comments

- The planned phosphorus load reductions from Upper Klamath Lake are extreme, unprecedented, and not likely to occur. The downstream wasteload allocations are therefore unreasonable because they are premised on the false assumption that the upstream load reductions will occur.
- The data clearly show that the phosphorus loading from the Upper Klamath Lake ("UKL") is the dominant factor that has caused the water quality impacts downstream in the Klamath River. Compliance with the phosphorus Wasteload Allocations ("WLAs") by the City and other point sources will not produce a perceptible improvement in river water quality without significant reduction in the UKL loads. DEQ therefore needs to prioritize non-point source pollution controls in the upstream UKL. Downstream point sources should not be issued WLAs at this time or the WLAs should be phased in over time to prioritize non-point source controls.
- Phased in WLAs would also allow DEQ and NPDES permittees to address significant uncertainties surrounding prospective arsenic standards, and to resolve unknowns as to the effects of dam decommissioning on water quality. DEQ should also clarify what controls, if any, will be required for arsenic before it implements the WLAs.
- The water quality data for the portion of the Klamath River from the City of Klamath Falls to Keno Dam indicates that that portion should not be listed as water quality impaired for dissolved oxygen in the winter months and is not water quality impaired for pH during the winter months. Further, agreements between California, Oregon, federal agencies, tribes, and others indicate that the downstream dams will be removed, which, assuming this occurs, would address concerns about nutrients stored in these impoundments. Based on this, the WLAs for nutrients do not need to be set for the winter months. DEQ should further analyze the potential for summer-only WLAs for these nutrients and recognize there are significant environmental and pragmatic benefits to summer-only WLAs.

- It is unclear whether the most appropriate data was used to develop the TMDL. DEQ should better clarify the data relied on to develop the TMDL and data should be presented or available to evaluate in a way it can be compared to other local datasets to determine whether the most appropriate data was selected.
- The WLAs for nitrogen and phosphorus are predicated on model output that is not reliable and, in turn, the WLAs themselves are unreasonable. Key steps in the modeling effort must be re-done to ensure that model output can reasonably be relied on to support allocation decisions.
- There should be no temperature WLA to the City because the Lake Ewauna stretch of the river is not impaired for temperature. Further, small temperature impacts from above the dams do not have any discernable effects below the dams.
- DMA responsibilities should be measured by compliance with TMDL Implementation Plans. Greater attention needs to be placed on the control of non-point source pollution on private lands.
- There are significant opportunities for water quality trading in the Klamath basin. The Department should further analyze the potential for trades within Oregon and also across state lines, and for credit banking.
- DEQ needs to take sufficient time to fully address the concerns raised by stakeholders on this TMDL. The decision-making process should not be unduly influenced by TMDL-related activities in California.
- There are technical and factual errors in the TMDL that should be corrected.

Specific Comments

- A. The planned phosphorus load reductions from Upper Klamath Lake are extreme, unprecedented, and not likely to occur. The downstream wasteload allocations are therefore unreasonable because they are premised on the false assumption that the upstream load reductions will occur.**

The Klamath River is one of the more unique hydrologic systems in North America. Unlike many other rivers, the nutrient phosphorus is naturally very high in the upper reaches of the river, including the Upper Klamath Lake ("UKL"), and considered a cause of downstream algal blooms and associated impacts on stream acidity (pH) and dissolved oxygen (DO). These are the main parameters for which the Klamath River is listed as impaired downstream on the Keno impoundment, which includes the Lake Ewauna segment of the river where the City is located.

The significant upstream loading of phosphorus into the Klamath River is perhaps best understood with reference to Figure 2-38 of the TMDL, which depicts the annual loading of total phosphorus into Lake Ewauna and other segments of the river. For "existing conditions" on the river, DEQ estimates there are 818,049 pounds of phosphorus each year that enter Lake Ewauna from the UKL from natural or anthropogenic sources.

Under the "allocation" segment of the diagram, the Department's analysis assumes that, once the UKL TMDL is implemented, only 70,786 pounds of total phosphorus will enter Lake Ewauna from the UKL. That is a planned 91 percent reduction in phosphorus loading from the upstream UKL, which is extreme, unprecedented and not supported by water quality trends in the region or by similar efforts in other states.

The Department acknowledged this later point when it stated "[d]espite restoration efforts, regular sampling of phosphorus concentrations in Upper Klamath Lake has not revealed a statistically significant temporal trend..." TMDL at 2-27. This is evident by TMDL Figure 2-18, which is a time series of mean total phosphorus concentrations from the UKL from 1990 through 2002 (the time the UKL TMDL was approved) and through 2009. Over this period, the record does not show reductions in phosphorus loading from the UKL.

On related note, the UKL TMDL targets a 40 percent reduction in phosphorus loading into the UKL (see TMDL 2-27), but the Klamath TMDL calls for a 91 percent reduction in phosphorus loading into Lake Ewauna from UKL. We find no explanation in the TMDL as to how the Department could have concluded that the planned 40 percent reduction of phosphorus coming into the UKL would yield a 91 percent reduction for phosphorus coming into Lake Ewauna from UKL. Further, no matter how one looks at the targets, they are highly unlikely to ever be met.

Thus, there is no scientific or technical basis to support DEQ's planned reduction targets for phosphorus entering Lake Ewauna from the UKL. The draft load allocations ("LAs") and waste load allocations ("WLAs") in the Klamath TMDL are based on the premise that these upstream reduction targets will be met. Therefore, these allocations are themselves not supported by sound scientific or technical information.

- B. The data clearly show that the phosphorus loading from the UKL is the dominant factor that has caused the water quality impacts downstream in the Klamath River. Compliance with the phosphorus WLAs by the City and other point sources will not produce a perceptible improvement in river water quality without significant reduction in the UKL loads. DEQ therefore needs to prioritize non-point source pollution controls in the upstream UKL. Downstream point sources should not be issued WLAs at this time or the WLAs should be phased in over time to prioritize non-point source controls. This would also allow DEQ and NPDES permittees to address significant uncertainties surrounding prospective arsenic standards, and to**

resolve unknowns as to the effects of dam decommissioning on water quality. DEQ should also clarify what controls, if any, will be required for arsenic before it implements the WLAs.

1. The cause of water quality impairments is upstream of the City.

The upstream loading from the UKL is the dominant factor affecting downstream water quality. This is demonstrated by TMDL Figure 2-25, which shows the DO impact of various sources of nutrients, including the UKL, on the Keno impoundment, which includes Lake Ewauna. The graph shows that UKL loading is the major influence on this system and the point sources have little or no impact on DO levels. This is confirmed by DEQ when it stated "[t]he combined impact of point sources under current conditions is minimal when compared to other source categories." TMDL at 2-37.

The TMDL nonetheless imposes extremely restrictive phosphorus WLAs on the City. If left as is, the City would be required to meet a burdensome phosphorus WLA simply because it is downstream from other sources in the UKL, which has a phosphorus load that controls algal dynamics in the river and dwarfs the City's load. The City opposes introducing an allocation strategy in the TMDL that will never result in actual improvements to water quality. This allocation process also conflicts with what we view as the purpose of a TMDL, which is to identify the sources of pollutants responsible for impairments and to control those sources.

2. The phosphorus WLA imposes a disproportionate burden on the City.

This concern is magnified by the fact that the City is being asked to reduce its annual total phosphorus discharge from its Spring Street treatment facility from 35,617 pounds (this appears to be a DEQ estimate of phosphorus loading from 2000) down to only 3,496 pounds. TMDL Figure 2-38. This is a 90.2 percent reduction in total phosphorus. The proposed reduction requirement is immense and confusing in light of the fact that, during a February 2009 meeting with the Department, DEQ informed the City that its WLA for phosphorus would likely be capped at the TMDL model input levels based on the City's plant discharge in 2000. However, the actual limit in the TMDL is less than 10 pounds per day or approximately one tenth of the WLA the City anticipated based on the February 2009 meeting. This enormous and restrictive downward adjustment in the WLA remains unexplained in the TMDL.

The City's draft WLA also appears to impose a disproportionate reduction burden on the City as compared to other point sources on Lake Ewauna because other point sources received a higher WLA as compared to their existing discharge. For example, the Collins Forest project phosphorus loading allocation of 1,263 pounds/year is a 14 percent *increase* over existing loading of 1,104 pounds per year. Absent a proper explanation for this increase in allocation, it

is not equitable to set higher WLAs to sources that may not actually need them, while having drastic effects on the City.

3. The financial impacts of the phosphorus WLA create dire economic consequences for the City.

The City has begun financial planning analysis of the cost of complying with the proposed phosphorus WLA. The costs are exceedingly high and, when passed on to ratepayers, would result in profound adverse economic impacts in our community. While it is unclear the exact technology the City could employ to address this small of a WLA (potentially filtration and ultraviolet disinfection), the City estimates the infrastructure to meet this WLA alone would cost at least \$12 million or more.

These TMDL-driven costs are extremely burdensome. When combined with the other near-term costs the City will incur to continue to discharge to the river, the costs are prohibitively high. On this point, the City now faces a staggering \$87 million in near-term costs to address NPDES permit issues and to build capacity to support economic development in the region (\$12 million for TMDL, \$34 million for immediate plant upgrades, \$6 million for plant reliability, \$17 million for operations and growth, and \$18 million to address other water quality criteria).

The anticipated multi-million dollar expenses have already required the City to significantly raise user rates and may require it to increase taxes, and if this TMDL were ever adopted as proposed, this increase could be staggering. These measures could also adversely affect the City's ability to sell bonds to pay for this infrastructure at a reasonable interest rate. If the WLA is left as is, the City is trapped because it must continue to provide its wastewater treatment services at higher treatment costs, but it is likely to confront significant difficulties raising the money to pay for these costs. The City cannot bear this burden alone.

There is no question that important investments need to be made in the City's treatment works, but the simple fact is that the City cannot pay for all these investments all at once. Thus, the projects need to be prioritized and, frankly, the \$12 million cost to meet the phosphorus WLA is the one that should not be made or should be significantly delayed because it is the least likely to address any real water quality objectives.

4. The phosphorus WLA could result in unintended negative consequences.

The phosphorus WLA is set so low that the City must also now seriously consider whether to forgo discharges to the Klamath River all together and to invest its limited resources in an irrigation program. The City estimates an irrigation program would cost at least \$118 million or more, which would be a horrendous economic burden.

While new NPDES and future TMDL-related requirements could ultimately force the City to go down this route, at the moment, the economic and environmental indicators suggest that the City and the Department should do everything they can to ensure that the City can stay in the river. For the City's part, it cannot pay for an irrigation program, which would include the high costs of storing treated effluent through the winter months. Further, the no river discharge option should be avoided if at all possible because the loss of the City's flow could adversely affect downstream water quality and quantity as this discharge likely increases the level of DO concentrations in the river and, in the summer months, the discharge augments flow which likely has beneficial affects on downstream temperature and fisheries.

On a related note, as the Department is aware, the City and Pacific Klamath Energy ("PKE") have an innovative and environmentally beneficial contractual relationship whereby the City sends a significant amount of its treated effluent to the PKE power plant for use as non-contact cooling water for power plant operations. The power plant, in turn, sends this cooling water back to the treatment plant for discharge through the City's outfall on Lake Ewauna. If the TMDL forces the City to cease discharging to Lake Ewauna, this will add costs to the City's treatment operations which will be passed on to all users of the City's system and might affect the City's environmentally beneficial water use agreement with the power plant.

5. DEQ needs to prioritize low-cost non-point source controls and to take an incremental approach to point source reductions.

The most promising and low-cost approach to improve water quality in the Klamath River is to significantly invest in programs to address non-point source pollution in the UKL. However, and unfortunately, as shown in Table 5-3 of the TMDL, one of the Department's first proposed actions to implement the TMDL is to modify NPDES permits to implement the WLAs. This might make sense for river systems where the influence of point sources are clear and significant, but the influence of downstream point sources on the Klamath River are not so clear because, unlike other rivers, the upstream loading of phosphorus from UKL is the primary driver of water quality conditions.

This unique circumstance calls for a different NPDES permitting response and timeline. It is reasonable to take an incremental approach to point source reductions by addressing the lowest cost control mechanisms first (non-point sources) and to evaluate progress over time before forcing substantial reductions from existing point sources. The City therefore requests that the Department either: (1) not issue WLAs for nutrients at this time; (2) set them higher; or (3) phase them in over time. Such an approach would allow the Department (and stakeholders in the basin) to focus first on low-cost non-point source controls and to see their effect on water quality. A phased-in approach could also potentially allow for low-cost nutrient trades between point sources and non-point sources (discussed further below) before new and expensive treatment facilities need be constructed.

A phased-in approach to implementing the WLAs is also necessary due to other circumstances unrelated to the TMDL and beyond the City's control. As the Department is aware, the City faces significant risk that it will soon be required to meet strict controls on the amount of naturally-occurring arsenic that can be discharged into the Klamath River. These restrictions could have significant ramifications for the type of treatment facilities the City can construct or whether the controls will require the City to forego discharges to the river all together.

Without a phased-in WLA, the City could be forced to invest its resources to construct facilities to meet a low phosphorus limit and, shortly thereafter, be forced to abandon this investment to meet a strict arsenic limit that requires a redesign of the treatment works. There is therefore a clear need for the Department to provide certainty as to what controls, if any, will be required for arsenic before it implements the WLAs. The City has limited public resources to build treatment works and has a duty to its ratepayers to make strategic investments in facilities that will be used for decades. The Department should recognize in the TMDL that there are significant near-term uncertainties with respect to arsenic standards and it will resolve these uncertainties before it implements the WLAs in NPDES permits.

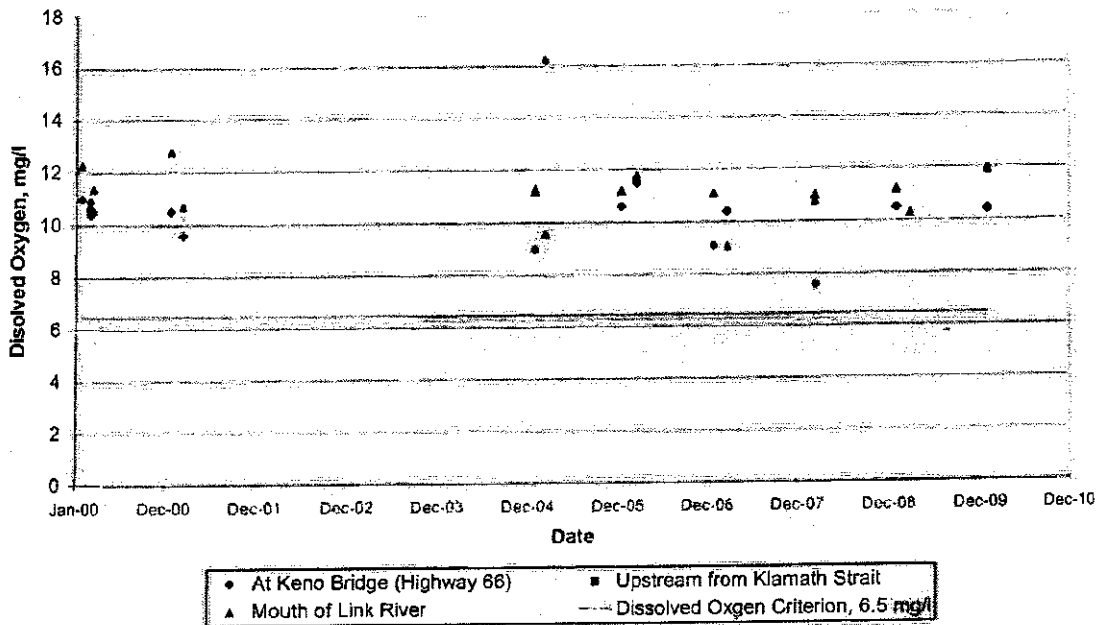
The fact that there are four downstream hydroelectric dams planned to be decommissioned along the Klamath River in the near term is another significant reason to not issue or to delay issuing final WLAs at this time. Dams alter the physical, biological, and chemical properties of a river and the removal of these dams may have beneficial effects in the Klamath River. For instance, once the dams are removed, nutrients will no longer be impounded in several reaches of the river, which would likely help determine whether year-round or summer only WLAs are warranted. During this time of uncertainty, it is sensible to focus strategies on low-cost and highly effective non-point source controls that have synergistic benefits on the river (e.g., create fish and wildlife habitat) in lieu of requiring permittees to immediately construct high cost infrastructure that would have minimal beneficial effects and may not be necessary when the dams are removed.

- C. **The water quality data for the portion of the Klamath River from the City of Klamath Falls to Keno Dam indicates that that portion should not be listed as water quality impaired for dissolved oxygen in the winter months and is not water quality impaired for pH during the winter months. Further, agreements between California, Oregon, federal agencies, tribes, and others indicate that the downstream dams will be removed, which, assuming this occurs, would address concerns about nutrients stored in these impoundments. Based on this, the WLAs for nutrients do not need to be set for the winter months. DEQ should further analyze the potential for summer-only WLAs for these nutrients and recognize there are significant environmental and pragmatic benefits to summer-only WLAs.**

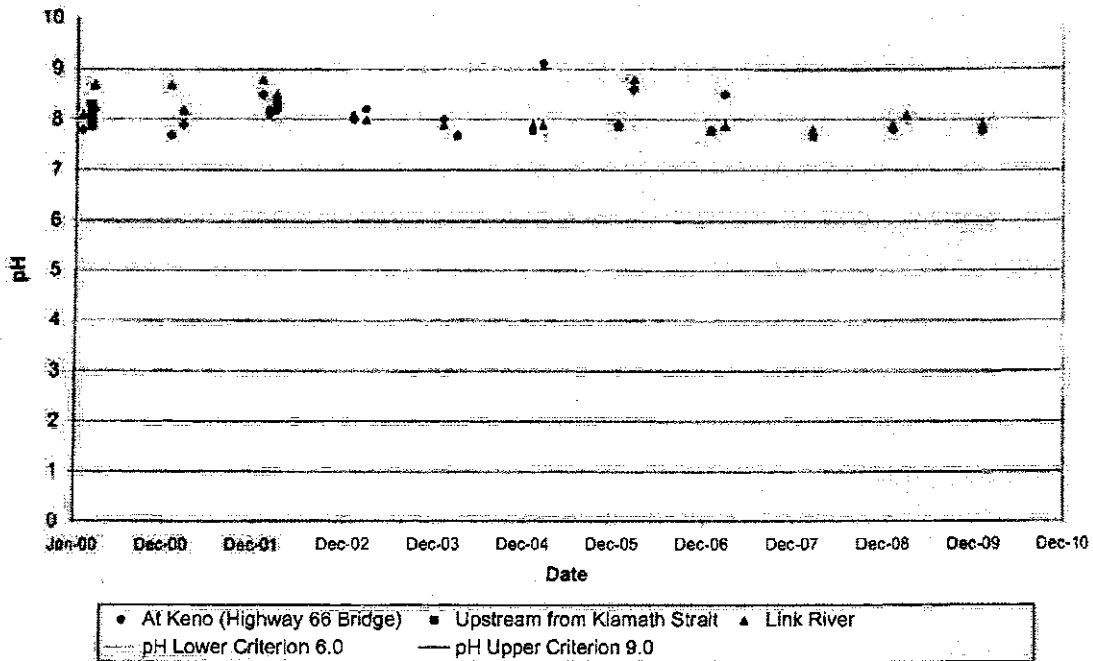
There is very limited data available to support the need for year-round WLAs for nitrogen or phosphorus. Below are two graphs that present information from DEQ's Analytical Storage and Retrieval Database ("LASAR") for water quality data. The graphs depict DO levels and pH levels over the last ten years during the months of December through March on locations on the Keno impoundment, which includes Lake Ewauna. In no instance was DO measured below the state criteria of 6.5 mg/l. OAR 340-041-0016(3). The data show only one instance where pH measured above the normal Klamath basin criterion of 9. OAR 340-041-0185(1)(a). Further, as made clear by OAR 340-041-0021(2), waters impounded by dams, which have pHs that exceed the criteria are not in violation of the standard, if the Department determines that the exceedance would not occur without the impoundment and that all practicable measures have been taken to bring the pH in the impounded waters into compliance with the criteria.

The graphs also demonstrate the dearth of data upon which DEQ could have relied to model the impacts of nutrients on water quality conditions in the winter. This undercuts the value of relying on the model to simulate year-round water quality conditions and, in particular, winter-time conditions where nutrients are not likely to cause algal growth. In the winter time, the factors that limit algal growth are likely to be cool stream temperatures and short daylight hours.

**Klamath River Dissolved Oxygen Concentration,
December - March, 2000-2010**



Klamath River pH Levels, December-March, 2000-2010



A TMDL should not impose new restrictions in streams that are not water quality impaired or on sources that are not contributing to impairments. While DEQ may view year-round nutrient WLAs as warranted because winter-time nutrient loads can be stored in dam impoundments and released in the summer, as noted, assuming the four dams are removed, nutrients will no longer be impounded in several reaches of the river. This would likely influence whether year-round or summer only WLAs are needed. Thus, if WLAs are to be issued for nutrients, there is a reasonable basis to only apply them in the summer (June through September). DEQ should perform further analyses of the environmental effects of a summer only WLA for nutrients.

A summer nutrient WLA also has two significant practical benefits. First, under a summer WLA, a permittee can discharge treated effluent into the river for the majority of the year. Second, permittees have more wastewater treatment options available to them in the summer so, while still costly, a permittee can potentially forgo discharging treated effluent in the summer and arrange to irrigate effluent onto farm fields when irrigation is in high demand. This would also have beneficial effects by providing a source of water to farmers during the drought season, potentially alleviating the need for some downstream water withdrawals. Further, with a summer WLA, there would be no need to construct expensive facilities for the storage of treated

effluent because the effluent could be immediately used for irrigation. Irrigation of treated effluent is less practical in winter because of colder temperatures and reduced demand.

- D. It is unclear whether the most appropriate data was used to develop the TMDL. DEQ should better clarify the data relied on to develop the TMDL and data should be presented or available to evaluate in a way it can be compared to other local datasets to determine whether the most appropriate data was selected.**

Appendix B of the TMDL includes a list of data sources used in the TMDL. The text lists data from the City, but does not identify which data was reviewed or used. See Table 3-7 in Appendix B to the TMDL. The City requests clarification as to what data from the City was used and whether it was used for site characterization, model calibration, or any other purpose.

On a related note, the City also requests that the Department present data in the TMDL or provide it in a way so that users can compare what data was used by the Department and how that data compares to other available local data sets. For instance, there is a summary of water quality data shown in Figures 3 and 4 of a technical memorandum on the TMDL model prepared in 2005 by Brown and Caldwell on behalf of the City. The report depicts the location and seasonal variability of data in the river reach that includes Lake Ewauna. DEQ's TMDL shows box and whisker plots for a number of parameters at river mile location and seasonally (see e.g., TMDL Figures 2-4 to 2-12), and these should be compared to other local data sets, including the sets used by Brown and Caldwell, to determine if the most appropriate data was used for TMDL development.

- E. The WLAs for nitrogen and phosphorus are predicated on model output that is not reliable and, in turn, the WLAs themselves are unreasonable. Key steps in the modeling effort must be re-done to ensure that model output can reasonably be relied on to support allocation decisions.**

The TMDL load and wasteload allocations were derived through the use of a water quality model. TMDL at 2-44. A TMDL model is used to attempt to simulate and predict physical, chemical, and biological processes, which are particularly complex in the Klamath River. As DEQ acknowledges, models are affected by uncertainty such as the amount of data available and how well natural processes in the river are understood. According to the Department, this uncertainty is addressed by establishing a "margin of safety" in the TMDL. TMDL at 5-5.

Below we describe a number of concerns that relate to the modeling effort. The big picture concern is that the WLAs for the TMDL are predicated on model output that is not reliable and, in turn, the WLAs themselves are unreasonable. As background, we note that in 2009, the U.S. Geological Survey ("USGS") performed a review of the Klamath River TMDL models from Link River Dam to Keno Dam in Oregon ("USGS 2009"). The USGS also recently performed

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another review of revised Klamath River TMDL models from Link River Dam to Keno Dam ("USGS 2010"). The USGS identified errors with the Klamath River TMDL model including parameter value inconsistencies among model scenarios, incorrect natural conditions, initial concentrations (water quality conditions specified when model was run) and many others. USGS 2010 Report at 8 - 27.

In light of these flaws, the City is concerned that the TMDL model was developed in the absence of a real Quality Assurance Project Plan ("QAPP"). The U.S. Environmental Protection Agency ("EPA") in its report, *Guidance for Quality Assurance Project Plans for Modeling*, provided detailed information for using a QAPP for model development and application. A QAPP should have been used and followed for the Klamath River TMDL modeling effort to address key quality assurance needs regarding data quality objectives, model suitability, data validation and usability, model performance and acceptance criteria and uncertainty. Without adherence to QAPP protocols, the technical defensibility of the model's output is questionable. DEQ should explain if and how it followed QAPP requirements and, if it did not, it should revisit its use and application of the TMDL model to meet these requirements.

For instance, in the USGS 2009 model review, USGS identified "several parameters for which inconsistent values were specified for the year 2000 and 2002 current conditions scenarios and the natural conditions scenario These inconsistencies existed for the nitrification rate (NH4DK), dissolved oxygen half-saturation constant (O2LIM), labile dissolved organic matter (DOM) and particulate organic matter (POM) decomposition rates (LDOMDK, LPOMDK), and the POM settling rate (POMS)." USGS 2010 at 11. While USGS notes in its 2010 review that "[t]he revised models have been changed to use consistent values for all these parameters" and that "[t]he only remaining inconsistency among the revised model parameters is the maximum SOD [sediment oxygen demand] rate...", it appears that DEQ did not provide documentation for the values selected for NH4DK, O2LIM, LDOMDK, LPOMDK, and POMS in the revised models. USGS 2010 at 11. As USGS notes, "[a]ll these parameters are relatively important to the simulation of ammonia, DO, and OM [organic matter]..." USGS 2010 at 11.

Thus, DEQ should have performed and provided sensitivity analyses or model calibration exercises to determine the best set of final values for these parameters. USGS 2010 at 11. Sensitivity analyses are important to determine whether a small change in the information used to model a parameter (such as DO) will result in a large change in model output. If that is the case, such information requires a much higher degree of scrutiny and review. Sensitivity analyses are standard practice to identify which parameters are more sensitive than others and, when adjusted up or down, which parameters result in disproportionately large changes in model output when compared to other parameters. It appears that the Department failed to perform these analyses and we request that such analyses be performed and the results explained. This is critical to understand water quality and algal dynamics in the Klamath River and how well the

model predicts the natural system and, in turn, whether the model can properly be used for allocating waste loads.

The upstream boundary conditions used in the Klamath River model are derived from the model used for the 2002 UKL TMDL. Model review by the USGS in their 2009 and 2010 Reports and Brown & Caldwell in their 2005 Technical Memorandum identified these boundary conditions as the greatest source of uncertainty. Further, the boundary conditions for the TMDL model under review today are also uncertain because the model output relies on a highly uncertain natural conditions scenario, which simulated the background levels of water quality in the Klamath River without human impact. The model extrapolated output from these estimated natural conditions, but these estimates of natural conditions are based on the highly simplified model used for the UKL TMDL. That UKL model was based on unrealistic and near oligotrophic (e.g., undernourished) conditions, which in fact are not the conditions in the UKL.

DEQ's current modeling approach also improperly relies on a very simple upstream mass balance model of the UKL (a 1-D model) to drive an extremely complex hydrodynamic model (the CE-QUAL-W2) on the Lake Ewauna segment of the Klamath River. The upstream model operates on a biweekly time-step (less simulated information) while the downstream model has a sub-hourly time-step (more simulated information). The Lake Ewauna stretch is a dynamic system with fluctuations in temperature and other water quality parameters. DEQ therefore needs a model that properly simulates these conditions, but the use of the upstream model to drive the downstream model output fails to properly do so. Thus, the modeling was conducted in a very data poor situation, or at least without full consideration of all of the available data that could have been used had DEQ used a different model or model approach to simulate the upstream UKL conditions and the downstream Lake Ewauna conditions. DEQ is effectively extrapolating information from the upstream model to the downstream model beyond a reasonable limit in this modeling exercise.

DEQ should subject the upstream boundary conditions used in the Klamath TMDL model to full scientific peer review to address and resolve these significant concerns. As the USGS points out, "[e]fforts to re-evaluate the available models of algal growth and nutrient cycling in UKL would be highly beneficial to downstream modeling efforts in the Klamath River." USGS 2010 at 3. Without such thorough reviews and necessary adjustments made to the models, the validity of the Klamath TMDL's model output is questionable and the model should not be used as a tool on which to base wasteload allocations.

The City is also concerned that data used in the modeling effort was not representative of actual environmental conditions in the region. For instance, the Data Review and Monitoring report that accompanied the TMDL summarizes precipitation data from 1996 to 2002 at the Klamath River mouth and Tule Lake to provide a general sense of hydrologic conditions in the area (see TMDL Appendix B Table 4-2). The report says that it represents "...a range of hydrologic conditions and inherently considers seasonal variability and critical conditions...." However,

during the period 1999 to 2002 the rainfall totals at the Klamath mouth station (the precipitation norm for that location and data record) is below normal and is as low as the 27th percentile for one of the key modeling and data years. A review of data at the Keno weather station finds below mean rainfall every year from 1999-2004 (there is no comparable data record at Klamath Falls). Thus, the modeling period represents a very low precipitation period, with no data points above normal and most years well below normal. The summer of 2002, June, July, and August, at Keno recorded almost no rainfall (0.11 inches total). There was almost no rain recorded in August of 2000, 2001, and 2002. This does not reflect representative hydrologic conditions.

As made clear from these concerns, there remain significant and unresolved questions as to whether the DEQ model can provide reliable information on which to base management decisions, such as how to allocate WLAs to point sources. The Department appears to have dealt with these uncertainties by allocating strict WLAs to wastewater permittees to force significant new investments in infrastructure. A more prudent approach would be for the Department (and all stakeholders in the region) to focus much more attention and collaborative action to address the underlying causes of nutrient loading into the UKL.

F. There should be no temperature WLA to the City because the Lake Ewauna stretch of the river is not impaired for temperature. Further, small temperature impacts from above the dams do not have any discernable effects below the dams.

The temperature WLA to the City is neither necessary nor appropriate. As shown on Table 1-2 of the TMDL, the river reach at River Mile 251 is not listed as water quality impaired for temperature. Table 2-4 appears to suggest that a WLA for temperature is necessary due to downstream water quality impairments, but the linkage between the City's outfall and downstream impairments is not explained and it is not at all clear that there is such a link.

The City recognizes there are rules that limit the ability of a point source to cause temperature increases in a water body after mixing. However, a separate WLA for temperature is unnecessary for a stream segment that is not temperature impaired, and in any event, any temperature-related restrictions can be based on existing statutes and rules and put into a revised permit. The temperature WLA should be eliminated.

G. DMA responsibilities should be measured by compliance with TMDL Implementation Plans. Greater attention needs to be placed on the control of non-point source pollution on private lands.

The City must and will make significant expenditures to address its responsibilities as a DMA. The TMDL states that, for DMAs, their respective TMDL Implementation Plans are due 18 months after DEQ issues the TMDL and are expected to fully describe the efforts of DMAs to achieve their applicable TMDL allocations. TMDL at 5-3.

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It is unclear in the TMDL what each DMA's applicable TMDL allocation is, and if there is a number, how that would be measured. The City suggests that, as a DMA, its compliance with any load allocation under the TMDL for non-point sources should be measured by compliance with its TMDL Implementation Plan, rather than any numeric targets or limits.

DEQ also expects DMAs to develop benchmarks for attaining water quality improvement. TMDL at 1-9. It is also unclear what is meant by such benchmarks. The proper benchmark for a DMA should also be measured in relation to implementation of a TMDL Implementation Plan.

According to DEQ, 81 percent of the land in the Upper Klamath Subbasin is privately owned with the remainder managed by federal agencies. TMDL at 1-13 to 1-14. Greater attention should be afforded in the TMDL to explain how non-point source pollution will be addressed on private and public lands, including what legal mechanisms are available to do so.

The Department's regulations state that if Best Management Practices ("BMPs") or other non point source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. OAR 340-041-0002(65). There is therefore a need to focus attention on what BMPs or other control mechanisms can be implemented on private and public lands before the Department implements a point source control program that costs a great deal of money with limited to no environmental benefit.

H. There are significant opportunities for water quality trading in the Klamath basin. The Department should further analyze the potential for trades within Oregon and also across state lines, and for credit banking.

The City supports the Department's efforts to develop, promote, and enable water quality credit trading. This work is consistent with ORS 468B.555, which directs the Department to develop and implement a pollutant reduction trading program as a means of achieving water quality objectives and standards in the state.

As the Department points out in its Fact Sheet on Water Quality Trading, the best opportunities for improving water quality are not always at the end of an NPDES permittee's discharge pipe. The premise behind water quality trading is that an NPDES permittee can obtain pollutant reduction credits from other pollutant dischargers or from pollution-reduction activities within the same geographic area. For instance, treatment plants can potentially trade pollution reduction credits for constituents like nutrients, biological oxygen demand, ammonia, and heat impacts between themselves so that one plant can discharge more of a particular constituent provided another plant discharges less. Alternatively, a wastewater treatment plant can offset its potential impact on a river by either performing activities or purchasing credits from others who perform activities that reduce pollutants from entering a river at a different location from the plant. DEQ has authorized Clean Water Services ("CWS"), the agency that operates treatment

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plants in Washington County, to trade between its plants that discharge to the Tualatin River and also allows CWS to plant trees and other vegetation to shade streams that flow to the Tualatin River rather than install wastewater chillers. In other states, such as Pennsylvania, nutrient reduction credits may be traded for the Pennsylvania portion of the Chesapeake Bay Watershed.

Given the upstream loading of nutrients into the Klamath River from the UKL, the region is particularly well suited for nutrient trades between point sources (e.g., one treatment plant to another) and point and non-point sources (e.g., one treatment plant to individuals or organizations in the agricultural and forestry sector). Indeed, it is our understanding that the Willamette Partnership, a coalition working to promote water quality credit trading, recently received a grant to support pilot projects on water quality trading and considers the Klamath basin a potential region to further pilot trading initiatives.

From the City's view, near term trading opportunities are critical to identify and implement low cost measures to address water quality needs in lieu of forcing high cost investments in wastewater treatment infrastructure. Given the fact that the river crosses into California, there are benefits to enlarging the market for trading to include individuals and organizations in California to address multiple segments of the river.

In light of all these important developments, the City requests that the Department discuss in the TMDL the potential for trades between point and non-point sources in both Oregon and California, and on tribal lands. The City also requests that the Department address in the TMDL the potential for nutrient credit banking, which could support projects to be implemented by point sources in the near term that yield credits to be used for compliance in future years.

While the City strongly endorses the concept of water quality credit trading as a potential low-cost method to achieve water quality objectives, it is critical that the Department not consider this emerging market when determining what WLA to allocate to a permittee. The fact that there can be water quality trades does not mean there will be and does not justify allocating to a point source a low WLA simply because it might at some point be able to purchase credits from another. Water quality trading can be a low-cost mechanism to achieve water quality objectives, but it should function like a real market and not be considered in TMDL load allocation decisions.

I. DEQ needs to take sufficient time to fully address the concerns raised by stakeholders on this TMDL. The decision-making process should not be unduly influenced by TMDL-related activities in California.

We understand that the EPA, the agency that will review and potentially approve this TMDL, is under a court order to ensure completion of TMDLs for the California portion of the Klamath River by December 31, 2010. We do not know what effect that order has had or will have on

DEQ's own deliberations and decisions and timeline to finalize this TMDL. We emphasize here that DEQ needs to take the time required to fully consider the City's (and other's) comments in light of DEQ's own responsibilities before promulgating any final TMDL.

The interests of all downstream users are best achieved where DEQ and stakeholders focus attention on the most significant underlying cause of water quality impairments – the phosphorus load from the UKL. It is also logical to ensure that all designated beneficial uses, including those in California, are evaluated to determine what uses can reasonably be met for this river.

J. There are technical and factual errors in the TMDL that should be corrected.

The City requests that DEQ make the following technical corrections in the TMDL:

- The temperature TMDL only applies between June 1 and September 30. TMDL at 2-54. However, the Executive Summary indicates this TMDL is applicable year-round. TMDL Summary at v. The Executive Summary should be corrected accordingly.
- Table 2-10 presents the mass load WLAs for phosphorus and nitrogen for the City and indicates that the flow rate average used in the calculations for the City is based on treatment of 3.25 million gallons per day ("MGD") based on flow in the year 2000. The phosphorus load, however, appears to be calculated using a flow of 3.29 MGD, whereas the nitrogen load appears to be calculated using a flow of 3.22 MGD. For consistency purposes, the City believes the mass load calculations for both nutrients should be calculated based on the same amount of gallons being processed which, for the year 2000, was 3.25 MGD.
- The City's NPDES outfall is at River Mile 251 (not River Mile 252.6). Table 1-5 of the TMDL should be adjusted accordingly.
- The reference on page 5-16 to the Henley School is incorrect. That school will not be piping their waste water to the City.
- There is a reference on page 5-5 of the TMDL to OAR 340-41-026(3)(a)(D)(ii), but that regulation does not appear to exist. Please clarify what regulation is being referenced.
- The introduction to Table 5-1 states that the table provides a description of current water quality conditions; however, no current water quality conditions are presented in the table. Please clarify what DEQ considers the current water quality conditions of these stream reaches and on what data source it relies to determine these conditions.


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Conclusion

The City is concerned that DEQ, in setting the City's phosphorus WLA, did not properly consider the actual contributions from the City to water quality impairments in the river, the costs and difficulty of implementing control measures at point sources, or the unintended consequences and potential adverse environmental impact from the allocation strategy that may force the City to forego discharges to the river. The City is also concerned that the TMDL does not provide reasonable assurances that efforts to control background loading of phosphorus into the UKL or downstream reaches of the river will actually occur. Further, there should be no temperature WLA to the City in light of the fact that Lake Ewauna is not temperature impaired and the connection between the City's outfall and downstream thermal effects are not explained.

Through these comments, the City has raised concerns that warrant the Department's full consideration. The City urges DEQ to resolve these issues before submitting a final TMDL to EPA. Depending on the Department's response, the City would also appreciate the opportunity to provide further comment on revisions to the TMDL before it is finalized.

Sincerely,



Mark Wilfrett, P.E.
Director of Public Works
City of Klamath Falls

cc Tom Lindley
Steve Higgs
Dick Nichols

Reference List

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- Department of Environmental Quality, *Draft Upper Klamath and Lost River Subbasins Total Maximum Daily Load and Water Quality management Plan* (February 2010). (TMDL)
- Department of Environmental Quality, *Appendix B Data Review and Modeling Approach Klamath and Lost Rivers TMDL Development* (2004).
- Department of Environmental Quality, *Analytical Storage and Retrieval Database*, available at: <http://deq12.deq.state.or.us/lasar2//>. (LASAR)
- Department of Environmental Quality, *Fact Sheet Water Quality Trading* (January 2010), available at: <http://www.deq.state.or.us/wq/trading/trading.htm>.
- U.S. Environmental Protection Agency ("EPA"), *Guidance for Quality Assurance Project Plans for Modeling*, Report QA/G-5M (December 2002).
- U.S. Geological Survey, *Review of the Klamath River Total Maximum Daily Load Models from Link River Dam to Keno Dam, Oregon* (2009). (USGS Report 2009).
- U.S. Geological Survey, *Review of Revised Klamath River Total Maximum Daily Load Models from Link River Dam to Keno Dam, Oregon* (2010). (USGS Report 2010).