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TO: Region 1 Water Quality Control Board
FROM: Clifford Paulin, Brock Dolman
 Occidental Arts and Ecology Center, WATER Institute
DATE: November 16, 2004
RE: Written Comments on the Proposed Sediment Action Plan

Good Day,

The WATER Institute at the Occidental Arts and Ecology Center (OAEC) is engaged in active efforts to assess watershed health, implement watershed restoration projects, increase public water literacy, and promote increased local democratic control of all water resources acknowledging the importance of this most precious resource necessary for human and ecological survival. Our focus is on both the immediate Dutch Bill Watershed (DBW) and water policy throughout the region. OAEC is involved with on the ground restoration work including erosion control, surface runoff retention, road management, native wildlife and vegetation communities' enhancement, forest health, fire resiliency and exotic weed control.

In evaluating the legal landscape of watershed management the WATER Institute became aware of the proposed sediment action plan. After attending the Public Workshop on October 5, 2004 at the North Coast Regional Water Quality Control Board offices in Santa Rosa members of the Institute reviewed the documents and prepared these comments. The Institute is also very interested in reviewing and making comments on the draft Guidance Document for Sediment Control when it is available, some of the remarks made in these comments are applicable to that document as well. Thank you very much for your hard work on the proposed sediment action plan.

Comments:

1. *Ambiguities and Inconsistencies in Language*

There are significant ambiguities in language in several critical areas. While ambiguity in a regulation can allow for some "wobble room", they are also ripe for challenge and are a source of confusion for affected parties. Below are several of the ambiguities and inconsistencies in the action plan and suggestions for amendment.

§ I, Paragraph 1

The first paragraph leaves confusion as to at what threshold the action plan takes effect. The regulation states that it is not interested in "grains of sand," but with some unspecified number of cubic yards. The language seems to serve the purpose of not casting too wide of a net. However, the current language also

provides room for non-compliance in questionable circumstances. An individual sediment discharge in a given storm event might be relatively small, well below multiple cubic yards. None the less, the cumulative impact of such a discharge could have serious impacts, especially when discharged to an impaired water body. On that note, the language also fails to make the distinction between sediment production and sediment delivery. Sediment production is inevitable and innocuous to water quality until delivered into a water body.

An amendment to the language would address both points of confusion. If the action plan were to apply to, "All anthropogenic sediment deliveries to water bodies.", then the plan clearly addresses all sediment deliveries which are the cause of sediment impairment. While this language may appear more stringent, the actual effect on real world implementation would be minimal. As enforcement of this plan will most likely be complaint driven or in conjunction with other efforts such as TMDL evaluations there is little chance that anyone would be found in violation for discharging "grains of sand". The amended language would however provide much clearer standing for an enforcement action against a small but still consequential discharger. In addition such a change would more closely follow the Prohibition of Discharges to All Water Bodies language set forth at §IV, C.

§ V A. (2), Paragraph 1

The mandate to "minimize to the maximum extent possible" is also ambiguous. While the modifiers "reasonable" and "feasible" do provide criteria on which to judge actions, a discharger could take all reasonable and feasible measures and still contribute sediment.

As the rest of the document makes clear, the true goal of the action plan is the "**elimination**" of anthropogenic sediment discharges. Such an amendment would make crystal clear that sediment discharges are to be fully controlled. In addition such a change would clarify when an offset compensation is necessary. Whatever sediment discharge that could not be eliminated would require compensation.

§ V D. (2)(c)(i-iii)

The use of the permissive word "should" in §V D (2)(c)(i-iii) is inconsistent with language in numerous locations throughout the action plan. First, it is inconsistent with the stringent mandate that discharges "*shall* be controlled" at in subpart (1), and that a discharger "*shall* implement reasonable and feasible sediment control practices" in subpart (2). Second, "should" is inconsistent with the language on page 21 of the staff report under Existing Sediment Sources which states "existing sources *must* be prioritized" and "control practices *must* be implemented". Finally, it is inconsistent with language in the same subpart, §V D (2)(c), "following elements are considered *essential*". Essential implies that they can not be done without, thus not warranting a permissive approach in compliance. We recommend replacing the word "should" with "shall" in §V D (2)(c)(i-iii).

It is not lost on us that the Staff Report on the proposed action plan addresses the intentional use of the word “should.” The Report claims that the word was chosen to clarify, “that the preparation and submittal of an inventory of sediment waste sites is not required and that there may be more than one way to achieve compliance.” However, a plain reading of the language does not draw one to the conclusion laid out in the staff report. Rather the word creates a double standard within the section, while making no reference to lack of reporting requirement. In addition, amending the word “shall” in each instance would not create a duty to report. It would however ensure that dischargers would at least be expected to have analyzed for themselves, “the minimum data that is needed to perform an adequate identification and assessment.” (Staff Report, p. 52, paragraph 1)

2. *Lack of reporting requirement for existing sources. § V D. (2) (a) & (b)*

The issue of reporting requirements for existing sources poses some difficult choices. As noted in the Staff Report a reporting requirement for existing sources would tax staff resources and place a burden on the regulated community. However, the same rationale also notes the environmental benefits of regular reporting in motivating a discharger “to investigate sediment waste sources and remedies more actively and completely.” (Staff Report, p. 51, paragraph 3) In addition the Staff Report rationale for not requiring offset compensation for existing sources is predicated upon the supposition that “Even without the offset compensation requirement, controlling existing sources can allow recovery of impaired watersheds.” However, to determine the validity of this theory, the Staff Report notes, “This supposition will be tested with monitoring, assessment, and adaptive management.” (Staff Report, p. 51, paragraph 1) The lack of a reporting on existing sources will deprive the Board of data necessary to evaluate this claim.

Recognizing regular reporting creates a burden on landowners and the Board but that data on the effectiveness of sediment control practices is essential to meaningful adaptive management calls for a compromise. We recommend adding language to §V D. (2)(b) that states,

“While submittal of a Sediment Control Plan and regular reporting are not required, the board recommends that all parties acting to satisfy their duties under this action plan generate a Sediment Control Plan and regularly report documentation of actions performed in compliance with the steps laid out in §V D. (2)(c)(i-iv). These documents could provide proof of compliance with the requirements action plan, supply landowners with a record for proper management, and contribute data necessary for meaningful evaluation of the effectiveness of the sediment action plan.”

Even if the staff was unable to review these reports at the time of receipt, there cataloging would provide vital knowledge in future inquiry.

3. *Offset Compensation § V C. (3)*

The concept of compensation is a difficult subject. While the concept of further remediation to achieve standards is laudable, water pollution is much less fungible than air pollution. Sediment discharges to water courses affect discrete sections much more acutely than air pollution released in the atmosphere. The further away a compensation site is from the point of discharge the less relevant it is to that affected location. While we applaud the action plan's call for offsets to occur in as close proximity as possible, there should be an absolute requirement that all offsets occur within the same watershed at the very least.

Additionally, the blanket preference for natural sources as offsets in paragraph 2 is unwise. Natural sediment discharges vary in composition (size and quality) and may be of wildly different composition than the anthropogenic sediment discharged. Therefore prevention of a natural source of discharge could have a much different impact than elimination of the original discharge. As is noted in the Salmonid Freshwater Habitat Targets, pages 19-26, the difference in sediment size plays a major impact on the quality of spawning habitat. Reduction in natural sediment would change the composition of sediment deposits which could have negative impacts on salmonid habitat. As reflected in the Habitat Restoration Exclusion § V B. (2) even projects with the best of intentions can have unintended consequences. Equivalency of composition between offset and discharge is a more critical factor, as noted in paragraph 1.

Therefore the preference for natural sources should be amended to read, "Offset compensation using natural sources with significantly similar composition (size and quality) as the anthropogenic discharge". These limitation should also influence the ratio determination in § V C. (4)(b)(iv). [See Comment 4]

4. *Offset Compensation Ratio § V C. (4)*

We recommend amending the factors determining both the minimum offset compensation ratio determination in § V C. (4) (b) and the increase in ratio in § V C. (4) (c).

First we recommend amending the natural source preference in § V C. (4) (b)(iv) to reflect the concerns about preference for offsets of natural sources raised above in Comment 3. We would amend the language of § V C. (4) (b)(iv) to read "Offsets a natural source of similar composition and in close proximity to the anthropogenic discharge or as has been identified by a federal or state resource agency as a priority for habitat restoration, not an anthropogenic site." In addition we would add another factor to the list in § V C. (4) (b) noting the importance of equivalency in sediment offset. Such an amendment could read "Offsets a discharge of significantly similar composition, and in close hydrologic proximity to the discharge."

Next we recommend adding several factors to the determination of increase in the offset ratio outlined at § V C. (4) (c). First, an offset has a meaningful mitigating impact on the area affected by the discharge only if that offset occurs upstream from the discharge in close proximity. Even if an offset downstream or

at a distant point upstream is successful in reducing overall sediment loading, it will have negligible to no impact on sedimentation on the discrete section of water way effected by the discharge. Therefore we recommend adding a factor to the ratio determination that read, "The offset occurs downstream or at a distant point upstream of the discharge."

5. *Potential for the sediment action plan to enhance other beneficial uses*

We recognize the value of the sediment action plan in reducing deleterious anthropogenic impacts on surface water flows. Land use management practices that result in sediment catchment and treatment will also provide a multiplicity of enhancements to beneficial uses identified in the Basin plan

These enhancements will accrue through implementation of sediment control practices that encourage the slowing (detention), spreading (dispersion), and sinking (infiltration) of sediment-laden water. In addition to promoting sediment reduction goals and protecting the specific beneficial uses listed in the Staff Report, sediment management techniques that reduce anthropogenic impact on surface water flows will provide enhancements to other listed beneficial uses. These include Flood Peak Attenuation/Flood Water Storage (FLD), Cold Freshwater Habitat (COLD), Water Quality Enhancement (WQE), Spawning, Reproduction and Early Development (SPWN), Rare, Threatened, or Endangered Species (RARE), Wildlife Habitat (WILD), and Groundwater Recharge (GWR). These beneficial uses are worthy of mention in the action plan, thus we recommend amending the action plan to make mention of the beneficial uses protected and enhanced through the implementation of the plan.

It has been said once, but bears repeating, these additional enhancements to beneficial uses will not automatically occur, rather they will result from proper implementation of management practices that reduce anthropogenic impact on surface flows. We would therefore highly recommend that the upcoming Guidance Document for Sediment Control favor long lasting techniques that encourage detention, dispersion, and infiltration over temporary pre-construction techniques such as silt fences and straw waddles. Excellent illustrations of such infiltration techniques can be found in "Start at the Source", Bay Area Stormwater Management Agencies Association, January 1997.

Flood Peak Attenuation/Flood Water Storage (FLD)

Stormwater detention or retention and corresponding increases in rates of infiltration are critical components to attenuating high flow rates associated with large seasonal storms. In areas with low soil permeability stormwater detention and measured release are invaluable to reducing anthropogenic alteration of the natural hydrograph. However, where Subsurface soil is capable of absorbing and slowly releasing large volumes of water encouraging retention and infiltration provide additional benefits.. First, percolating water will not be entering a water way immediately, contributing to decreased water level at the time of storm events, leading to reduced flooding. Second, retained water will slowly percolate towards the water course, attenuating flow rates, especially critical for late season salmonid health. Hydrographs of unimpaired water ways

show a much slower rise and prolonged period of sustained flows than those that have been heavily impacted by human development. Encouraging detention, and where possible retention and infiltration, are means to reestablish more natural hydrologic conditions.

Cold Freshwater Habitat (COLD)

In addition to attenuating seasonal flows, increased infiltration will have a positive impact on cold freshwater habitat. Percolated water entering a stream bed is significantly colder than equivalent water entering through surface channels. This reduction in temperature is advantageous to protecting salmonid habitat.

Water Quality Enhancement (WQE)

This goal is the main thrust of the sediment action plan, but it is worth noting that management techniques that encourage detention, retention and infiltration will further enhance this beneficial use. Reduction of anthropogenic impact on surface water flows will greatly assist in the goals of WQE namely, “erosion control, filtration and purification of naturally occurring water pollutants, stream stabilization, maintenance of channel integrity and siltation control.”

Spawning, Reproduction, and Early Development (SPWN) & Rare, Threatened, or Endangered Species (RARE)

Again, this goal is one of the main objectives of the sediment action plan, but implementation of management techniques that reduce anthropogenic impact on surface water flows will provide further improvements to these beneficial uses beyond simply controlling sedimentation. As noted in the Cold Freshwater Habitat, Water Quality Enhancement, and Flood Peak Attenuation comments above, increased infiltration leads to colder, clearer, and cleaner water entering water ways for a prolonged period. All three of these improvements improve habitat for listed salmonid species as well as all other species dependant on clean, sustained, and moderated flow regimes.

Wildlife Habitat (WILD)

In addition to enhancing instream habitat, an action plan that encourages infiltration will benefit terrestrial ecosystems. Stormwater stored in detention ponds serves as a water source for wildlife. In addition, an increase in subsurface percolating water will contribute to “preservation and enhancement of terrestrial habitats, vegetation, wildlife, [and] wildlife water and food sources.”

Groundwater Recharge (GWR)

Increased infiltration will augment percolating near-surface water and groundwater recharge. Given the correct geology of an area this fact will directly contribute to groundwater recharge. This fact will increase groundwater supplies in all areas and in particular will aid in “halting salt water intrusion into freshwater aquifers” for alluvial wells threatened by saline intrusion.

Further, a sediment action plan that encourages infiltration will protect groundwater supplies by reducing geo-fluvial morphological impacts.

Unimpeded stormwater contributes to increased bank and bed destabilization as noted under FLD. This destabilization results in significant down cutting which reduces the elevation of a water course. The decrease in river elevation causes a corresponding drop in surrounding water table. This lowering of the water table reduces the overall carrying capacity of the groundwater basin. In addition to effects caused by down cutting, the deposition of fine sediment particles in river beds decreases the rate of infiltration from rivers to underlying groundwater basins.

For example, sections of the Middle Russian River have been down cut by 15-20 feet while larger sediment has been replaced with fines (through gravel mining and sediment deposition). This down cutting and sediment replacement has had a noticeable impact on the water table in areas surrounding the river. The water table in the Middle Russian River area has dropped by similar amount throughout the region. Some estimates find that the available groundwater storage of the region has been reduced by 50,000 acre/feet as a result.

6. Public safety benefits of increased infiltration

Reduction of anthropogenic impact on surface water flows also presents a benefit to public health and safety. As noted above in FLD and GWR unimpeded stormwater contributes to flooding and bed and bank destabilization. Increased flooding has been reported on stretches of the Russian River contributing to serious losses of property and possibly life. Bed and bank destabilization threatens public safety by contributing to road and bridge destabilization and the need for increased maintenance.

CONCLUSION

The WATER Institute applauds the over-all the approach and aim of the proposed sediment action plan. Prevention of further sediment impairment is essential to restoring the ecological health and preserving the beneficial uses of our waters. Encouraging management techniques that increase infiltration rates will be the most effective means of achieving the sediment reduction goals of the plan. Increase infiltration will result in a multitude of improvements to beneficial uses named in the basin plan as well. We strongly suggest that the proposed amendments above are adopted in full. We also hope that the upcoming Guidance Document for Sediment Control will reflect these concerns. If the Board has any questions concerning these comments please feel free to contact us. Thank you again for your time and effort in crafting the action plan and in responding to our public comment.

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