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2 October, 1996

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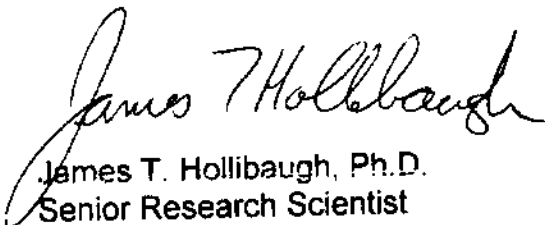
OCT 04 1996

**DEPARTMENT OF
COMMUNITY DEVELOPMENT**

Dear Ms Meridith:

Please find enclosed my comments on the Draft EIR/EIS for the Subregional
Long-Term wastewater Project.

Sincerely,


James T. Hollibaugh, Ph.D.
Senior Research Scientist

REVIEW OF SANTA ROSA SUBREGIONAL LONG-TERM
WASTEWATER PROJECT DRAFT EIR/EIS.

Reviewed by

James T. Hollibaugh
Center for Environmental Studies
San Francisco State University

2 October, 1996.

SCOPE.

This review primarily covers the documents pertaining to the West County Alternative (Alternative 3), though I examined most of the material pertaining to irrigation and water quality, regardless of the alternative under which it appeared. I also examined some of the Technical Memoranda upon which the EIR/EIS is supposedly based.

GENERAL COMMENTS

On a general philosophical level, they (the managers of the City of Santa Rosa, hereinafter SR) are still missing the point that this water is a valuable resource and that creating a new water demand by setting up irrigation-dependent agriculture is probably not a good idea in the long run. This is not addressed in the EIR/EIS, though they touch on it indirectly in the discussion of the Russian River discharge alternative by making the point that they are providing a return flow to partially compensate for M&I withdrawals from the river (which is correct and which is good). However, the point should also be made that this option (Russian River discharge) also retains the most flexibility for re-allocation of these resources in the future. Investment in an extensive irrigation system or Geysers pipeline is a long term investment. Once committed it will be difficult to reallocate the resource (water) even after the planned life of the project or even if water demand has increased to the point that using it for irrigation, especially of irrigated pasture, is wasting a resource. | 001

This EIR is written much better than the previous version of the EIR (EIP 1990), though the extensive cross-referencing leads to redundancy and is somewhat confusing in places. In general the redefined alternatives appear to have been developed with more concern for potential environmental impacts than in the previous Project Description. They (Santa Rosa, hereafter SR) have refined the West County alternative to eliminate the major direct project impacts to the Esteros that were features of this Alternative in the previous Project Description. There will be no direct discharges to the Esteros; however, SR recognizes that irrigation will affect the water balance such that there will be (at the very least) an increase in ground water inflows to Stemple and Americano Creeks as a result. SR also recognizes that any changes to the salinity regime are an impact and they acknowledge that these impacts can't be mitigated. These changes in flow will be slight, **assuming that the project is operated as described**, and shouldn't present any significant environmental impacts to the Esteros, either from the water or the nutrients they contain. If the proposed improvements to riparian corridors (buffer strips, planting trees, etc.) are implemented, there should be a net overall improvement in water quality in the streams that enter the Esteros (**with the exceptions noted below,**) with a commensurate improvement in Estero water quality and benefit to Estero resources. | 002

The main problem that I see with the plan, and it is significant, is with regard to pesticide application and dispersion into the environment, including the Esteros. The | 003

proposed changes from the current land use of dry-land pasture to irrigated pasture or to what SR refers to as "high-tech agriculture" (i.e. truck farms) carry with them very different scenarios for the use of agricultural pesticides. Currently, there is little use of pesticides in the watersheds of the Esteros. One of the characteristics of "high-tech agriculture" is strong dependence on the use of agricultural pesticides. 003(cont.)

SR presents a scenario, based on a modeling exercise with carbaryl (Sevin) and 2,4-D, that no pesticides will leave the irrigated areas and reach the streams. The model as explained in one of the technical memoranda is essentially a set of weighting or partition coefficients applied to loadings. I was unable to find any information in the material I had available to me as to how these coefficients were derived, though there is reference to another report that I could not find in the hard copy or on the CD. In 004
 general the EIR sweeps the pesticide problem under the table, even though I know that this issue was raised in the review of the previous EIR. For example, winter transport of residual pesticides from cultivated acreage to watercourses and ultimately the Esteros by overland flow not associated with irrigation is not considered as a transport route, even though enhanced erosion by this route as a result of cultivation is considered in the EIR.

The model results fly in the face of numerous examples of agricultural/environment interactions. Spectacular local examples of agricultural chemicals entering sensitive aquatic habitats are Elkhorn Slough, the San Joaquin River, the Sacramento River and the Sacramento/San Joaquin River Delta. Although the ranching community in western Marin and Sonoma counties is, I believe, more concerned about the impact of agriculture on the environment than their corporate agribusiness counterparts in the Central Valley, does SR really believe that the farm-hands to be employed on the acreage they propose to irrigate are going to be that much better educated or caring than Salinas or Central Valley farm hands? Supposedly the Irrigation Conservation and Management Plans presented in Volume 1, Chapter 2 of the EIR will prevent pesticide releases to the environment, but I do not see how this will happen. Yes, there will be an ICMP developed for each parcel prior to irrigation and some attempt will be made to educate the farmers as to best management practices, but it is not clear how often this will happen (I suspect just once right after an irrigation contract is signed). What will be done about the turnover of farm hands, even if the owner receives pesticide handling training? There is no provision requiring the farmer to test his staff for competency in pesticide handling and application. 005

To compound this problem, the proposed monitoring program is woefully inadequate - of the order of a visual inspection of the property. While this might detect a starling kill, it is unlikely to detect contaminated sediments. No direct analytical monitoring of the environment is proposed to determine if their objectives are being met; there is verbiage about it being too expensive. There seems to be the attitude that "the model says that there won't be a pesticide problem, so why bother monitoring." 006

It is unclear what the consequences will be if a pesticide contamination (or other) problem develops, regardless of whether or not the farmer is following the ICMP. Suspending delivery of irrigation water is mentioned as a penalty, but what sort of due process will be followed? How will "problem" be defined legally in the irrigation contract? How many opportunities will the violator be given to correct the problem? What are the provisions for restitution, remediation or mitigation if a problem develops? 007

This is potentially a very serious problem for the Esteros, as well as the aquatic resources of the Estero watersheds (like the California Freshwater Shrimp) that are likely to be extremely sensitive to the insecticides commonly used on truck crops. I think that about the only way losing pesticides into the environment can be avoided is by not applying them in the first place. In the context of this project, that means restricting use of wastewater to irrigated pasture only. To their credit, SR recognizes this as a potential mitigation alternative. 008

A second concern is that of visual impact. The present West County alternative extends the area to be irrigated much closer to (in fact adjacent to) the Estero Americano than did the previous iteration. There will be an obvious and sharp contrast between the irrigated, cultivated land and the present situation of dryland pasture or oat hay where the seasonal change in the grasslands - cultivated or otherwise - lead to consistent patterns of color and texture. While this may not affect water quality in the Estero Americano or its aquatic life, it will certainly be a different experience for the recreational user of this part of the Gulf of the Farallones National Marine Sanctuary. 009

A final general comment is that I find the consultants' failure to use references to primary literature disturbing. I recognize that this is appropriate for some of the specialized technical aspects of the project discussed in the EIR, but these experts should be aware of and capable of citing the appropriate literature in sections providing general descriptions of environmental settings, biota, etc. For example, there is no excuse for the repeated references to and reliance on the previous EIR, (EIP 1990) for these descriptions. This document was so flawed (including gross errors in the descriptions of biota and ecology) that it was rejected. For the same reasons, I am concerned about references to some of the earlier Technical Memoranda and I suspect that some of the Technical Memoranda cited as recent documents are the same reports in a new format. This practice is particularly bad in the description of aquatic biological resources in section 4.9. And by the way, *Crangon* is NOT a mysid (p.4.9-29). 010
011

SPECIFIC COMMENTS

I will only discuss a few key items here, and not in any particular order.

There seem to be a number of discrepancies between what appears in the EIR and what is stated in the Technical Memoranda upon which the EIR is supposed to be based. As one example that is significant for the West County alternative, it is stated 012

on page 4.9-68 that only one individual steelhead trout was seen in the creek at the proposed Carroll Road dam site. The EIR then goes on to suggest that this fish simply got lost, so that this is not an indication of a migration corridor or spawning habitat at the site and concludes that there will be no impact to anadromous fish populations from dam construction. In fact, the Technical Memorandum where this survey is reported states that 3 steelhead trout of 15" length were observed at this site, which certainly suggests the possibility of a migration route or spawning habitat at this site to me. This Technical Memorandum goes on to describe this stream habitat as suitable for the breeding of these fish, as well as habitat at the proposed Two Rock reservoir site.

012 (cont.)

Another example of their being something screwy is in Table 4.6-24 on page 4.6-47 where the chlorophyll concentrations in the Esteros are reported to range from 0.000014-0.56 mg/L. First, the range - 4 orders of magnitude - is outrageous. This also bothered me because I think that the low value would represent a world record for low chlorophyll concentration. I haven't heard of chlorophyll concentrations as high as the high value in the natural environment, though they might be found in fish or duck ponds or during *Mesodinium* blooms. I suspected analytical error so I checked the cited Technical Memorandum. Here the range was of the order of 0.002 - 0.1 mg/L, much more reasonable, and consistent with measurements I have made in the Esteros. So, since a similar wide range was reported for the Russian River and Laguna de Santa Rosa, this raises questions about the accuracy of the environmental data in these tables.

013

Why does the project have to have a few large reservoirs rather than a larger number of small ones? The latter alternative lessens the risk associated with catastrophic failure, makes siting easier and makes it easier to avoid sensitive habitats in the watershed. I suspect that the reason that would be given is that it would cost more to build a number of small reservoirs, but I would think that the advantage of being able to phase reservoir construction throughout the life of the project, rather than expending all of the money at once, could be a significant advantage both financially and in terms of project flexibility. What if the planned wastewater generation rates are never met, either because water conservation becomes an effective tool, or because there is high demand for wastewater for some other use? A large reservoir sitting empty does not make any sense. This question may have been dealt with in a section of the EIR I did not read.]

014

I stated above that a slight increase in flows to the Esteros as a result of irrigation in the watershed shouldn't have a significant environmental impact. I would define "a slight increase" as something around 1 cfs or less. I realize that in one sense this may be considered to be a dramatic increase in flows for a stream having little or no summer flow, like Americano and Stemple Creeks. At any rate, the key issue is the balance between freshwater inflow and evaporative loss to the Esteros, which can be modeled.

015

The nutrient loading from this low flow should also be negligible, provided that stocking densities of cattle on irrigated pasture remain similar to those that are there today.

Since this is unlikely, the EIR should consider the combined impacts of increased nutrient loading to the watershed from wastewater PLUS the loading due to cattle feed brought into the watershed. Some of this is exported as milk, but much of it remains as cattle waste. Higher stocking densities, despite the increased productivity of pastures under irrigation, may result in more feed being brought into the watershed, more waste being generated, and thus an overall increase in nutrient loading to the Esteros. The Technical Memorandum that addressed this question for the previous EIR failed to consider these factors and came up with a distorted (minimized) estimate of the impact of irrigation on the nutrient balance for the watershed. I see no evidence that that analysis has been revised for this EIR.] 015 (cont.)

If nutrient concentrations in the groundwater runoff from irrigated pasture increase significantly over those in the wastewater used to irrigate the pasture, then even the slight increase in freshwater inflow to the Esteros could enhance eutrophication. Of the two irrigation alternatives, the South County alternative will have the least potential for stimulating eutrophication because nutrient levels in San Pablo Bay are already high and eutrophication is limited by light penetration into the turbid water of northern San Francisco Bay.] 016

A final specific comment to be made here pertains to the impact of Cu loading on the environment as a result of the irrigation alternatives. As part of the discussion of the mitigation of this potential impact, the authors of the EIR discuss (p. 4.6-88) the effect of the Sonoma County Water Agency's measures to control the pH of domestic drinking water on leaching copper from residential plumbing. It is stated that the long term average concentration of Cu in effluent was 0.010 mg/L, but that since the implementation of these measures, the Cu concentration had decreased to 0.08 mg/L. This is interpreted to indicate successful mitigation by source control. Now, of course a change from 0.010 to 0.080 represents an *increase*, not a *decrease*, but I assume that this is a typo and that what is intended here is 0.008 mg/L.] The problem is that no statistical parameters, other than the number of samples for the post-implementation measurements (n=2), are given, so it is impossible to test whether or not this change represents a real decrease or something having more to do with random analytical variation, the time of the year, flow rate, etc. Given the small difference reported and the small number of post-treatment samples, I doubt very much that this difference is statistically significant anyway, so the point as to what "caused" it is moot. The only statistically valid conclusion that can be reached is that the Sonoma County Water Agency's measures have had no effect on Cu concentrations in waste water. This cannot be counted on as a mitigation measure. To claim anything else is dishonest.] 017 018

