

Regional Water Quality Control Board
North Coast Region

Change Sheet

Thursday, April 7, 2016
Eureka City Hall
Eureka, California

ITEM: 5

SUBJECT: Public Hearing on Resolution No. R1-2016-0017 to consider adoption of an amendment to the *Water Quality Control Plan for the North Coast Region* to include the *Action Plan for Upper Elk River Sediment Total Maximum Daily Load* addressing sediment impairments in the Upper Elk River (*Alydda Mangelsdorf*)

A total of 6 changes to the adoption package for this item have been made: one to Resolution No. R1-2016-0017, three to the proposed *Action Plan for Upper Elk River Sediment Total Maximum Daily Load*, an amendment to the *Water Quality Control Plan for the North Coast Region* (Basin Plan), and two to the Response to Comments document.

The modification to Resolution No. R1-2016-0017 is to clarify that a TMDL adopted as a basin plan amendment requires approval by the State Water Resources Control Board and Office of Administrative Law, in addition to the U.S. Environmental Protection Agency. The modifications to the proposed Basin Plan Amendment are with respect to the description of the Elk River Watershed Stewardship Program. The first modification is to align the language in the Basin Plan regarding the Elk River Watershed Stewardship Program with language set forth by the Stewardship Steering Committee in a fact sheet dated March 22, 2016. The second modification is to reflect a revised contract end date for the Watershed Stewardship Program. The third modification is to strike the word “special” when describing studies that the Science and Coordinated Monitoring workgroup of the Watershed Stewardship Program may recommend to further stewardship goals. The modifications to the Response to Comments document is to refine the description of the issue associated with use of Little River data, as well as the response, which defers to future studies to more fully address uncertainty. Each of these changes is presented below; additions are shown in underlined text and deletions in ~~strikeout text~~.

1. Page 1, #3 of Resolution R1-2016-0017 has been modified, as follows:

A TMDL in the form of a basin plan amendment must be adopted by the Regional Water Board, approved by the State Water Resources Control Board (State Water Board), and approved by USEPA. For the Regional Water Board to adopt and the State Water Board to approve a the TMDL it must be accompanied by a Program of Implementation.

2. Section VI of the proposed Basin Plan Amendment has been modified, as follows:

“The Elk River Watershed Stewardship Program will work to accomplish the following goals:

- a. ~~Promote shared understanding and seek agreements~~Seek common ground among diverse participants.
- b. Identify strategies and solutions to:
 - i. Improve the hydrologic, water quality, and habitat ~~functions~~ conditions of Elk River;
 - ii. Reduce nuisance flooding of ~~private properties~~ and improve public transportation routes during high water conditions; and
 - iii. Improve ~~domestic-residential~~ and agricultural water supplies.
- c. Promote coordinated science and monitoring and ~~adaptive management~~.

3. Section VI of the proposed Basin Plan Amendment has been modified as follows:

“Initial program funding is provided by 319(h) grant funds from the USEPA and will support the stewardship efforts through ~~2017~~2018.”

4. Section VII of the proposed Basin Plan Amendment was modified as follows:

“Finally, the Science and Coordinated Monitoring workgroup of the Watershed Stewardship Program will recommend monitoring and ~~special~~ studies as necessary to address the resource protection goals of the group and answer specific questions.”

5. Section A-4 of the Response to Comments document was modified to refine the Issue as follows:

“Dr. MacDonald and CAL FIRE commented on the use of annual water yields for the Little River as a reference gage station for Elk River; the gage station at Elk River operated only between water years 1958 through 1967. Both MacDonald and CAL FIRE noted that annual water yields were an inappropriate measure, citing poor correlations with annual sediment yields. Both suggested instantaneous maximum annual peak flows were the better measure. CAL FIRE pointed out two annual peak flows that corresponded with the 1988-1997 time period. MacDonald performed a regression analysis to relate annual maximum peak flows and annual sediment yield for gage stations operated by HRC, finding a relatively high coefficient of determination and concluding that “differences in management-related sediment sources over time are primarily due to differences in the amount and type of management activities rather than fluctuations in annual rainfall or annual maximum peak flows.” Board member Hales also provided feedback on the use of Little River data.

6. Section A-4 of the Response to Comments document was modified to refine the Response as follows:

“As requested by commenters, staff has reproduced Figure 16 from the Technical Report (Figure 1 below) using annual peak flows for Little River instead of annual water yield. Annual peak flows from specific years should not be compared to the average sediment loading from Elk River over a time period as CAL FIRE has done, because individual datum of one variable should not be compared to the mean of a different variable (i.e. an ecological fallacy of inference between aggregate and individual data). For the following comparisons, staff uses median peak flows given the lack of corresponding historical annual sediment loads (as opposed to average loads over a time period). The median peak flow for the time period 1988-1997 was the lowest for the 1956-2011 record, yet sediment loading for the same period (1988-1997) was the highest according to Figure 15 from the Technical Report. From 1975 onwards, median peak flows on Little River did not differ greatly, while estimated sediment loadings from Elk River have changed during this time period. The low sediment load for the years 2004-2011 from Figure 15 may seem to indicate that management practices have improved, but the narrow distribution of peak flows at Little River for this time period implied a lack of major peak flow events, ~~bringing~~bringing uncertainty as to the effect of ~~changing~~improving management practices. See Attachment 2 for further analysis and discussion on this topic. Nevertheless, while annual maximum peak flows can be good predictors for annual sediment yield, the sum of smaller peak flow events and their sediment discharge can exceed the discharge from the annual maximum peak flow. The uncertainties associated with the analyses described above can be addressed by future studies, including HRC’s Railroad Gulch paired watershed study, and studies recommended by the Elk River Watershed Stewardship Program, and will be informed by the modeling results produced by the Elk River Recovery Assessment. ~~With respect to weather effects, MacDonald concurs by concluding that “differences in management-related sediment sources over time are primarily due to differences in the amount and type of management activities rather than fluctuations in annual rainfall or annual maximum peak flows.”~~”