

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION

RESOLUTION NO. R1- 2016- 0017

Adopting Action Plan for the Upper Elk River Sediment TMDL

WHEREAS, the California Water Quality Control Board, North Coast Region (Regional Water Board) finds that:

1. The North Coast Regional Water Quality Control Board (Regional Water Board) and the U.S. Environmental Protection Agency (USEPA) have listed the Elk River watershed under the Clean Water Act section 303(d) as a sediment-impaired waterbody. Sediment discharges and sedimentation exceed the water quality objectives for sediment, suspended material, settleable matter, and turbidity resulting in adverse impact to several beneficial uses, including domestic water supplies (MUN), agricultural water supplies (AGR), cold water habitat (COLD); spawning, reproduction and early development (SPWN); rare, threatened, or endangered species (RARE), and recreation (REC-1 and REC-2). Sedimentation has also resulted in conditions of nuisance, including elevated rates of annual flooding, loss of property, loss of use of property, loss of access to property, and risk to human health and welfare.
2. Clean Water Act section 303(d) requires states to address impaired waters by developing a total maximum daily load (TMDL) that establishes levels necessary to attain water quality standards. A TMDL is defined as the sum of the individual waste load allocations for point sources, load allocations for nonpoint sources, and natural background. (40 CFR § 130.2) Under the state's Porter-Cologne Water Quality Control Act (Wat. Code, §§ 13000 et seq.), the Regional Water Board must include an implementation plan when it adopts a TMDL as a Basin Plan Amendment. (See Wat. Code, § 13242.) The Elk River Watershed has been divided into 3 subbasins: Upper Elk River Watershed, Upper Little South Fork Elk River, and Lower Elk River Watershed. This sediment TMDL addresses impairments in the 44.2 square mile (28,288 acres) Upper Elk River Watershed. The Upper Little South Fork Elk River is a subwatershed contained wholly within in the boundaries of the Headwaters Forest Reserve managed by the Bureau of Land Management and maintaining many of its original old growth redwood characteristics, meets water quality standards, and should be removed from the 303(d) list of Impaired Waters.
3. A TMDL 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 TMDL it must be accompanied by a Program of Implementation. For the USEPA to approve a TMDL it must have the following elements: problem statement; description of the Water Quality Standards to be addressed by the TMDL; numeric targets; linkage analysis; source analysis; TMDL including margin of safety, seasonal variations, and

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critical conditions; load and waste load allocations; and public involvement. For TMDL implementation projects to be eligible for federal grant funds under Section 319(h) of the Clean Water Act, the nine key elements of a non-point source plan must be addressed by the Program of Implementation.

4. The Regional Water Board has developed a sediment TMDL for the Upper Elk River. This resolution adopts the Action Plan for the Upper Elk River Sediment TMDL (hereinafter known as the TMDL Action Plan). The TMDL Action Plan includes all of the required elements of a TMDL for Regional Water Board, State Water Board, and USEPA adoption and approval.
5. The framework and information for the TMDL Action Plan were first reported in the *Peer Review Draft Staff Report to Support the Technical Sediment TMDL for the Upper Elk River*. Regional Water Board staff subsequently developed an internal report, which included elements of the Peer Review Draft, along with additional content and analyses developed in response to the scientific peer review and informal public comments. The *Upper Elk River: Technical Analysis for Sediment* (Technical Report) (Tetra Tech, October 2015) provides a concise synthesis of the data, analyses, results, and conclusions from the Peer Review Draft, the internal report, and additional reports from dischargers (e.g., Report of Waste Discharge). The Technical Report provides the scientific basis for the sediment TMDL for the Upper Elk River Watershed.
6. The purpose of the TMDL is to identify the river's capacity to transport sediment loads while meeting water quality standards, restoring beneficial uses, and preventing nuisance conditions. The Regional Water Board has confirmed the water quality impairment due to sediment and sedimentation, confirmed exceedances of sediment-related water quality standards, developed indicators and numeric targets associated with hillslope stability and stream channel recovery, assessed and quantified the sources of sediment, confirmed a linkage between sediment discharges and exceedances of sediment-related water quality standards, established the current sediment loading capacity, and established the sediment load reductions that are necessary to meet water quality standards. Simultaneously, the Regional Water Board has developed a program of implementation for the Upper Elk River watershed that will implement the TMDL, including considerable public outreach and involvement.
7. Sediment-related water quality objectives for the Upper Elk River Watershed have been and continue to be exceeded. These objectives are:
 - Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
 - Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.

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- The suspended sediment load and suspended sediment discharge rate of surface water shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
 - Turbidity shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof.
8. Beneficial uses of the Upper Elk River Watershed have been and continue to be impaired. These beneficial uses are:
- Domestic (MUN) and Agricultural (AGR) Water Supplies, which are impaired by excess fine sediment that fills pools, promotes bacteriological growth, produces offensive tastes and odors, reduces effectiveness of disinfection, and causes damage to equipment.
 - Salmonid Habitat-Related Uses (COLD, SPWN, MIGR, RARE), which are impaired by excess fine sediment that fills pools and gravels and impairs spawning, feeding, migration and respiration.
 - Contact (REC-1) and Non-contact (REC-2) Recreation, which are impaired by excess fine sediment that fills pools, promotes excess vegetative growth, and anaerobic conditions that produce foul odors.
9. Excessive flooding results from sediment deposition in the impacted reach¹, with overbank flooding occurring on average of four times per year. The excess flooding documented in the impacted reach constitute nuisance conditions as defined by Porter-Cologne in that it:
- (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;
 - (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and,
 - (3) Occurs during, or as a result of, the treatment or disposal of wastes.
10. Historic land management activities in the Upper Elk River Watershed caused significant sediment discharge, sedimentation, and aggradation in the impacted reach, which has altered the system's equilibrium in such a manner as to impair beneficial uses and cause nuisance conditions. Further, ongoing sediment mobilization and transport and sediment discharges from current land management activities cause additional aggradation, beneficial use impairment, and worsening nuisance conditions.

¹ The impacted reach extends from the confluence of Brown's Gulch on the North Fork Elk and Tom's Gulch on the South Fork Elk to the mainstem Elk River at Berta Road and is contained within the delineated boundaries of the Upper Elk River Watershed.

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11. The goal of the TMDL Action Plan is to achieve sediment related water quality standards, including the protection of the beneficial uses of water in the upper watershed and prevention of nuisance conditions.
12. The source analysis of the TMDL Action Plan estimates a total annual average sediment load of $452 \text{ yd}^3 \cdot \text{mi}^{-2} \cdot \text{yr}^{-1}$ for all sources within the Upper Elk River Watershed for the period 2004 to 2011, with approximately 25% of the load that enters the impacted reach remaining in the impacted reach.
13. In accordance with 40 C.F.R. Part 130.2(f), the loading capacity of a water is “the greatest amount of loading that a water can receive without violating water quality standards.” Sediment loading capacity of the Upper Elk River is reasonably defined as zero (loading capacity = 0), until such time as the impacted reach can be remediated and channel function restored. As such, the total maximum daily load of sediment that can be discharged on an annual basis must be zero (TMDL = 0).
14. In accordance with 40 C.F.R. Part 130.2(g), “load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments...” To accomplish a zero sediment TMDL, the load allocation assigned to landowners in the Upper Elk River Watershed must be established as zero (LA = 0). The zero load allocation does not constitute an effluent limitation or a waste load allocation, and the Board has discretion on how it chooses to implement it. The zero load allocation is a basic construct that directs the Board to craft waste discharge requirements in a manner that reduce and eliminate waste discharges to the maximum extent practicable.
15. In accordance with 40 C.F.R. Part 130.2(h), “the portion of the receiving water’s loading capacity that is allocated to one of its existing or future point sources of pollution” is called a wasteload allocation. There currently are no point source discharges of sediment in the Upper Elk River Watershed and a point source discharge prohibition is in effect for all of the North Coast Region except the Mad, Eel, and Russian rivers. Nonetheless, a sediment waste load allocation for any future point source discharges to the Upper Elk River Watershed is defined as zero (WLA = 0).
16. The Clean Water Act, section 303(d) and the associated regulations at 40 CFR §130.7 require that a TMDL include a margin of safety that takes into account any lack of knowledge concerning the relationship between the pollutant loads and the desired receiving water quality. The margin of safety may be incorporated implicitly by making conservative assumptions in calculating loading capacities, waste load allocations, and load allocations. Estimating the sediment loading capacity of a natural system as zero is inherently conservative since no amount of source control, remediation, and restoration can completely eliminate sediment

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transport downstream. In addition, the TMDL is derived from the sediment source analysis, which likewise incorporated multiple conservative assumptions when applying measurements of surface erosion, landslide, and stream bank erosion across all the subwatersheds.

17. A TMDL must describe how seasonal variations and critical conditions were considered. Typical of temperate Mediterranean climates, precipitation in the Upper Elk River Watershed falls primarily during the winter period, with considerable intra- and inter-annual variation. Sediment delivery is strongly associated with storm events, resulting in most sediment discharge also occurring during winter months. Delivered sediment volumes were measured and estimated from multiple source types for individual years, but averaged over periods that included multiple years. The most recent period of analysis is 2004 to 2011, capturing 8 years of variation. Critical conditions are represented by the period of 1988 to 1997 when a combination of excessive timber harvest rates, poor management practices, and large winter storm events resulted in unprecedented rates of sediment delivery.
18. The TMDL Action Plan includes a Program of Implementation for the Upper Elk River watershed that identifies a combination of regulatory and non-regulatory implementation actions that will lead to recovery of beneficial uses and prevention of nuisance conditions in the Upper Elk River. The three main components of the Program of Implementation detailed in the TMDL Action Plan include:
 - a. Revising applicable regulatory programs to reduce sediment loads from new and bring existing sources toward the load allocation;
 - b. Developing and implementing an instream and channel remediation and restoration program to improve hydraulic and sediment transport in the impacted reaches of Upper Elk River; and
 - c. Establishing a Watershed Stewardship Program to serve as an umbrella in support of beneficial use enhancement, prevention of nuisance, and a trajectory of watershed recovery.
19. As detailed in the TMDL Action Plan, the Program of Implementation describes the nature of actions necessary to achieve objectives and includes recommendations to both private and public entities. It also defines a time schedule for actions to be taken and monitoring to determine compliance. The TMDL Action Plan provides for active monitoring and reporting, adaptive management, and Regional Water Board update and review in five years.
20. The components of the Program of Implementation provide reasonable assurance that the TMDL will be met. Sediment sources will be controlled by implementation of waste discharge requirements (WDR) or waivers with enforceable provisions, timelines, and monitoring requirements. Zero sediment load allocations will be

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implemented via WDRs and waivers of WDRs until such time as the non-regulatory program elements have restored supporting conditions or, in the absence of sufficient progress, other regulatory methods of achieving TMDL goals are reconsidered. CalTrout is under contract with the State Water Resources Control Board (State Water Board) to complete the Elk River Recovery Assessment with a final report due in 2017, which will define the actions necessary to restore supporting conditions in the lower river. Humboldt County will soon be under contract with the State Water Board to lead the development of the Watershed Stewardship Program with set implementation requirements to be completed by July 31, 2018, including:

- Project Management
- Steering Committee Activities
- Stakeholder Outreach and Coordination
- Development of an Action Plan for Flooding-Related Community Health and Safety Projects
- Development of an Action Plan for Sediment Remediation
- Development of an Action Plan for Science and Monitoring Coordination

21. The adoption of the proposed Basin Plan Amendment is subject to the requirements of the California Environmental Quality Act (CEQA). (Pub. Resources Code, § 21159.) Pursuant to Public Resources Code section 21080.5, the Resources Agency has approved the Regional Water Boards' basin planning process as a "certified regulatory program" that adequately satisfies CEQA requirements for preparing environmental documents. (Cal. Code Regs., tit. 14, § 15251, subd. (g); Cal. Code Regs., tit. 23, § 3782.) CEQA compliance may be comprised of a single document or a compilation of documents. (Cal. Code Regs., tit. 23, § 3777.)
22. On March 13, 2014, the Regional Water Board adopted the Temperature Policy, which was subject to CEQA as a "certified regulatory program." (Cal. Code Regs., tit. 14, § 15251, subd. (g); Cal. Code Regs., tit. 23, § 3782.) The Regional Water Board developed and certified a Substitute Environmental Document (SED) consistent with the requirements of section 21159, including the CEQA Environmental Checklist containing an analysis of environmental impacts, mitigation measures to reduce or avoid those impacts, and alternative means of compliance that would avoid or eliminate environmental impacts. (Pub. Resources Code, § 21159, subd. (a)(1)-(3); Cal. Code Regs., tit. 14, §§ 15187, subds. (b), (c)(1)-(3), 15189.) The SED analyzed and addressed potential impacts and mitigation measures of a full range of potential projects that could be implemented to meet temperature objectives, including but not limited to measures to control sedimentation, measures to address surface impoundments, and measures to address aquatic ecosystem restoration.
23. Various compliance measures contemplated under the regulatory portion of the TMDL Action Plan are similar or identical to SED compliance measures associated

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with forestry practices to reduce or eliminate erosion and sedimentation. These include limited development and harvest actions in riparian areas, road/trail landing closures/treatment, forest trails and landings, slide stabilization, soil stabilization or fill and cut slopes, removal of unstable fill, in-stream bioengineering, riparian planting, stream bank/shoreline protection, and stream or river bank stabilization with native vegetation or other bioengineering techniques. Various projects that may be implemented under the Recovery Assessment and Watershed Stewardship Program are similar if not identical to the various projects contemplated under the Temperature Policy including large scale excavation, bioengineering, instream restoration, stream bank stabilization, new channel construction, off-channel sediment detention basins, levee construction or modification, vegetation management, infrastructure improvements, creation of inset floodplains, high flow channels, and placement of instream large woody debris. The SED includes a programmatic statement of overriding considerations if the State or Regional Water Board finds that a project's potentially significant, unavoidable environmental impacts could be acceptable in light of the benefits of attainment and protection of beneficial uses. Decision-makers will have the benefit of project-level review of any future large-scale restoration projects.

24. On January 24, 2015, the Regional Water Board adopted its *Policy in Support of Restoration in the North Coast Region* (Restoration Policy) (R1-2015-0001 & R1-2015-0004), and relied on the analysis contained in the Temperature Policy SED for CEQA compliance. Pursuant to California Code of Regulations, title 14, section 15164, the Regional Water Board prepared an addendum to the SED to analyze factors that would trigger the need to prepare subsequent CEQA analyses under California Code of Regulations, title 14, section 15162, subdivision (a). The addendum reports no anticipated new or worsened water quality impacts that are expected to result from the adoption of the Restoration Policy, which also contemplates the types of restoration projects that may occur in the impacted reach. The Regional Water Board therefore finds that it is not required to prepare subsequent or supplemental CEQA documentation for the TMDL Action Plan, and will rely on the Temperature Policy SED and Addendum for CEQA compliance. The Regional Water Board has considered the collective CEQA documentation, including the Temperature Policy SED and Addendum. A Notice of Determination will be filed within five (5) days after the State Water Resources Control Board and Office of Administrative Law (OAL) approval of the Basin Plan Amendment, in accordance with section 21080.5(d)(2)(E) of the Public Resources Code and the California Code of Regulations, title 23, section 3781.
25. The proposed Order for HRC is accompanied by a project-specific Initial Study and draft Mitigated Negative Declaration (MND) to analyze potential impacts from the proposed Order, and identify mitigation measures to reduce those impacts. Secondary implementation actions are also generally subject to various existing permitting structures that have project-specific CEQA coverage. For example,

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projects on BLM land must be enrolled under Order R1-2015-0021 (Waiver of Waste Discharge Requirements for Nonpoint Source Discharges Related to Certain Federal Land Management Activities on National Forest System Lands in the North Coast Region).

26. The proposed Basin Plan Amendment is consistent with the provisions of the State Water Resources Control Board (State Water Board) Resolution No. 68-16, which is the "Statement of Policy with Respect to Maintaining High Quality Waters in California." Resolution No. 68-16 incorporates the federal Antidegradation Policy. The intention of the proposed TMDL Action Plan is to support the implementation of restorative actions designed to recover and protect instream beneficial uses and impaired aquatic ecosystems. The proposed TMDL Action Plan does not promote or authorize the permanent lowering of high quality waters.
27. In the environmental analyses summarized above, the Regional Water Board did find that some restoration projects could result in potentially significant individual and cumulative water quality impacts. Available mitigation measures in some instances may not reduce impacts enough to prevent pollution or prevent degradation, but specific overriding economic, legal, social, technological, or other benefits outweigh any adverse environmental impacts resulting from potential impacts that may be caused by certain restoration projects. With respect to exceedances of water quality objectives, short-term impacts may be acceptable in cases where long term benefits to beneficial uses outweigh short term impacts, based on detailed, site-specific information and findings. Thus, each site-specific activity must be evaluated on a project level to balance the factors in an individual given context. Site- or activity-specific projects that will cause degradation to existing high quality waters will undergo additional analysis to determine whether the change in water quality is consistent with maximum beneficial use to the people of the State, and will not unreasonably result in water quality less than that prescribed in the Basin Plan and other policies.
28. The Temperature SED and Restoration Addendum provide programmatic consideration of alternatives, in addition to the Elk-specific alternatives generated in the planning process. The Regional Water Board has considered economic and other relevant factors in carefully crafting the TMDL Action Plan. This is evident in the evolution of the TMDL Action Plan in consideration of and in response to numerous public comments and concerns. The TMDL Action Plan addresses factors contributing to impairments, and establishes three primary mechanisms (regulation of upslope discharges under WDRs or Waivers, Recovery Assessment, and Watershed Stewardship Program) to achieve sediment related water quality standards, including the protection of the beneficial uses of water. The TMDL Action Plan identifies a process for assessing and implementing necessary and feasible remediation and restoration actions, and describes a program of implementation to be considered and incorporated into regulatory and non-regulatory actions of the

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Regional Water Board and other stewardship partners in the watershed. The TMDL Action Plan represents the best approach for advancing water quality improvements forward in a reasonable and meaningful way. Management controls can be modified (relaxed or strengthened) over time based on further evaluation of watershed conditions and progress towards restoring beneficial uses and abating nuisance conditions.

29. The proposed Basin Plan Amendment meets the “Necessity” standard of the Administrative Procedures Act, Government Code section 11353, subdivision (b). The proposed TMDL Action Plan is an important tool for the protection, enhancement, and recovery of beneficial uses. The TMDL is a federal law requirement. Moreover, it provides a technical basis for new WDRs for timber operations in the watershed, and codifies a framework for developing and implementing projects designed to restore the beneficial uses in the impacted reach.
30. The Regional Water Board has considered the factors set forth in Water Code section 13241 in developing the proposed TMDL Action Plan, including consideration of the past, present, and future beneficial uses of water. A primary purpose of the proposed TMDL Action Plan is to restore the beneficial uses that are impaired in the impacted reach. Economic considerations helped the Regional Water Board balance the responsibilities of upstream dischargers and the needs of the lower reach and have resulted in the creation of the Watershed Stewardship Program as a process to identify substantial public funding for projects that will help restore conditions downstream. The proposed TMDL Action Plan takes into account the environmental characteristics of the hydrographic unit under consideration, focusing largely on the lack of assimilative capacity in the impacted reach. The proposed TMDL Action Plan aims for water quality conditions that could reasonably be achieved through the coordinated control of all factors affecting water quality in the area.
31. The scientific basis of the proposed TMDL Action Plan has been reviewed by external scientific peer reviewers in accordance with Health and Safety Code section 57004. The Regional Water Board staff submitted the Peer Review Draft Staff Report to Support the Technical Sediment TMDL for the Upper Elk River (Peer Review Draft), for scientific peer review in April 2013. Scientific peer review comments and staff’s responses to comments were subsequently posted on the Regional Water Board website.
32. Regional Water Board staff has provided extensive outreach and opportunity to comment on the Upper Elk TMDL. Stakeholder involvement has occurred through numerous venues, including public workshops, staff presentations, postings on the Regional Water Board’s website, and email distribution. On December 23, 2015, the Regional Water Board provided public notice of this proposed Basin Plan

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Amendment and opened the 45 day public comment period, which closed on February 15, 2016.

33. On April 7, 2016, the Regional Water Board held a public hearing and received oral comments and testimony on the proposed TMDL Action Plan Basin Plan Amendment. All comments were considered.
34. The Basin Plan Amendment must be reviewed and approved by the State Water Board, the Office of Administrative Law (OAL), and the USEPA. Once the State Water Board and OAL have acted on this matter, the State Water Board will forward the approved amendment to the USEPA for review.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. Pursuant to section 13240 and 13242 of the Water Code, the Regional Water Board, after considering the entire record, including oral testimony at the hearing, hereby adopts the proposed Action Plan for the Upper Elk River Sediment TMDL, an amendment to the Water Quality Control Plan for the North Coast Region.
2. The Executive Officer is directed to forward copies of the adopted Basin Plan Amendment to the State Water Board in accordance with the requirements of Water Code section 13245.
3. The Regional Water Board requests that the State Water Board approve the adopted Basin Plan Amendment in accordance with Water Code sections 13245 and 13246 and subsequently forward the adopted Basin Plan Amendment to OAL and the USEPA.
4. The Regional Water Board requests that Upper Little South Fork Elk River be delisted from the federal Clean Water Act section 303(d) list of impaired waterbodies.
5. If, during the approval process, the State Water Board or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Regional Water Board of any such changes.

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Certification

I, Matthias St. John, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, North Coast Region, on May 12, 2016.



Matthias St. John
Executive Officer