

Response to Comments
on
Draft Order NO. R1-2019-0021
Waste Discharge Requirements
For

Nonpoint Source Discharges and Other Controllable Water Quality Factors Related to
Timber Harvesting and Associated Activities Conducted by Humboldt Redwood Company,
LLC in the
Upper Elk River Watershed

Humboldt County

Prepared by:
Staff of the North Coast Regional Water Quality Control Board
June 19, 2019

Procedure

On March 14, 2019, the North Coast Regional Water Quality Control Board (Regional Water Board or RWB) issued a Notice of Public Hearing and Intent to Adopt a subsequent mitigated negative declaration for Draft Order No. R1-2019-0021, Waste Discharge Requirements for Nonpoint Source Discharges and Other Controllable Water Quality Factors Related to Timber Harvesting and Associated Activities Conducted by Humboldt Redwood Company, LLC in the Upper Elk River Watershed, Humboldt County (draft Order). The purpose of the draft Order is to provide a water quality regulatory structure to: (1) update existing Order No. R1-2016-0004 to ensure the waste discharge requirements (WDRs) will incorporate specific provisions that implement all of the hillslope indicators and numeric targets contained in the Action Plan for the Upper Elk River Sediment Total Maximum Daily Load (TMDL Action Plan), and (2) ensure that all anthropogenic discharges of sediment are eliminated to the extent feasible and, if not feasibly eliminated, minimized, as soon as feasible, but no later than 2031.

On March 14, 2019, Regional Water Board staff also submitted the draft Order, subsequent mitigated negative declaration (Subsequent MND), and supporting documentation (i.e., Initial Study and attachments) to the State Clearinghouse for a 30-day California Environmental Quality Act (CEQA) review and assigned it SCH# 2015122010. In addition to the 30-day CEQA review, the Public Notice initiated the Regional Water Board's 32-day formal public comment period, which ended on April 15, 2019. The notice of the draft Order was distributed to the Regional Water Board's Lyris list, two newspapers in the Region (Press Democrat, Eureka Times Standard), and was posted on the Regional Water Board's website.

The Public Notice stated that Regional Water Board would conduct a public hearing to consider adoption of the Order and Subsequent MND on June 19 or 20, 2019, at 9:00 a.m., in the City Council Chambers at the Eureka City Hall in Humboldt County or at the location to be announced in the Regional Water Board's agenda and on its website:
<http://www.waterboards.ca.gov/northcoast/>.

Substantive comments received during the March 14 to April 15, 2019 comment period are summarized below, followed by Regional Water Board staff's responses. Where commenters have made similar comments, those comments are summarized, and a single response is presented. Original copies of all written comment letters are attached to this document.

Comments received during the March 14, 2019 – April 15, 2019 Comment Period:

Stephanie Bennett, Elk River resident
Fred Blatt, public
Rob DiPerna, Environmental Protection Information Center (EPIC)
Keith Gilliss, Chair - California Board of Forestry and Fire Protection (BOF)
Michael Golz, Stanford Environmental Law Clinic Certified Law Student
Vivian Helliwell, Pacific Coast Federation of Fishermen's Associations and Institute for Fisheries Resources
Jennifer Kalt, Humboldt Bay Keeper
Jerry Martien, Friends of Elk River
Mike Miles, Humboldt Redwood Company (HRC)
Felice Pace, Water Chair, North Group, Redwood Chapter Sierra Club
Thomas W. Porter, California Department of Forestry and Fire Protection (CAL FIRE)
Gayle Totton, Native American Heritage Commission
Jesse Noel, Elk River resident
Wayne Whitlock, Attorney for HRC
Kristi Wrigley, Elk River resident

Overview

On November 30, 2016, the Regional Water Board adopted Order No. R1-2016-0004, *Waste Discharge Requirements for Nonpoint Source Discharges and Other Controllable Water Quality Factors Related to Timber Harvesting and Associated Activities Conducted by Humboldt Redwood Company (HRC), LLC In the Upper Elk River Watershed, Humboldt County (2016 Order)*. The Board also adopted an associated Initial Study (IS) and MND developed pursuant to the CEQA to analyze potential impacts from the 2016 Order.

The 2016 Order established specific requirements based largely on HRC's report of waste discharge (ROWD), with additional measures as warranted, to meet applicable water quality requirements. Both the 2016 Order and the draft Order incorporate and include the following components:

- Measures to prevent sediment discharge associated with:
 - Forest Management
 - Riparian Zone Protection
 - Road Management
 - Landslide Prevention
 - Wet Weather Restrictions
 - Limited Harvesting in High Risk Subwatersheds
- Inventory and treatment of existing controllable sediment sources
- Watershed restoration efforts
- Monitoring and reporting requirements

On May 12, 2016, the Regional Water Board approved the Action Plan for the Upper Elk River Sediment TMDL (TMDL Action Plan), followed by: the State Water Resources Control Board (State Water Board) on August 1, 2017; the Office of Administrative Law (OAL) on March 8, 2018; and the United States Environmental Protection Agency (EPA) on April 4, 2018, the final step in the process necessary for the Action Plan to be amended into the Water Quality Control Plan for the North Coast (Basin Plan).

TMDL Action Plan Program of Implementation

The Program of Implementation, one of the key components of the TMDL Action Plan, identifies a combination of regulatory and non-regulatory actions designed to lead to the attainment of water quality objectives, recovery of beneficial uses, protection of high-quality waters, and abatement of nuisance conditions in the Upper Elk River (UER) Watershed. The three main components of the TMDL Action Plan's program of implementation include: waste discharge requirements (WDRs), the Elk River Recovery Assessment (ERRA), and the Elk River Watershed Stewardship Program (Stewardship Program).

WDRs are designed to control the discharge of sediment loads to watercourses from new and existing sources in lands in the Upper Elk River Watershed and are the primary regulatory actions under the TMDL Action Plan's program of implementation. The goal of the WDRs in the draft Order is to establish a management framework to achieve compliance with water quality objectives in receiving waters through implementation of stringent management practices designed to eliminate to the extent feasible and, if not feasibly eliminated, minimize, as soon as feasible, but no later than 2031, all anthropogenic discharges of sediment from HRC lands.

The ERRA and Stewardship Program are two non-regulatory components of the TMDL Action Plan designed to be integrated, adaptive, and leveraged to inform an effective restoration strategy. The Regional Water Board has initiated the Stewardship Program to coordinate stakeholder participation in the efforts to recover the beneficial uses of the Elk River watershed and address nuisance flooding. The Stewardship Program fulfills the following roles:

- Coordinate directly with watershed residents, local, state, and federal resource agency staff, and other stakeholders to solicit input and transmit information on recovery program activities that are ongoing throughout the watershed.
- Provide a broad umbrella under which specific working groups form to coordinate resource management issues in a collaborative and transparent way.
- Seek to build partnerships, interpret technical studies for stakeholders, landowners, and the public, and identify pilot projects and future remediation actions that are feasible, fundable, and broadly supported by stakeholders.

In 2014, the Regional Water Board contracted with California Trout, Inc. (CalTrout), Northern Hydrology and Engineering, (NHE), and Stillwater Sciences (SWS) to conduct the ERRA and develop a series of sediment remediation pilot projects (Pilot Projects). The ERRA is motivated by the need to better understand if sediment deposited in the Elk River channel since approximately 1988 will remain in storage and continue to impair beneficial uses and cause nuisance flooding even with successful future reduction in watershed sediment delivery that would be achieved under the TMDL Action Plan. The ERRA analyzes the system-wide fate and transport of this stored sediment under different management scenarios, including assessing the feasibility of various mechanical channel rehabilitation actions and identifying the extent to which these actions, in combination with reduced sediment load, will lead to sustainable recovery of beneficial uses and water quality, abatement of nuisance conditions, and recovery of ecosystem functions.

In November 2018, the Regional Water Board received the report *Elk River Recovery Assessment: Recovery Framework* from the ERRA Project Team. Included with the ERRA was the proposed design for the Pilot Projects, which were co-funded by the Coastal Conservancy, with cost shares from CalTrout and HRC. This project involved the removal of the road base at the Elk River Steel Bridge and removal of trees and sediment from a portion of the connected floodplain. CalTrout and its subcontractors successfully completed construction of this project in September 2017. The Regional Water Board serves as the lead agency for two additional

sediment remediation pilot projects in the impacted reach of the Elk which are currently in the CEQA permitting phase.

State Water Board Adoption of the TMDL Action Plan

Within its adopting Resolution No. 2017-0046 for the TMDL Action Plan, the State Water Board described its understandings of the TMDL Action Plan's requirements in Finding no. 9 as follows:

- 1) The hillslope indicators and numeric targets in Table 2 apply throughout a discharger's area of land ownership and not solely in areas of active harvest;
- 2) The Regional Water Board's WDRs and any other orders for the two major landowners that conduct timber harvesting will incorporate specific provisions that implement all the hillslope indicators and numeric targets in Table 2, unless the Regional Water Board makes specific findings about why any omitted hillslope indicators or numeric targets are not appropriate or feasible;
- 3) The WDRs and any other orders for the two major landowners will also contain any additional specific provisions to ensure that all anthropogenic discharges of sediment are minimized and eliminated, and;
- 4) In the absence of a future amendment to the TMDL Action Plan, including an amendment based on successful implementation of the Watershed Stewardship Program resulting in expanded sediment loading capacity in the impacted reach, the WDRs and any other orders will require the landowners to achieve the zero load allocation for all anthropogenic discharges of sediment as soon as feasible, but no later than 2031.

In its resolution, the State Water Board directed the Regional Water Board to “*review its WDRs for the two major landowners in the Upper Elk River Watershed that conduct timber harvesting and revise the WDRs and adopt any additional orders as necessary to make them consistent with the State Water Board’s understandings of how the TMDL Action Plan will be implemented as described in finding no. 9.*”

Subsequently, on October 15, 2018, State Water Board counsel provided a letter clarifying its understanding of item 3) in Finding no. 9 as follows, “*The WDRs and any other orders for the two major landowners will also contain any additional specific provisions to ensure that all anthropogenic discharges of sediment are ~~minimized and eliminated to the extent feasible and, if not feasibly eliminated, minimized, as soon as feasible but not later than 2031~~*” [strikeout and underline are from the original October 15, 2018 letter].

Revised Report of Waste Discharge and Revisions to draft Order

On December 15, 2017, the Regional Water Board Executive Officer sent a letter to HRC advising them that the Regional Water Board was reviewing the WDRs and requested their input on how the WDRs should be revised to meet the requirements of the TMDL Action Plan and the understandings outlined in the State Water Board's Resolution.

Following discussions with Regional Water Board staff, HRC proposed several revisions to specific provisions of the 2016 Order to implement TMDL hillslope targets and load allocations. On February 1, 2019, HRC submitted the proposed revisions [Attachment F of the draft Order]. Following review of HRC's proposal and in response to the understandings and directives in the State Water Board's Resolution, the Regional Water Board developed the draft Order, which incorporates revised findings and additional requirements (referred to as “Specific

Requirements”) to address and fully implement TMDL hillslope indicators, numeric targets and the load allocation. Significant revisions to Specific Requirements in the draft Order include:

- Riparian zone protection has been expanded to require minimum 50% post-harvest overstory canopy cover within 300 feet of Class I and II watercourses and 150 of Class III watercourses;
- Wet weather requirements for hauling are more protective, requiring that between October 15 and May 1, hauling shall be limited to permanent rocked all-season roads that meet the Habitat Conservation Plan (HCP) storm-proofed standard. Winter period hauling shall cease for a period of 48 hours following a precipitation event that results in 0.25 inches or more of rainfall within any 24-hour period;
- The seasonal shut down for road construction/reconstruction has been extended from September 15 to October 15¹ to accommodate seasonal bird habitat restrictions. Between September 15 and October 15, erosion control BMPs shall be on-site and ready to deploy and shall be applied to the entire length of new road construction prior to any day for which a chance of rain of 30 percent or greater is forecast by the National Weather Service;
- The seasonal shut down for ground-based yarding and mechanical site preparation has been changed from October 1 to October 15.

As reflected in this staff response to comments, revisions have been made to the draft Order, which are reflected in the proposed Order, which the Board will consider at the June 19, 2019 public hearing. Significant changes are as follows:

- Group openings are allowed in TMDL RMZ’s for Class I and II watercourses on slopes less than 30% and from 150-300 feet slope distance from the edge of the channel;
- Road construction, reconstruction, or ground based yarding may be conducted past October 15 during extended dry periods with approval by the Regional Water Board Executive Officer, but shall cease for the remainder of the wet weather period and not resume until no earlier than May 1 of the following year when a chance of rain of 30 percent or greater is forecast by the National Weather Service for the following day;
- The rainfall trigger for road and THP area inspections, which requires that HRC inspect all roads and THP areas following any storm event that generates 3 inches or more of precipitation in a 24-hour period, has been revised to 2.5 inches or more of precipitation in a 24-hour period as measured at the Woodley Island rain gauge in Eureka.

General Responses to Comments

Regional Water Board staff believe it is important to acknowledge the impact to the lives and property of residents whose properties have been directly affected by sediment deposition and flooding in Elk River due to accelerated rates of timber harvesting and excessive sediment loading that began following the acquisition in 1986 of Pacific Lumber Company by the Maxxam Corporation. Profound differences of opinion on the potential impacts of logging in the watershed, as well as a range of recommendations regarding appropriate courses of action to mitigate those impacts, are reflected in the comment letters.

¹ The California Forest Practice Rules breaks down the full winter operating period as follows: October 15 to November 15 is defined as the “early winter operating period”; November 15 through April 1 is defined as the “winter operating period”, and April 1 to May 1 as the “late winter operating period”.

As previously mentioned, the Regional Water Board strategy for recovery of the Elk River watershed is comprised of three complimentary components: WDRs, the ERRA, and the Stewardship Program. Although the WDR framework included in the draft Order should be viewed in conjunction with various aspects of the ERRA and Stewardship Program, it must be acknowledged that the WDRs were not developed to address all aspects of the TMDL Action Plan's recovery strategy. Instead, the WDRs in the draft Order are meant to eliminate or minimize the discharge of sediment associated with land use activities on HRC lands and associated conditions in the Upper Elk River Watershed.

In developing the framework to address ongoing sediment impacts in the Upper Elk River Watershed, the Regional Water Board utilizes a combination of:

- 1) TMDL Action Plan requirements
- 2) Existing regulatory requirements (e.g., Forest Practice Rules, prescriptions derived from HRC's ownership-wide Habitat Conservation Plan [HCP]);
- 3) Watershed specific analysis,
- 4) Additional measures proposed through HRC's ROWD;
- 5) Established science as presented in peer reviewed literature;
- 6) The TMDL Technical Report²;
- 7) Knowledge/experience from people with longstanding experience in the watershed, and
- 8) Regional Water Board staff professional judgement.

Some commenters have submitted comments regarding conditions in Elk River downstream of HRC's ownership that are more appropriately addressed through the work of the ERRA Project Team and/or the Stewardship Program. Examples would be comments regarding estimating elevations of the 25, 50, and 100-year recurrence interval flood levels based on reduced channel capacity and comments regarding analyzing dissolved oxygen (DO) levels in the impact reach. These comments are beyond the scope of the Proposed Order.

The majority of commenters can be broadly categorized into two diametrically opposed groups based on their opinions regarding the potential for sediment discharge from past and present timber harvest activities, and whether any activities should be permitted by the Regional Water Board.

All commenters are generally in agreement with, or at least do not contest, the TMDL's findings that high levels of fine sediment deposited in the impacted reach of Elk River over the past 20 years were largely the result of ground disturbance from past logging and associated activities. The commenters also generally agree that these deposited sediments have resulted in channel aggradation, which continues to cause nuisance conditions for residents, including increased flooding magnitude and frequency, as well as impaired domestic and agricultural water supplies.

Elk River residents (as well as commenters associated with conservation organizations), whose properties and lives have been directly and profoundly adversely affected by elevated sediment loads, are strongly opposed to any additional logging (or at least want significantly more stringent restrictions) until beneficial uses in the impacted reach have been restored. Residents cite an abundance of both personal and anecdotal evidence, as well as analyses and conclusions from published reports, to advocate for a complete moratorium on logging in the watershed.

2 Tetra Tech, Inc., 2015. Upper Elk River: Technical Analysis for Sediment. Prepared for Environmental Protection Agency, Region 9 and North Coast Regional Water Quality Control Board. Fairfax, VA.

In contrast, HRC maintains that the restrictions on harvesting proposed in the draft Order are unnecessarily restrictive, scientifically unsupportable, and an overreach of the Regional Water Board's authority. HRC maintains that its current timber harvesting practices conducted pursuant to their Habitat Conservation Plans (HCP) and associated management plans implement appropriate harvest restrictions and best management practices (BMPs), and suggest that no additional requirements for water quality protection should be included.

At the heart of the controversy regarding whether timber harvesting in the watershed should be allowed to occur, is the uncertainty regarding the degree to which ongoing sediment deposition in the impacted reach is the result of current timber harvesting activities, or whether it represents downstream propagation of the sediment pulse generated from intensive and highly disruptive past logging practices that occurred primarily in the 1980s and 1990s.

This ongoing controversy is very real, and the Regional Water Board's decision-making relative to those competing realities has significant implications. First, Regional Water Board staff acknowledge the ongoing impacts to the lives and properties of affected residents in the lower watershed, as well as the degraded state of the beneficial uses of water in Elk River. We also acknowledge that the upstream property owners' continued operation of their businesses provides economic and social value to the community and may continue *provided* that their operations comply with all applicable water quality requirements.

If it could be clearly demonstrated, as some commenters contend, that it is not possible to conduct any timber harvesting activities without further exacerbating the watershed's impaired condition, and that a moratorium on logging is fundamentally necessary to eliminate the watershed's impairment, address nuisance flooding, and recover beneficial uses, then an outright prohibition on further logging would appear to be appropriate and necessary. However, the TMDL Action Plan and the supporting Technical Report, based on extensive studies of the association between land use practices and sediment production in the Upper Elk River watershed do not reach that conclusion.

Instead, the TMDL Action Plan calls for WDRs as the primary regulatory mechanism to be utilized by the Regional Water Board to require implementation of rigorous BMPs to control the nonpoint source pollution resulting from past and ongoing timber harvesting activities. To that end, the TMDL Action Plan includes hillslope indicators and numeric targets, which primarily apply to timber harvesting activities and are designed to inform Board actions and to be incorporated into orders, as appropriate and to the maximum extent feasible.

The draft Order includes many of the same fundamental approaches that are used by other regional water boards regulating timber harvest activities throughout the state. The measures included in the draft Order are based on the following performance standards and are significantly augmented for this Order beyond typical standards because of the Regional Water Board's recognition of the Elk River Watershed's inherently erodible nature, minimal capacity for low gradient reaches to transport sediment delivered from upstream, and ongoing impairment:

- Retain sufficient trees to reduce hydrologic effects such as increased peak flow and soil moisture as well as loss of root strength;
- Implement harvest rate limits at the subwatershed scale in order to limit the overall extent of harvest related disturbance;
- Minimize exposed soil;
- Minimize excavations by road and skid trail construction;
- Minimize activity in riparian zones;
- Minimize hydrologic connectivity of roads; and

- Minimize disruption of natural drainage patterns.

As such, the Regional Water Board developed the draft Order, which includes stringent limitations on allowable activities, temporary moratorium on logging in highly erodible geology types, requires expansive protection zones around watercourses, and limits allowable winter operating period activities, while maintaining HRC's ability to continue to conduct timber harvesting activities. These stringent requirements are designed to implement the requirements of the TMDL Action Plan, including the hillslope indicators, numeric targets and load allocation.

In the section below, Regional Water Board staff summarize common issues addressed by commenters, including opposing viewpoints on each issue, and then present a detailed discussion in our response. Some comments refer to very specific details and therefore are responded to individually. Wherever possible, staff present comments as direct quotes so that commenters exact words are represented. In response to some comments, Regional Water Board staff have made revisions to the draft Order, shown in redline-strikeout text in the Proposed Order.

Responses to Specific Comments

1. **Comment** – Several commenters (Rob DiPerna, Vivian Helliwell and Michael Golz) stated that the draft Order is not consistent with the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (NPS Policy), and Basin Plan requirements, including total maximum daily load (TMDL) implementation measures. These commenters maintain that the draft Order violates the Water Code and NPS Policy because it fails to require specific, enforceable standards to control nonpoint sources of pollution that are expected to attain the water quality objectives laid out in the Basin Plan. They maintain the draft Order does not comply with four of the five key elements of the NPS policy in that;
 - The draft Order relies on management practices the effectiveness of which the Regional Water Board has not adequately analyzed (Key Element 2);
 - The draft Order lacks specific time table with quantifiable milestones (Key Element 3);
 - The draft Order provides inadequate feedback mechanisms (Key Element 4);
 - The draft Order fails to adequately specify the consequences triggered by noncompliance with the Order (Key Element 5).

Response – The draft Order was developed in response to the State Water Board's Resolution and was designed to comply with the NPS Policy and Basin Plan requirements. Under the NPS Policy, the Regional Water Board must find that a program will promote attainment of water quality objectives and must meet five key elements that include: 1) a program to address nonpoint source (NPS) pollution in a manner that achieves and maintains water quality objectives and beneficial uses as well as any applicable antidegradation requirements; (2) a description of the practices to be implemented and processes to be used to select and verify proper implementation of practices; (3) a time schedule to achieve water quality requirements as well as corresponding quantifiable milestones designed to measure progress toward reaching specified requirements; (4) feedback mechanisms to determine whether the program is achieving its purpose; and (5) a description of the consequences for failure to achieve the stated purpose.

The draft Order addresses each of these elements as described below:

a. The draft Order meets Key Element #1 of the NPS Policy as its primary purpose is to address nonpoint source discharges, primarily anthropogenic sediment from HRC's timber harvesting and associated activities conducted in the Upper Elk River watershed.

Implementation of the measures required by the draft Order will address anthropogenic sediment discharges in a manner that attains objectives, protects beneficial uses, and meet the requirements of the TMDL Action Plan. The draft Order includes requirements deemed necessary by the Regional Water Board in order to implement water quality regulations contained in the Basin Plan, including hillslope indicators and numeric targets from Table 2 of the TMDL Action Plan and to achieve the intent of the zero-load allocation. The additional requirements are based on information contained in the evidentiary record that supports this draft Order, including the Technical Report and additional evidence that informed the Regional Water Board's decision to adopt the TMDL Action Plan. The draft Order incorporates and includes the components listed below that establish stringent requirements to control nonpoint source discharges from HRC's forest activities in Upper Elk River:

- Measures to prevent sediment discharge associated with:
 - Forest Management
 - Riparian Zone Protection
 - Road Management
 - Landslide Prevention
 - Wet Weather Restrictions
 - Limited Harvesting in High Risk Subwatersheds
- Inventory and treatment of existing controllable sediment sources
- Watershed restoration efforts
- Monitoring and reporting requirements

The draft Order provides for regular inspections by Regional Water Board and HRC staff. Additionally, the draft Order requires HRC to report any unauthorized discharges of waste that is causing or contributing to a violation or an exceedance of an applicable water quality requirement or a violation of a WDR prohibition. HRC is required to implement corrective measures immediately following discovery of unauthorized discharges and must notify the Regional Water Board by telephone or email as soon as possible, but no later than 48 hours after the discharge has been discovered. The notification must be followed by a report within 14 days to the Regional Water Board.

HRC must revise the appropriate technical report (i.e., ECP, Inventory, or other required information as applicable) immediately after the report to the Regional Water Board to incorporate the additional management measures that have been and will be implemented, propose a schedule for implementation, and conduct any additional inspections or monitoring that is required.

b. Management measures required by the draft Order are based on well-established forest practices widely employed and tested throughout the North Coast region and beyond. Water Code section 13360 generally prevents the Regional Water Board from requiring a discharger to employ a specific method of compliance. In developing the specific and general requirements of the draft Order, the Regional Water Board has relied on a combination of established performance standards in the TMDL Action Plan that requires HRC to design, implement and report on methods and practices that meet

those established performance standards, as well as requiring additional measures as necessary to ensure compliance with the TMDL Action Plan. The Regional Water Board has set forth the practices, measures and performance standards in the draft Order as described above in **General Response to Comments** that will meet Key Element #2 of the NPS policy.

- c. The commenters state that the Regional Water Board, through implementation of the draft Order, relies on the implementation of management practices but disregards the effects of those practices on water quality. That conclusion is incorrect. The draft Order does not include explicit time schedules for compliance with applicable water quality standards because it requires dischargers to control their activities and immediately implement practices that will comply with water quality objectives. The draft Order conditions specifically implement the TMDL Action Plan numeric targets, and those conditions must be evaluated by 2021 (the due date of the first 5-year synthesis report) to assess the degree to which the WDRs have successfully controlled sediment discharges. It is important to note that when it adopted the TMDL, the Regional Water Board acknowledged that no amount of source control, remediation, and restoration can completely eliminate all sediment transport downstream. The TMDL Action Plan and this Order implement measures that will effectively minimize discharges. Section III of the draft Order establishes the following Discharge Prohibitions:
- o The discharge of soil, silt, bark, slash, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature into any stream or watercourse in the basin in quantities deleterious to fish, wildlife, or other beneficial uses is prohibited.
 - o The placing or disposal of soil, silt, bark, slash, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature at locations where such material could pass into any stream or watercourse in the basin in quantities which could be deleterious to fish, wildlife, or other beneficial uses is prohibited.

The draft Order established revised requirements to fully implement the TMDL Action Plan hillslope indicators and numeric targets to ensure that all anthropogenic discharges of sediment are eliminated or minimized. Through monitoring and reporting requirements, the draft Order sets forth quantifiable milestones and requirements that HRC must meet to ensure that the prohibitions and water quality objectives are met, and management practices are effective. In addition, as set forth in the TMDL Action Plan, by 2021 the Regional Water Board must assess the WDRs to evaluate how effective they have been in controlling sediment delivery from the upper watershed. By 2031, the Regional Water Board must evaluate the attainment of water quality objectives and beneficial uses in the watershed and revise the TMDL and load allocations accordingly.

- d. The draft Order establishes a robust feedback mechanism that provides sufficient information so that the Regional Water Board, HRC, and the public can determine if the requirements are implementing the requirements of the TMDL Action Plan or whether additional or different management practices are required. Section II.B requires that HRC provide Regional Water Board staff access onto all of HRC's timberlands within the Upper Elk River watershed for purposes of observing conditions and to document compliance or non-compliance with the draft Order.

Section IV of the draft Order establishes a Monitoring and Reporting Program (MRP) that includes inspections of roads, THP areas and landslide monitoring. Additionally, the MRP includes requirements to conduct instream water quality monitoring at established monitoring stations distributed throughout HRC's ownership in the watershed. HRC is required to submit monitoring results to the Regional Water Board each year and must include an annual work plan which describes the proposed activities for the upcoming year. The annual work plan is a planning document. Regional Water Board and HRC staff may also meet annually, if requested by either party, to review proposed work to discuss the timing of and type of activities planned for the year. This provides Regional Water Board and HRC staff a regular forum to become informed on the performance of management practices in achieving goals, and to provide input on conformance with the draft Order requirements.

In addition, the draft Order requires HRC to prepare and submit a five-year synthesis report that evaluates the effectiveness of management measures at preventing and minimizing discharges of sediment.

- e. The draft Order complies with Key Element #5 of the NPS Policy by establishing the following consequences if requirements are not met:

Section II.L clarifies that noncompliance may result in enforcement, "In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under applicable state law."

Section VI lays out the following conditions upon which the Executive Officer may rescind or deny coverage for a THP under the draft Order:

1. The THP does not comply with Terms and Provisions of this Order;
2. The THP is reasonably likely to result in or has resulted in a violation or exceedance of any applicable Water Quality Standards, US EPA approved load allocation, or other water quality requirement³;
3. The THP has varied in whole or in any part from the approved THP in any way that could adversely affect water quality;
4. The THP is the subject of an unresolved water quality or procedural issue including, but not limited to, a non-concurrence filed by the Regional Water Board staff with CAL FIRE;
5. The THP meets the Terms and Provisions of this Order, but may still result in a discharge of waste that could adversely affect water quality from any of the following:
 - a. An observable increase in sediment discharge from landslides, channel or streambank erosion, or surface or gully erosion associated with harvest activities;

³ "Water Quality Requirements" means a water quality objective (narrative or numeric), prohibition, TMDL implementation plan, policy, or other requirement contained in a Water Quality Control Plan (Basin Plan) adopted by the Regional Water Board and approved by the State Water Board, and all other applicable plans or policies adopted by the Regional Water Board or State Water Board, including, but not limited to, State Water Board Resolution No. 68-16, (Statement of Policy with Respect to Maintaining High Quality Waters in California).

- b. A measurable and significant increase in turbidity or suspended sediment concentration as a result of harvest related activities;
 6. Any operations on an individual, or multiple, THP(s) that would result in an average annual harvest rate in any subwatershed above 2% equivalent clearcut acres over any 10-year period that has resulted, or would be likely to result in any of the following:
 - a. An observable increase in sediment discharge from landslides, channel or streambank erosion, or surface or gully erosion associated with harvest activities;
 - b. A measurable and significant increase in turbidity or suspended sediment concentration as a result of harvest related activities; or
 7. There are substantive errors or inaccuracies found in information submitted as part of the THP and enrollment application package that, if known at the time of application, would have resulted in a denial or limitation of coverage under this Order.
2. **Comment** – Kristi Wrigley, Jesse Noel, and Michael Golz all submitted multiple comments regarding both post-harvest tree retention as well as on pre-harvest stand conditions (expressed in basal area per acres or trees per acre) that would “trigger” initiation of timber harvesting. All of these comments essentially are aimed at arriving at appropriate limits to tree removal needed to prevent additional water quality impact in a highly erodible and already impaired watershed.

Response – These comments are attempting to address the first basic performance standard stated under the section General Response to Comments, above;

Retain trees to reduce hydrologic effects such as increased peak flow and transient soil moisture as well as loss of root strength.

A general discussion of Regional Water Board’s analysis of the nexus between forest management and implementation of the requirements of the TMDL Action Plan is provided in Findings 35 through 41 of the draft Order. Riparian zone protection and the need to retain intact riparian vegetation is included in Findings 42 through 47 and the association between harvesting of trees, hydrologic effects and loss of root strength and slope stability (among other processes) are described in Findings 51 through 61 of the draft Order.

The draft Order establishes tree retention standards under the following sections:

Section I.A.1 – Specifies that HRC primarily utilize uneven-aged single-tree and small group selection silviculture.;

Section I.A.2 – Specifies that HRC shall only utilize single-tree selection silviculture within areas defined in this Order as HCP RMZs, TMDL RMZs, or High-Risk Area RMZs;

Section I.A.4 – Temporarily limits HRC harvesting in high risk areas.

As discussed above, the Regional Water Board may not practice forestry, and as such, the above two sections simply establish silviculture requirements proposed by HRC in its ROWD.

Section I.B. – The draft Order specifies that HRC retain a minimum of 50% post-harvest forest overstory canopy cover well distributed throughout the area and shall not utilize group selection harvest method within 300 feet from Class I and II watercourses and 150 feet from Class III watercourses. This provision has been revised based on comments received by staff from HRC, CAL FIRE, and BOF (see response to comment 18). Revised provisions of section 1.B provide riparian zone protected necessary to implement watershed indicators and numeric targets from the TMDL Action Plan associated with channel stability and riparian zone protection.

Section I.A.3 – Specifies that average annual harvest rates in subwatersheds fall near or below 2% equivalent clearcut acres averaged over any 10-year period in most subwatersheds. Harvest rates above this threshold would cause concern for cumulative impacts on water quality that have been observed from intensive logging practices in the past. Where an individual or multiple THPs would exceed this threshold the Regional Water Board Executive Officer may decline to enroll the THP(s), or portions of the THP, or may require additional mitigations or monitoring as a condition of enrollment. By establishing a threshold of concern rather than a hard-and-fast harvest rate limit, Regional Water Board staff acknowledge that significant watershed impacts result from the interaction of many variables on a managed landscape. There is no one widely applicable harvest rate limit with respect to tree removal.

Public Resource Code § 750-783, establishes that only a Registered Professional Forester may practice forestry in California. As part of the interdisciplinary review team established by PRC § 1037.5, the Regional Water Board staff routinely makes recommendations for mitigations related to forestry during review of timber harvest plans as provided in PRC § 753, which states “*The professions specified in Section 772 [wildlife biologists, fisheries biologists, botanists, ecological restorationists, stream restorationists, hydrologists, or geologists] are not practicing forestry when mitigating or recommending mitigation of impacts from previous forestry activities on related watershed or ecological values within their area of professional expertise or when recommending those mitigations for proposed timber operations.*”

While the Regional Water Board does not have a Registered Professional Forester (RPF) on staff who can make recommendations directly related to forestry, it is widely accepted that the removal of trees can cause significant impacts to water quality by increasing runoff, soil moisture, and reducing root strength. These effects can significantly increase erosion and landslide hazards. Therefore, any mitigation or permit requirement put forth by the Regional Water Board must have a clear water quality nexus.

There are many metrics that can be used to establish requirements for tree retention, such as harvest rate limits by area, canopy retention, basal area retention, leaf area index, or others. We have found that limits on canopy reduction, through both minimum post-harvest canopy retention and harvest rate thresholds, to be the most defensible approach with respect to process-based understandings supported by scientific literature as well as being practical as a field based operational limitation.

Regional Water Board staff consider the specific requirements establishing harvest limits described above to be adequate to address any potential cumulative watershed effects resulting from the rate or intensity of harvesting in the watershed.

3. **Comment** - Mr. Golz states that the Regional Water Board has not undertaken the necessary analysis to determine if revised specifications for canopy coverage and wet weather practices (see response to comment 16 for discussion of wet weather practices) are adequate. Mr. Golz continues, writing, *“during staff’s April 3, 2019 teleconference with interested stakeholders, it became apparent that the Regional Board does not even possess adequate data to determine the appropriate canopy coverage rates associated with low sediment impairment levels.”*

Response – A discussion of Regional Water Board’s analysis of the nexus between canopy reductions and implementation of the TMDL numeric target for peak flow is discussed in Findings 35 through 41 of the draft Order. The TMDL targets are based on an extensive watershed analysis that evaluated watershed conditions and processes during several time periods beginning in 1955. The watershed analysis developed a conceptual model that tied together hillslope processes, management activities, and watershed responses. While we did not have canopy data for the specific time (1987) period that Mr. Noell asked about during the April 3, 2019 teleconference, we would encourage Mr. Golz to review the Technical Analysis for Sediment (Attachment B of the draft Order) and the supporting documentation used in the analysis to understand the body of work conducted by, and relied upon by, Regional Water Board staff in developing the draft Order.

4. **Comment** – Michael Golz states, *“The State Board resoundingly rejected the 2016 version of the WDR, not simply because the canopy coverage buffer was too small, but because the entire order as a whole failed to ensure minimization of anthropogenic sediment loading.”*

Response –The commenter’s characterization of the State Water Board’s findings are incorrect. The State Water Board’s Resolution No. 2017-0046 pertained to the adoption of the Upper Elk River Watershed TMDL. It did not specifically address the adequacy of the existing WDR’s, nor does it mention canopy coverage or include a finding that the adopted Order failed to ensure minimization of anthropogenic sediment loading. Resolution No. 2017-0046, *“Directs the North Coast Water Board to review its WDRs for the two major landowners in the Upper Elk River Watershed that conduct timber harvesting and revise the WDRs and adopt any additional orders as necessary to make them consistent with the State Water Board’s understandings of how the TMDL Action Plan will be implemented as described in finding no. 9, above.”*

5. **Comment** – Mike Miles and Wayne Whitlock, both representing HRC, object to the following requirements in the draft Order:
- A) The canopy retention standards with TMDL RMZs, which preclude group openings between 0.25 and 2.5 acres in size or use of silvicultural prescriptions aimed at restoring understocked stands, such as variable retention. [section I.A.2 and I.B.3]
 - B) Mr. Miles also states that the creation of small forest openings produces full-light conditions beneficial to the regeneration of future trees and necessary for the forest’s achievement of maximum sustained production of timber, one of the primary objectives of the FPRs.

- C) The five-year prohibition on harvesting in high-risk areas (the exact language of this requirement carried over from the 2016 Order, having the effect that the prohibition is extended for approximately 2 and a half years). [section I.A.4]
- D) The requirement for HRC to conduct a feasibility study to evaluate potential methods to control, trap, or meter sediment from in-channel sources in the UER before such sediment can be transported to the impacted reach. [section I.H]
- E) In addition, Mr. Miles and Mr. Whitlock contend that the restrictions on harvesting amount to a compensable taking of private property and that the WDR should not be revised until concerns about the TMDL are addressed (as summarized below).

Response – Each of the HRC’s primary concerns must be viewed within the context of the zero-load allocation. This is a different standard than other permits for forest activities in the North Coast Region, which must comply with the prohibition against discharge, or threatened discharge, in amount deleterious⁴. The standard established by the zero-load allocation is that all anthropogenic sediment discharge must *first* be eliminated to the extent feasible and, if not feasibly eliminated, minimized. The TMDL Action Plan explicitly recognizes that this is a very high standard as is evident in the statement, “*The zero-load allocation is necessarily conceptual since, using current technology and techniques, no amount of land use restriction can physically result in zero loading of sediment (i.e., the control of all natural and anthropogenic sediment delivery from the upper watershed).*” This high standard for control of anthropogenic discharge must be implemented through a correspondingly high standard when establishing stringent requirements.

Finding 93 of the draft Order acknowledges that, “*Even with the implementation of current and much improved management practices and stringent restrictions described, ongoing timber harvesting and associated activities will result in some sediment discharge, further exacerbating the already impaired condition.*” In light of that acknowledgement, one commenter questions how any timber harvesting activities can be deemed to comply with the requirements of the TMDL Action Plan. Regional Water Board staff considered a wide range of options to implement the zero-load allocation through permit requirements, including a complete prohibition on any activities with the potential to discharge sediment until the loading capacity in the impacted reach has been increased. Ultimately Regional Water Board staff has settled on an approach that establishes strong controls, including the temporary prohibition of harvesting in high risk subwatersheds, limiting harvest rates throughout the watershed, establishing riparian zone protection that implement the numeric targets for riparian zones from the TMDL Action Plan, and requiring HRC to study the feasibility of methods to control, trap, or meter sediment from in-channel sources on their timberlands. WDR provisions can be modified (relaxed or strengthened) by the Regional Water Board over time based on further evaluation of watershed conditions and progress towards restoring beneficial uses. This approach relies on voluntary participation by HRC in the Elk River Watershed Stewardship Program and provides HRC permit coverage so that it may continue to manage its timberlands in the watershed.

⁴ Waste discharge prohibitions from the Action Plan for Logging, Construction, and Associated Activities (Basin Plan, 4-26.00)

HRC reiterated its ongoing concerns about the application of the TMDL Action Plan to its operations and asserts that the WDR should not be issued until the TMDL is revised to address its concerns. HRC's concerns with the TMDL have been previously raised in written and oral comments it provided both when the Regional Water Board adopted the TMDL and when the State Water Board considered it. Regarding the economic feasibility of requiring HRC to implement measures consistent with the TMDL RMZ's, the Regional Water Board and State Water Board considered the economic impact. The North Coast Board analyzed a range of alternative implementation measures in the Substitute Environmental Documentation (SED) and addendum it prepared and relied on to support the TMDL. The North Coast Board considered extensive public comment on its proposed implementation plan and considered alternatives ranging from a prohibition on harvest activities to phased logging and harvest activities. In addition, the North Coast Board considered measures proposed by HRC and other upstream landowners. The North Coast Board adopted a TMDL that establishes a load allocation, numeric targets and indicators that will attain water quality objectives in a reasonable time frame, while maintaining flexibility to accommodate continued land management activities in the upper watershed. The North Coast Board considered but did not adopt a complete moratorium on logging for upslope landowners as this would have had a significant economic impact in the local communities. Instead, the North Coast Board modified the draft TMDL program of implementation to allow for adaptive management based on monitoring results, results of pilot restoration efforts and success of initial implementation measures. In its regulatory actions to implement the TMDL (primarily the adoption of WDRs), the North Coast Board relies to a large extent on measures proposed by HRC in its Report of Waste Discharge and Timber Harvest Plans approved by CAL FIRE.

The State Water Board approved the TMDL and provided its understanding of the TMDL requirements in its approval. In turn, the TMDL Action Plan was approved by OAL and US EPA. The Regional Water Board is implementing the TMDL requirements in this action. The Regional Water Board cannot reconsider the TMDL here, as the TMDL is a final approved Basin Plan Amendment and as an approved Basin Plan Amendment, the Regional Water Board must ensure WDRs it adopts are consistent with the TMDL. (Wat. Code §13263 subdivision (a).)

The Regional Water Board recognizes that regulatory measures in the watershed must be adaptive, and the Board plans to revisit the TMDL. The TMDL requires the Regional Water Board to evaluate the effectiveness of implementation measure and conditions in the watershed by 2031 and if necessary revise the TMDL.

HRC asserts that the proposed measures in the WDRs impose conditions that are not proportional to the permitted activity and so violate 5th Amendment takings provisions in the U.S. Constitution. The *Nollan* and *Dolan* cases cited by HRC⁵ are takings cases that specifically apply to land use exactions, that is, demands by governments that landowners dedicate portions of their property or a parcel specific mitigation fee as a condition of securing a permit. Those cases require a "rough proportionality" between the mitigation required and the impact of the permitted activity.

As discussed, when the previous order (No. R1-2016-0004) was adopted in 2016, the conditions established by the Regional Water Board are constitutional under *Nollan* and

⁵ The Cases cited by HRC are: *Nollan v. California Coastal Comm'n* (1987) 483 U.S. 825 and *Dolan v. City of Tigard* (1994) 512 U.S. 374.

Dolan. The conditions are directly related to and proportional to the goal of limiting sediment discharges to the Elk River. In this permit, HRC is not required to mitigate more than the effects of its operation or to mitigate for impacts that are not a direct result of its land ownership. The current conditions in the watershed, and highly erodible nature of HRC's land, require the Board to establish conditions to limit future sediment discharges from HRC's land to meet water quality objectives and support beneficial uses. The Riparian Management Zones and wet weather restrictions are directly proportional to the TMDL targets and indicators that are designed to minimize and eliminate sediment discharges. The Order's conditions, including the requirement to conduct a feasibility study to address in-channel sediment delivery are conditions directly related to HRC's ownership and timber operations in the Upper Elk River watershed. In its approval of the TMDL Action Plan and 2016 WDRs, the Regional Water Board extensively addressed HRC's comments concerning the control of in-channel sediment sources within its ownership. As it has previously done, the Regional Water Board continues to acknowledge HRC's improved management practices compared to previous landowners in the watershed including HRC's efforts to treat legacy discharge sites. The Elk River Watershed is a naturally sensitive watershed that continues to have sediment delivery rates above natural loading estimates. Current management practices are significantly better than past practices but legacy sediment sources, including in-channel sediment sources continue to lead to sediment aggradation in the impacted reach of the Elk River. This Order continues the requirement in the 2016 Order for HRC to submit a study evaluating the feasibility of controlling, trapping, or metering sediment delivery from in-channel sources.⁶ As outlined in the Order, and in the TMDL, the Regional Water Board has committed to ongoing evaluation of the effectiveness of the Order's conditions and if necessary will revise the Order for consistency with the TMDL and progress that is made in improving water quality.

Mr. Miles states that, "To date, no Notice of Discharges or other significant sediment delivery have been discovered or reported as resulting from implementation of THP 1-12-110." Mr. Miles' statement is true. However, concerns regarding sediment production involves both acute discharge from discrete sites that can be easily identified, such as road related gullies or landslides that discharge in a single or series of events, as well as increased sediment production from chronic sources such as road surface erosion, or mobilization of in-channel sources resulting from harvest related elevated runoff.

High risk areas, shown on a map included in HRC's October 4, 2016 revision to its ROWD (Attachment D of the draft Order), encompass portions of Clapp, Tom, and Railroad Gulches, McCloud Creek, Mainstem Elk River, and the Lower South Fork Elk River. Suspended sediment data collected from HRC and Green Diamond Resource Company (GDRCo) show that these subwatersheds consistently produce some of the highest sediment loads in Upper Elk River. While these data do not conclusively demonstrate one way or the other whether ongoing timber harvesting are contributing to high sediment loads, it does warrant continued caution in consideration of lifting the prohibition.

The 2016 Order specified that, "At the required update to the Regional Water Board no later than five years from the date of adoption of this Order, the Regional Water Board

⁶ See Water Code section 13304; State Water Board Order No. WQ -89-12 addressing landowner responsibility for discharges which it permits.

will consider the Order conditions limiting harvest activities in high risk areas.” At that time, Regional Water Board staff did not anticipate that we would be holding a hearing for the Board to consider a revised Order two and a half years after the initial adoption. Given the high sediment loads from these high-risk areas and given evidence of on-going sedimentation in the impacted reach, Regional Water Board staff recommend maintaining the prohibition on harvesting in these areas for five more years.

Considering current watershed conditions are the culmination of over 150 years of forest management, it is likely that sediment entrained in the fluvial system or in quasi-stable near-stream locations with a high potential to discharge during future storm events will continue to be transported to the impacted reach regardless of whether additional logging takes place. While BMPs are robust, any timber harvest activities, particularly additional canopy removal, have the potential to result in additional sediment discharge. HRC’s future logging activities cannot be viewed in isolation from past activities, the current condition of the watershed, and the condition of the receiving water of its discharges. The draft Order addresses existing and new discharges, while recognizing that the ability to control instream sediment may be constrained. The intent of the feasibility study is to determine to what extent, if any, these sediment contributions can be controlled. We believe that the feasibility study is a reasonable approach to this problem.

6. **Comment** – Fred Blat states, “*Given multiple lines of evidence that the Tom Gulch watershed is by far the largest producer of sediment within the Elk River Watershed, timber harvest activities should be prohibited for at least 10 years, while restoration and recovery can proceed.*”

Response – The current provision in the draft Order (discussed above) that the Regional Water Board will consider conditions limiting harvest activities in high risk areas, including Tom Gulch, no later than 5 years following adoption of the Order sets up a public process where the term of the harvest prohibition in high risk areas can be addressed based on 5 additional years of data and watershed recovery actions.

7. **Comment** – In their letter, Rob DiPerna, Jennifer Kalt and Felice Pace as well as Vivian Helliwell assert that: 1) the Regional Water Board’s environmental analysis is insufficient; 2) and the Board is unlawfully piecemealing the project and 3) the Board has not considered the cumulative impacts of the project.

Response - 1) The Regional Water Board prepared environmental documentation to comply with the California Environmental Quality Act (CEQA) when it adopted the 2016 WDR that regulates discharges from HRC’s operations. That environmental document, a Mitigated Negative Declaration (MND), analyzed environmental impacts and included mitigation measures to reduce any potentially significant impacts to a less than significant level. The 2016 MND is a final approved document. In this action, the Regional Water Board is amending the 2016 MND to update the mitigation measures included in the 2016 WDR. In accordance with the CEQA Guidelines (Cal. Code Regs. tit. 14 §15000-15387) the Regional Water Board has prepared a subsequent mitigated negative declaration to describe those new mitigation measures. (See Cal. Code Regs. §15162 (b).) In accordance with the CEQA Guidelines, the Regional Water Board developed a subsequent mitigated negative declaration because it determined that any modifications to the project would not involve major revisions or new significant environmental effects compared to those analyzed in the 2016 MND. In this context, the

“project” is essentially the same project that was analyzed in 2016, with revisions, the most significant of which arguably reduce the potential for impacts.

In addition, a subsequent mitigated negative declaration is appropriate because the Regional Water Board has determined that the original environmental document retains informational value, and the proposed changes do not require major revisions to that document as the result of new, or previously unconsidered significant environmental effects. (See *Friends of College of San Mateo Gardens v. San Mateo County Community College Dist.* (2016) 1 Cal. 5th 937) The draft Order (No. R1-2019-0021) is substantially the same as the prior Order No. R1-2016-0004. The primary revisions are measures related to wet weather operations and timber operations in riparian management zones and these new measures will not result in new environmental impacts that were previously unaddressed.

2) The Regional Water Board does not agree with the comment that it is “piecemealing” its consideration of the project. In the CEQA context “piecemealing” refers to chopping up a large project into little ones to avoid full environmental consideration of the impacts of the entire project. The project before the Board, its consideration of waste discharge requirements for HRC, is not part of a larger project or approval for CEQA purposes. The Board is not making a determination in this action on the appropriate CEQA analysis that will be necessary for any additional permits or projects that may come before the Board. Other individual projects or approvals in the watershed that are subject to CEQA will be subject to their own environmental analysis and considerations to ensure any future approvals comply with CEQA.

3) The Action Plan for the Upper Elk River Sediment TMDL was adopted under the Board’s certified regulatory program process to fulfill CEQA requirements. That approval appropriately did not foreclose the need to do an individual project level CEQA analysis for projects that might be implemented under the TMDL.

The Regional Water Board does not expect that approval of the WDR will contribute to a significantly cumulative impact in the watershed because the project-specific mitigation measures in this proposed Order will reduce impacts to a less than significant level. Future projects in the watershed will be subject to their own project level analysis to determine whether they may have significant effects on the environment that require additional CEQA analysis.

8. **Comment** – Vivian Helliwell stated, “*Several pages of history of the watershed that were in the previous order have been removed from the new proposed one. That history should be restored to the document because it shows causes of cumulative impacts.*”

Response – In revising the 2016 Order, we made editorial changes to update the narrative based on important milestones that occurred subsequent to its adoption. The Findings of the draft Order are intended to articulate the rationale for development of the permit and its provisions, including providing a historical perspective. In developing the Findings, Regional Water Board staff must weigh how much information is critical to support a Board action while also creating a readable document. The draft Order is a fairly long document that presents a lot of information, including a summary of the watershed history that lead to the current impaired condition. In addition, the draft Order references other Regional Water Board documents that provide a detailed history of the

watershed, including the Technical Report, for anyone wishing more detailed information.

9. **Comment** – Fred Blat states, “During October 15 to May 1, HRC should provide a monthly report to the Regional Board showing which days hauling took place and the 24-hour rainfall totals if not available in real-time. The hauling information should be readily available from HRC haulers or their hauling contractors.”

Response – Agreed. This will provide Regional Water Board staff with a mechanism to track and evaluate compliance with the requirement that HRC cease hauling for 48 hours following a precipitation event resulting in 0.25 inches or more of rain during any 24-hour period. The above has been added as new Section I.F.c [underlined]:

F. Wet Weather Requirements

1. From October 15th to May 1, the following wet weather requirements apply:
 - a. Hauling shall be limited to permanent rocked all-season roads that meet the HCP storm-proofed standard;
 - b. Hauling shall cease for a period of 48 hours following a precipitation event that results in 0.25 inches or more of rainfall within any 24-hour period.
 - c. For the period between October 15 and May 1, HRC shall provide a report to the Regional Water Board after May 1 showing which days hauling took place and the 24-hour daily rainfall totals for the month.
10. **Comment** – Jesse Noell states, “Please disclose what the peak flow increase and cross-sectional area was in 1986 and/or 1976 when the clean water act high quality water thresholds were set---so that we can see the true increase in flow and imperilment of residents and damage to property that this regulatory policy imposes.”

Response –To our knowledge, the information on peak flow increases since 1976 or 1986 is not available. The ERRA presents historical channel bed measurements from four bridges for various time periods (North Fork Bridge: 1947-2002, Steel Bridge: 1958-2015, Zanes Road: 1969-2014, and Berta Road: 1969-2016). The data shows a long-term trend of increasing channel bed elevation and decreasing channel cross sectional area. However, it should be noted that data is sparse for all bridges prior to 1999 and only at the Steel Bridge, which is the location of HRC Aquatic Trends Monitoring (ATM) station 510, have annual channel cross sections been measured. Any attempt to infer cross sectional area at any of the bridges for 1976 and/or 1986 would be guesswork, as would any attempt to estimate peak flow changes during those years. One could potentially estimate harvest areas throughout the watershed during specific time periods prior to those two years from aerial photographs but such an analysis would have a high level of uncertainty, be extremely labor intensive, and outside of the scope of the current project analysis. The Regional Water Board’s action here is to adopt a proposed WDR for HRC’s timber operations. It is not a regulatory policy, and like all waste discharge permits adopted by the Regional Water Board is subject to ongoing review and modification as necessary. As compared to past permits, this action does not authorize any action that is expected to increase flow or imperilment of residents.

11. **Comment** – Jesse Noel states, “Since the bed at station 510 is about 5 meters or 17 feet wide, this equates to a loss of about 200 cubic feet per second conveyance when the velocity is 4 ft. per second. This is new information that neither the Action Plan nor the WDR accounts for---to my knowledge. Further loss in conveyance results from this

seasons' 4" deposits on the banks and terraces. This loss of conveyance reasonably means that the WDR needs to order a reduction in flows, not a 10% increase.

I have yet to see predicted 25-year, 50 year, and 100-year flood elevations at each of the imperiled homes as a function of ongoing aggradation at cross-sections as is reasonably necessary. Please update the cross-section inputs before running the prediction."

Response – The primary factors driving the Regional Water Board's actions in the watershed during the late 1990s, including development of WDRs and the TMDL Action Plan, has been the channel aggradation and loss of channel capacity due to excess sediment discharged from logging operations and the resulting nuisance flooding conditions impacting residents' properties, water supplies, roads, etc. The Regional Water Board is acutely aware of the loss of channel capacity, which along with other manifestations of sediment impacts, are being addressed through the TMDL Action Plan program of implementation. However, predicting elevations for floods of various recurrence intervals is beyond the scope of the draft Order.

The TMDL includes a numeric target of a less than 10% increase in peak flows in 10 years as a result of timber harvest applies to Class II and III catchments. The objective of this numeric target is to prevent elevated peak flows from mobilizing sediment from in-stream sources in low order headwater streams, not addressing flooding in the impact reach. The draft Order does not include the peak flow numeric target as an enforceable requirement. Rather, the Regional Water Board's approach to this target was to analyze potential peak flow increases in Class II and III catchments from HRC's management activities. The results of that analysis are presented in Finding 40 of the draft Order.

12. **Comment** – Kristi Wrigley asked, *"what analysis are you doing for DO [dissolved oxygen]? We residents have been telling the Board and staff for a number of years now how summer water quality has been steadily deteriorating. That is a sure indication that DO is negatively impacted."*

Response – We understand that low DO numbers were recorded in September/October 2018 in water samples collected in Elk River adjacent to Ms. Wrigley's property. This is likely a result of accumulated fine sediment in the channel creating a significant biological or sediment oxygen demand (continuous), which would likely be more pronounced during lower flows. Similar to comment 10 (above), low DO levels are likely an indirect effect of excess sediment in the impacted reach. Regional Water Board staff anticipate expanded monitoring conducted as part of the Stewardship Program to further assess DO conditions in Elk River.

13. **Comment** – Jesse Noel stated, *"WQ seems to violate the Legislative intent by proposing the use of taxpayer money to cleanup timber polluters' pollution---pollution that is causing wrongful use of residents' land as well as creating an obstruction on the bed and lower banks of the river held in reserve upon statehood. Please explain how WQ's discretionary regulatory acts to accommodate further pollution by timber can properly attain Legislative Intent."*

Response –The draft Order does not use taxpayer money to clean up pollution. The purpose of the draft Order is regulate waste discharges from HRC's timber harvesting and related activities in the UER watershed in compliance with California Water Code

section to control anthropogenic sources of sediment from HRC's lands. The draft Order establishes reasonable requirements for HRC timber management and associated activities in the UER watershed. In this case, a significant portion of in-channel sources are likely to be mobilized and transported to the impacted reach over time, regardless of whether additional upslope timber harvesting occurs. The draft Order authorizes discharges from certain cleanup and restoration activities as well as from ongoing timber harvesting and associated activities. In order to make progress toward attaining beneficial uses by further reducing sediment discharge from timber harvesting and associated activities, prevent nuisance conditions, and to meet the Regional Water Board-adopted zero load allocation for the UER watershed, while recognizing that halting all timber harvest activity in the UER watershed is not necessarily feasible or helpful in promoting HRC's participation in cleanup and restoration efforts. Cleanup and restoration activities may result in small short-term discharges associated with restoration work to control sediment discharge from roads, landings, skid trails, and watercourse crossings and placement of large wood into streams or excavation to stabilize or remove fill material stored in channels and adjacent riparian zones. The potential impacts of minor short-term discharges are outweighed by the benefits of long-term sediment control derived by such projects.

14. **Comment** – Jesse Noel stated, *“It seems that NCRWQCB has a policy of not adopting mitigations that are deemed infeasible or impracticable by the dischargers.”*

Response – The Regional Water Board has no such policy. In the context of CEQA requirements, CEQA does not require implementation of infeasible mitigation measures. See Public Resources Code sections 21002 and 21081 and California Code of Regulations sections 15091, 15093 which specifically address the adoption of feasible mitigation measures. In addition, the State Water Board has provided specific clarification that anthropogenic discharges of sediment should be eliminated to the extent feasible, and if not eliminated, minimized, as soon as feasible but not later than 2031.

15. **Comment** – Jesse Noel stated, *“Leaf Area Index, or LAI, is one method to estimate the potential surface area that can intercept rainfall. Canopy cover is another. A study of a redwood plantation planted in 1982 in Scotia, California chose LAI as the best surrogate to estimate tree volume and basal area growth of different silvicultural treatments. Leaf area and tree age is also known to be related to root strength. Root strength is known to be an important factor in soil shear strength. Leaf area index is known to correlate much better to rainfall interception than canopy cover.”*

Response – Mr. Noel provided screen shots from portions of at least three reports addressing root biomass depth, root strength, and percent of trees per acre and basal area in thinned plots. There was minimal identifying information provided with the screen shots but Regional Water Board staff were able to find two of the full reports in the 2016 Proceedings of the Coast Redwood Science Symposium (Standiford et. Al, 2016). While the studies (Web et. Al, 2017) and (Pascal et. Al, 2017) were related to stand growth and modeling, they did not provide additional information with respect to establishing tree retention standards for protection of water quality.

Leaf area index (LAI) (Watson, 1947) is defined as the total one-sided area of leaf tissue per unit ground surface area. According to this definition, LAI is a dimensionless quantity characterizing the canopy of an ecosystem. LAI is difficult to measure directly and often

canopy measurements are used to estimate LAI. The Regional Water Board uses canopy retention based on its direct relationship to rainfall interception and as a proxy for retention of root strength. In addition, canopy retention is widely used in forestry applications on private timberlands in California and therefore, is more familiar and practical for use than LAI and provides an appropriate level of protection as used in section I.B of the draft Order.

16. **Comment** – Jesse Noel stated, *“To reduce potential regulatory liability further please provide performance standard approaches, consider the impacts of permitting decisions on adjacent landowners including cumulative impacts of such decisions, and apply a no adverse impact standard that relates back to the 1986 FEMA and 1976 CWA thresholds. Adhere to the Clean Water Act Congressional Record with regards to the exception to the 404 f 1 a exemption that applies where forestry activity has demonstrated destruction of existing uses of water, creates flooding or harms ESA listed species or threatened species. This exception was considered a necessary limitation to the exemption to avoid imperilment of people. Please make this exception/ limitation part of the Basin Plan---to eliminate the use of the weasel words "feasible" or "practicable" to limit the control of pollution in situations where use of water is destroyed or flooding caused.”*

Response – Performance standards upon which the draft Order is based, include those described above in the General Response to Comment section as well as the TMDL hillslope indicators and numeric targets.

The Regional Water Board has not been historically involved in the management principle known as “No Adverse Impact Floodplain Management”. Based on a staff review of the concept, it is an approach promoted by the Association of State Floodplain Managers where a local community and government manages its public and private development to prevent impacts if possible, and where possible mitigates impacts to ensure that property owners do not adversely impact the properties and rights of other property owners, as measured by increased flood peaks, flood stage, flood velocity, and erosion and sedimentation. For more information on “No Adverse Impact Floodplain Management” please see

<https://www.floods.org/index.asp?menuID=349&firstlevelmenuID=187&siteID=1>

Section 404 of the Clean Water Act pertains to the requirement to obtain a permit from the Army Corps of Engineers for dredge or fill activities in the Waters of the United States. As discussed in response to comment No. 21, this Order does not serve as a Clean Water Act section 401 Water Quality Certification for a section 404 permit issued by the Army Corps of Engineers so exemptions to 404 permit requirements are not applicable.

17. **Comment** – Several commenters (Jesse Noel, Kristi Wrigley, Michael Golz, Vivian Helliwell and Rob DiPerna) expressed concerns that wet weather requirements are insufficient to protect water quality.

Jesse Noel expressed concerns that felling of trees during the winter can negatively impact soil pipes.

Response – Regional Water Board staff are not aware of any scientific studies that have found negative effects on soil or soil pipes from falling second growth conifers during the winter. Hillslopes in the Elk River watershed developed with old growth redwoods falling

periodically throughout the year, which can weigh several orders of magnitude more than second growth trees. Therefore, Regional Water Board staff do not believe that the falling of trees as part of winter timber harvest activities presents an additional risk to water quality.

In response to Michael Golz's statement from comment 3 regarding analysis of wet weather practices, Regional Water Board staff found that the majority of studies from the Pacific Northwestern United States associate sediment discharge from wet weather timber harvesting activities with road use. Of particular importance was how effectively the road is drained to minimize concentration of runoff on the road surface, the extent of hydrologic connectivity to watercourses, the durability of the road surface, the design, construction and condition of road stream crossings, and the intensity of log truck traffic (Reid and Dunne, 1984) (Bilby, Sullivan, and Duncan, 1989) (Luce and Black, 2001) (Toman and Skaugset, 2007).

Practices to prevent or minimize sediment discharge from operations during wet weather are well established and generally are based on the following performance measures, which are established as enforceable requirement of the draft Order under the specified sections:

- Roads must be hydrologically disconnected to the extent feasible [section I.D.1 of the draft Order];
- Hauling during the wet weather period must be limited to permanent rocked all season roads [section I.F.1.a]
- Hauling shall cease for a period of 48 hours following a precipitation event that results in 0.25 inches or more of rainfall within any 24-hour period [section I.F.b]

Regional Water Board staff have inspected HRC's permanent all-season roads in the watershed and found them to be adequately rocked and drained to minimize sediment delivery to watercourses. In addition to the provisions of the draft Order, wet weather operations also must comply with Forest Practice Rules and HRC's HCP.

In response to comment 25 by Ms. Helliwell, the rainfall trigger for road inspections in section A.1.a.ii, which specifies that HRC inspect all roads following any storm event that generates 3 inches or more of precipitation in a 24-hour period, has been revised to 2.5 inches or more of precipitation in a 24-hour period.

18. **Comment** – Jesse Noel asked, “*Do the minimums of the FPRs [Forest Practice Rules] attain sufficient mitigation to protect and restore public safety?*”

Response – We believe this question was asked in the context of minimum basal area retention of 75 square feet per acre under single tree selection. This project establishes requirements in excess of minimum FPR standards for post-harvest tree retention and apply throughout HRC's ownership in the watershed, not just within a single THP.

19. **Comment** – Keith Gillless and Thomas Porter describe the extensive effort conducted by the BOF and CAL FIRE to promulgate Forest Practice Rules to protect water quality. Development of the updated Anadromous Salmonid Protection Rules in 2009 and Road Rules in 2013 was based on an extensive literature review of applicable scientific literature and testimony from scientists and technical experts in the fields of watershed processes, riparian functions, and fisheries biology in collaboration with the regulatory

agencies, timberland owners, and forest managers. In addition, CAL FIRE staff participated in development of the HRC's HCP, including riparian protection zone measures and watershed analysis prescriptions. Mr. Gillless expressed the hope that the requirement of the draft Order and any associated findings are well supported in the administrative record by relevant empirical evidence and the best available peer-reviewed literature, or in the absence of such evidence, suggests that the Regional Water Board use relevant monitoring data from scientifically valid studies conducted in redwood dominated watersheds to determine the appropriate practices that may further protect the beneficial uses of water (citing the Railroad Gulch BMP Evaluation Project as a relevant study). Additionally, Mr. Gillless suggested that new monitoring projects could be initiated by the Regional Water Board through the BOF's Effectiveness Monitoring Committee.

Response –In 2003 Regional Water Board staff submitted a report to the BOF nominating five planning watersheds within the Elk River watershed (Upper South Fork Elk River, Upper North Fork Elk River, Lower North Fork Elk River, Lower South Fork Elk River and Lower Elk River) as sensitive watersheds pursuant to FPR section 916.8. The nomination was part of a multi-faceted effort, including TMDL development, WDR development, and renewed interagency coordination. The nomination request was made because the Regional Water Board was considering a harvest rate limitation in the WDR being developed at the time, and that factor was an area of cross-over with CDF (now CAL FIRE) and the BOF. FPR section 916.8 states, "Classification of a watershed as "sensitive" shall be supported by substantial evidence that a condition, or conditions, exist(s) where further timber operations within the planning watershed will create a reasonable potential to cause, or contribute to ongoing, significant adverse cumulative effect(s) on the resources identified in 916.8(a)(3) ... and that mitigation of such significant cumulative effects requires the application of protection measures not required by the Forest Practice Rules."

In response to the nomination, the BOF formed the Elk River Sensitive Watershed Nomination Review Committee made up of technical experts and other interested parties, including CAL FIRE staff. The function of the committee was to determine if the FPRs (and the process/review incorporated by the rules which includes HCPs, waivers and WDRs, ITPs, etc.) do not sufficiently address measures to protect the specific resource(s) at risk. Such a finding would result in a determination by the committee that the watershed is sensitive.

Ultimately, no action was taken by BOF after six Sensitive Watershed meetings and one sub-committee meeting held in 2004-2005. In a letter the Regional Water Board Executive Officer recommended that the BOF temporarily suspend the nomination in return for BOF agreeing in writing that:

- Waters of the state in the Elk River Watershed are significantly impaired as a result of intense timber management operations on sensitive geologic terrane.
- They will support the Regional Water Board or the State Water Resources Control Board's watershed-wide WDRs as the logical next step.
- They could defer any rule making until the RWB has completely evaluated all of the results from the sediment Total Maximum Daily Load (TMDL) analysis prior to potential development of gradational measures to control sediment discharge.

Following that letter, no written agreement resulted nor was any further action taken by the BOF on the nomination. Essentially, the BOF deferred development of special protection measures necessary to address unique conditions in the Elk River to the WDR and TMDL processes.

The TMDL Action Plan establishes numeric targets and indicators for riparian zones in Upper Elk River. The indicator is described as the characteristics of riparian zones and the zone was defined as the area buffering a stream at 300 ft and 150 ft distance from the streams' centerline for Class I/II and Class III watercourses, respectively. The accompanying target for the riparian zone indicator is "*improvement in the quality/health of the riparian stand so as to promote: 1) delivery of wood to channels, 2) slope stability, and 3) ground cover.*" Those targets speak to increasing wood recruitment for instream habitat; reducing mass wasting risk; and decreasing sediment discharge from overland flow, respectively. The term riparian zones refer to ecological systems which are distinct from riparian management zones (RMZ), which necessarily imply some adjacent anthropogenic land use. That is, the design and concept of RMZs are best management practices to reduce the impact of human activity. The following discussion will focus on those three with respect to RMZ widths. In particular, the discussion provides example instances where buffer widths are on a similar scale to those stated in the TMDL Action Plan.

Wood recruitment and delivery

The relevant metric on this topic is recruitment distance, which is the distance from which the wood source is recruited and is analogous to the buffer width. Wood recruitment occurs by disturbances such as bank erosion, landslides, debris flows, tree mortality and other mechanisms. The recruitment distance is a function of these mechanisms and their underlying factors, which include channel width, slope steepness; slope stability; forest composition and structure; and local wind patterns. In descending order, mean recruitment distances are greatest for landslides, followed by windthrow, stem breakage, falling of dead trees, and bank erosion. May and Gresswell (2003) found that recruitment distance differed significantly when comparing alluvial streams to colluvial channels draining steep hillslopes in Oregon's Coastal range; this study found that 80 percent of wood pieces and total wood volume originated from forests within 50 m (164 ft) of colluvial channels constrained by steep hillslopes, whereas for unconfined alluvial channels, that distance is 30 m (99 ft). Along steep second growth redwood forests in northern California, landslides resulted in recruitment distances extending over 60 m (197 ft). Johnston et al (2011) also found that large wood distances increased with increasing height of trees. Implied in the tree height relationship is the differences in recruitment distances between managed forests versus unmanaged forests. For example, Czarnomski et al. (2008) found significantly higher numbers of large wood pieces in stream segments adjacent to unmanaged mature and old-growth sites than in segments adjacent to 30- to 50-year old intensively managed sites. Nevertheless, the primary factor in recruitment distance is the delivery mechanism. Riparian areas where bank erosion is the dominant recruiting mechanism will have shorter mean recruitment distances than riparian areas where landslide mechanism dominates. Using LiDAR data collected by Stillwater Sciences, the median slope across the UER watershed is approximately 30 percent, and in such a steep forested terrain and for lower order streams, the mechanism is more likely to be landslides, which have the highest recruitment distances, as stated above. For higher order streams—that is, streams more likely to be Class I/II water courses—recruitment distances can lay beyond 90 m (295 ft)

for hillslopes prone to landslides in one study of coastal Oregon watersheds. In another study in Washington, recruitment distances can lay beyond 92 m (300ft) for fifth-order streams.

Mass wasting and slope stability

The Technical Analysis for Sediment identified the key sediment source categories that produce sediment in the UER watershed. By far the most significant sediment discharge source resulting from timber harvest and other land-management activities in the most recent analysis time period (2004-2011) are those associated with riparian zones: in-channel sources such as headward channel incision, bank erosion, and streamside landslides. Mass wasting in this context refers to shallow, streamside landslides. Slope stability may also refer to bank stability with regards to sediment discharge from bank erosion and failure. Landslide events occur as a combination of disturbances; characteristics of the soil substrate; precipitation and soil moisture; and vegetation. A thorough discussion of landslide physics is beyond the scope of this review. Riparian vegetation moderates soil moisture conditions in stream banks, and roots provide tensile strength to the soil matrix, enhancing bank stability. Specific numbers for RMZ widths for bank and slope stabilization are rare in the literature, and at least two guidance documents discuss RMZ design in terms of site-specific conditions that include the site's slope; previous history of bank failures; vegetation type; vegetation density; and other factors. The TMDL Action Plan relied on the Forest Ecosystem Management Team (FEMAT 1993) report which uses one site-potential tree height (SPTH) as the recommended RMZ width; extrapolating from mature coast redwood trees, the SPTH and RMZ widths can range between 200 to 300 ft. A review by the United States Army Corps of Engineers recommends widths between 10 to 20 m (33 to 66 ft) for bank stabilization (Fischer and Fischenich, 2000). One recent study done by the Green Diamond Resource Company on their timberlands in Northern California suggest RMZ widths of 135 ft and 110 ft for Class I and II watercourses, respectively, are effective in significantly reducing management related sediment delivery associated with landsliding when compared to historical management practices.

Surface Erosion

RMZs should be designed or designated for the function of entrapping or otherwise preventing sediment from entering streams. Riparian buffer widths necessary for sediment removal vary considerably depending on site-specific conditions such as slope, vegetation density, drainage paths, and others. The body of literature for relating buffer widths to pollutant removal is immense. Meta-analyses of this literature found a wide-range of buffer widths for 90 percent sediment removal efficiency: 10, 23, and 52 m (33, 75, and 170 ft)(May, 2003). Removal efficiency also depends on sediment characteristics, with smaller particle sizes settling out at greater distances. Empirical studies have found a non-linear relationship between buffer width and sediment removal efficiency, necessitating disproportionate increases in width to achieve an incremental increase in sediment removal; in other words, the majority of sediment may be captured within the inner portions of a forested buffer, while an increasingly small proportion of sediment may be captured within additional buffer widths. The relationship between slope and removal efficiency is also non-linear, but not monotonic: removal efficiency increased as slope increased from 1 to 10 percent, but efficiency decreased as slope increased above 10 percent. Still, extrapolating these findings to different locations should be done critically. To narrow the focus to the UER's topographic setting and noting that the load allocation for the TMDL Action Plan is zero, the 99 percent removal efficiencies in a forested buffer with steeper slopes (≥ 15 percent) range between 20 and

596 m (66 and 1955 ft), based on the meta-analyses referenced above. While the wide range in buffer widths in these studies complicates any one-size-fits-all determination, the findings related to slope and nonlinear removal efficiencies supports a buffer on the wider end, particularly when considering the zero-load allocation as well as the finer sediment encountered in the UER watershed.

Following Regional Water Board staff review of public comments, canopy retention standards in TMDL RMZs have been revised to allow group openings in Class I and II TMDL RMZ on slopes less than 30% and distances over 150 from the watercourse. This change was made based on a recognition that sporadic group openings can provide a benefit to forest stand conditions by more closely emulating natural disturbance regimes and increasing the availability and heterogeneity in understory light levels, provided the stream and riparian zone are protected from any increased potential for mass wasting and surface erosion. The revisions ensure that protection by establishing limits on group placement based on slope gradient and distance from streams.

20. **Comment** – Several commenters (Jesse Noel, Vivian Helliwell, Stephanie Bennett) support a complete moratorium on logging by industrial timber companies in the upper watershed, at least until restoration has been completed, or at least the process is well on its way.

Jesse Noel makes several statements and questions why the Regional Water Board does not prohibit logging entirely in the Elk River watershed:

“I'm wondering why WQ don't limit winter felling or even all harvest where the sediment from logging since 1986 has severely infilled the channel and created recurrent flooding and destruction of existing uses of water?”

“It seems the necessary margin of safety can best be attained by issuing a moratorium rather than a permit. Both Jack Lewis and Leslie Reid have opined that if harvest stops forest recovery will in a matter of decades control sediment delivery to natural background rates. Table 7 also supports this contention. Letting the forest recover will also have a negative carbon footprint---something that should be considered before any discretionary decision is made.”

“If this were not the case, seems like the 1997 moratorium would have remained in effect and the river would have cleaned itself out by now. From the tech report, it appears that it takes about 20-30 years of no harvest for Elk River to recover.”

“What prevents you at this juncture from reinstating the moratorium---when the watershed recovery response to logging history is so clear and residents are so imperiled by sediment from logging?”

Response – As stated above in the General Response to Comments, and in past actions where it considered regulatory actions in the Elk watershed, the Regional Water Boards has not found that a prohibition on all logging is appropriate. The TMDL Action Plan and the underlying scientific work presented in the Technical Analysis for Sediment developed recommendations and hillslope targets designed applicable to timber harvesting activities conducted primarily by the two industrial timberland owners. Nowhere in either of those two documents is there any support or recommendation for a prohibition on logging.

In December 1999, CAL FIRE's (then CDF) determined that no THPs would be approved in the North Fork Elk River until Pacific Lumber Company submitted a flood evaluation and completed watershed analysis. This resulted in the "moratorium", during which there was low acreage harvested in 1999 and 2001 and none in 2000 (harvest acreage increased again in 2002). An analysis of suspended sediment data collected from monitoring stations throughout the Upper Elk River watershed did not reveal a statistically significant decrease in suspended sediment loads during the moratorium. Suspended sediment loads track quite closely with annual rainfall patterns (amounts and intensities). It is difficult to detect a management signal within the much larger signal resulting from annual variations in weather patterns.

If the Regional Water Board reviews a THP and determines that it would result in a violation or exceedance of any applicable water quality standards, the Executive Officer would have the ability to rescind or deny permit coverage for that THP as provided in section VI of the draft Order.

21. **Comment** – Vivian Helliwell stated, *"It is neither appropriate or feasible to add more sediment to an already impacted system. How does 'allowing some timber harvest activity to continue enable[s] HRC's participation in cleanup and restoration efforts'? (Finding 94). You cannot adequately measure the results of your restoration work when you are continually adding more sediment into the already 'impacted reach.'*

"It is not accurate or appropriate to claim that the "authorization of some sediment discharges from ongoing timber operations...is necessary to accommodate important economic and social development in the area and is consistent with the maximum benefit to the people of the state." (Finding 94) The proposed Order contends that timber extraction is the highest economic need for the community, while actually, the salmon-based economy is the leading economic indicator, especially when combined with the other beneficial uses that are being harmed."

Response –The Regional Water Board's position on a complete moratorium on all timber harvesting activities has been addressed above. In the absence of such a prohibition, the Regional Water Board must acknowledge the potential for some sediment discharge to result from HRC's ongoing timber operations, as is reflected in Finding 94 and other Findings in the draft Order. The recognition of the potential for some discharge to occur is made explicit as well as by the very fact that the proposed Board action is adoption of WDR's, which is the regulatory tool created by the Porter-Cologne Water Quality Action to regulate discharges such as to, *"implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance [Wat. Code § 13263]"* The overall strategy for Elk River as articulated in the TMDL Action Plan includes WDRs as the regulatory mechanism to implement the hillslope indicators and numeric targets and the zero load allocation. The Regional Water Board expects HRC to participate in the Stewardship Program, which is designed to promote cleanup and restoration efforts. Further, in addition to providing technical input, it is anticipated that HRC will contribute financially to some extent to these cleanup and restoration efforts.

22. **Comment** – Gayle Totton stated that the Native American Heritage Commission has the following concerns:

“There is no Tribal Cultural Resources (TCR) section or subsection addressing questions of significance in the Initial Study / Environmental Checklist as per California Natural Resources Agency (2016) “Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form,”
<http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf>

There is no documentation of government-to-government consultation by the lead agency under AB-52 with Native American tribes traditionally and culturally affiliated to the project area as required by statute, or that mitigation measures were developed in consultation with the tribes. Tribal contact during Cultural Resource assessments does not meet the requirements for government-to-government consultation.”

Response – The initial study and associated documents were submitted to the State Clearinghouse (SCH) on August 30, 2016 and ultimately adopted by the Regional Water Board on November 30, 2016. Prior to submittal to the SCH, the Regional Water Board sent letters to the Wiyot Tribal Cultural Director informing the tribe of the proposed project and providing them with the opportunity to request consultation. We did not receive a response. This documentation is available in the record.

When preparing the initial study prior to the August 2016 submittal to the SCH, the CEQA environmental checklist form had not yet been revised to include evaluation of TCRs, so although the Regional Water Board evaluated TCRs and provided the opportunity to consult, the Initial Study checklist did not include TCRs because the revisions to Appendix G had not been finalized at that time (that revision occurred in 2017).

The subsequent mitigated negative declaration for the draft Order is substantially the same environmental analysis that was adopted by the Regional Water Board on November 30, 2016, with the exception that it includes and evaluates the potential impacts of revisions to the 2016 Order. The Regional Water Board complied with section 21080.3.1. (b) when it released the Mitigated Negative Declaration in 2016 and sent consultation letters to affected tribes. This subsequent Mitigated Negative Declaration was prepared to discuss several changes to the Project, including those where mitigation measures have been substituted for those measures previously adopted. No impacts to Tribal Cultural Resources are expected as a result of these substitute mitigation measures and other changes to the Project.

23. Comment – From Jesse Noel, *“Please explain with specificity whether the NCRWQCB’s refusal to require effective mitigations of immediate impacts stems from reliance on the 404 f 1 a exemption in any manner---or whether the refusal or failure to mitigate sources from an underground policy or regulation?”*

Response – The reference to Clean Water Act section 404 and exemptions to the requirement to obtain a section 401 Water Quality Certification that are contained in section 404 (f)(1) are not applicable here. The Order does not include a Clean Water Act Water Quality Certification, it regulates waste discharges from timber operations under the Regional Water Board’s authority under Porter-Cologne. (Wat.Code §13000 et.seq.) Regional Water Board staff disagree with Mr. Noel’s assertion that we are refusing to require effective mitigations. The proposed Order establishes a comprehensive package

of robust requirements to address water quality impacts from HRC's timber harvesting and related activities.

24. **Comment** – From Jesse Noel, “*where is the finding re WDR attains TMDL margin of safety?*”

Response – Under federal regulations, TMDLs must be established at levels necessary to attain and maintain the applicable water quality standards with seasonal variations and a margin of safety (MOS) (40 CFR § 130.7(c)(1)). This requirement does not apply to establishment of WDRs, however, the stringent requirements of the WDR implement TMDL requirements and therefore indirectly reflect the MOS built into the TMDL.

25. **Comment** – Vivian Helliwell state, “*The new draft order fails to consider the effects of a gap in the monitoring procedures, specifically an “inadequate” trigger of 3” of rain in a 24 hour period to inspect roads for sediment delivery to Elk River following cumulative rain storm events.*”

Response – Regional Water Board staff agree that the 3 inch trigger should be revised. Historical daily rainfall records from the California Data Exchange Center (CDEC) for the National Weather Service station at Woodley Island in Eureka show that for the period spanning water years 1998 to 2018, rainfall exceeded 3 inches in a 24 hour period three times, 2.5 inches nine times, and two inches 25 times. Therefore, the rainfall trigger for road inspections has been revised to 2.5 inches in any 24-hour period. See revised sections IV.A.1.a.ii and b.ii.

26. **Comment** – Vivian Helliwell states, “*Requirements that the timber company self-report violations of the WWDR when inspecting roads sets up a natural conflict of interest.*”

“The Regional Board staff indicated that the public is responsible for locating and reporting sediment delivered from road failures connected to the stream, even though the sediment sources are on private property and are not accessible to the public.”

Response – Self reporting is an essential component of all of the Regional Water Board's regulatory programs. Both Waste Discharge Requirements that implement state law, and Regional Water Board issued NPDES permits that implement Clean Water Act requirements rely on dischargers self monitoring to report discharges from their operations. HRC staff are on the ground throughout the watershed on a daily basis. It is essential and appropriate to require HRC staff to report any noncompliance and more importantly, conduct and report any needed corrective action in a timely manner.

Ms. Helliwell may have misunderstood a statement by Regional Water Board staff regarding members of the public reporting occurrences of sediment discharge. The public is not responsible for locating and reporting potential water quality violations, but the Regional Water Board welcomes and responds to any reports of such occurrences that members of the public may encounter.

27. **Comment** – Vivian Helliwell states, “*The Board should designate a local agent or agents that could be available to inspect roads on short notice in the event of storm events, to avoid the result that road sediment connectivity to the stream may go unidentified.*”

Response – The WDR requires HRC and its staff inspect and report on the connectivity between road sediment discharges and streams. Regional Water Board staff are out on site as often as possible to inspect- subject to limitations of time, distance from the office, and other sites throughout the region to oversee.

28. **Comment** – Stephanie Bennett asks the following questions:

"#1: What is the budget for this proposed Recovery? --Salt River cost was \$7.2 million for 1.5 miles....Elk River has 18 miles. Seems like the budget would be close to \$75,000,000 - \$100,000,000 ?? Explain.

#2. What are the funding sources of this budget? All public, right?

#3 How much \$\$ is the polluter contributing to this Recovery sited by its pollution?

--what portion of this Recovery Plan did the Polluter agree to?

--if it hadn't polluted for the past 30 years no Recovery Plan w eded so to be just & fair, it--the timber industry--should pay to clean up its mess

--is there a contingency bond from the polluter? nah...let the damaged peons exhaust their finances sueing the timber industry, as your own attorneys keep advising us to do so they don't have to. Really...does this sound like "environmental justice?"

#4 How much \$\$ is allocated in this secret budget to repairing residential homes & properties?

--our home needs to be raised immediately due to the timber industry's rapacious & unregulated bad behaviors, but WQ hasn't provided the funds nor has our polluting timber neighbor

--Flood insurance now costs over \$4,000/year when 15 years ago it was less than \$400. A ten-fold increase caused entirely by our neighbor operating under WQ's guidance. (A total failure for the public trustee if success means protecting resources)

--WQ knows this & evidently endorses the destruction of our private property & our lives because we have no power. Otherwise WQ would exercise its civil liabilities authority to abate this injustice.

#5 What is the status of the South Fork water supplies?? We've been told for years that "WQ is working on it" or that "it's a ministerial glitch in the order".

How sick is that to let people go for decades with unsanitary water because you all can't reconcile your glitches?? Allocate some of the Recovery Plan budget for that, OK?

Why isn't WQ addressing this serious health & safety need caused by WQ's policies?

Does WQ assert that North Folk residents are entitled to good water but not South Fork ones? Is this because Jesse lives on the South Fork & WQ hopes he will get sick & die? He already got assaulted & brutally battered by a young man who agrees w/WQ that he's a nuisance & this assailant also claimed that he was an invitee of HRC.. So if you can't strangle us to death then you'll just oppress us with sick water & flood peril."

Response – Questions #1-4 appear to mainly address costs associated with the ERRA as well as the increased financial costs related to increased flooding, which are beyond the scope of the Order. Question #5 is related to Cleanup and Abatement Order No. 98-100, requiring Pacific Lumber Company (and its successor, HRC) to provide

replacement drinking and agricultural water. While the Regional Water Board found Pacific Lumber's logging activities was responsible for damaging water supplies, questions related to Order No. 98-100 or expansion of its requirements, is beyond the scope of the current project.

29. **Comment** – Stephanie Bennett asks, “*CDF and NCRWQCB: How do each of you define THE PROBLEM IN ELK RIVER using plain language rather than your boilerplate agency-speak? (if you rely on cutting & pasting the same tired agency responses you've been using for 30 years then you prove I'm right and you fail this test.)*”

Response – With respect to cumulative impacts associated with excess sediment impairment leading to the 303(d) listing, development of the TMDL Action Plan, and numerous other Regional Water Board actions over the past 20 years or more, the problem is described in Findings 2 through 6 and other Findings of the draft Order, and in great detail in the Attachment B of the draft Order, the *Upper Elk River: Technical Analysis for Sediment* (Tetra Tech, 2015), and in the TMDL Action Plan, and most recently, in the *Elk River Recovery Assessment: Recovery Framework* report.

30. **Comment** - Stephanie Bennett asks, “*NCRWQCB and CDF: You assert that this WDR will achieve "a conceptual zero" of timber trash to attain the dumbed-down TMDL goal. Does this mean that Elk River Residents will only be conceptually buried in timbers' immaculate conception of trash? Does this WDR rely on conceptual enforcement or actual enforcement? Since "conceptual zero" is a faith-based belief aren't you infecting public policy with religion? Demonstrate where conceptual zero is located on the number line.*”

Response – The TMDL sets the load allocation at zero, but acknowledges that it is not possible to eliminate all sediment discharges, only those that are controllable. This is consistent with the Regional Water Board's Basin Plan, which describes controllable water quality factors as those “actions, conditions, or circumstances resulting from man's activities that may influence the quality of waters of the State and that may be reasonably controlled.” The WDR establishes requirements that apply throughout HRC's timberlands in the Upper Elk River watershed that are designed to eliminate or minimize anthropogenic sediment discharge to the extent feasible directly from discrete sites, such as road failures and other ECP sites, as well as indirectly, by establishing limits on tree removal that could result in increased runoff and mobilization of in-channel stored sediment. The TMDL requires an evaluation of the zero load allocation and the Regional Water Board will assess whether regulatory and other actions in the watershed have restored assimilative capacity and protection of beneficial uses by 2031.

The WDR will rely on enforcement as necessary and appropriate to address violations of applicable water quality requirements and permit provisions.

31. **Comment** - Stephanie Bennett asks, “*Explain what "environmental justice" means to you and why it's absent in Elk River. Can you describe any other North Coast watershed that does exhibit environmental justice? Conceptualize how environmental justice looks in Elk River? Do the Residents feel safe and respected by you? Are the non-human species honored with restored habitat and increased protections, paid for by the polluters? Are the Residents' homes raised above the unnaturally increasing floodwaters, with all past and future damages paid for by the polluters? Do you discover the value of self-respect? ahhh....what a fantasy....but still worth conceptualizing.*”

Response – California Government Code section 65040.12, defines “environmental justice” as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.”

California was one of the first states in the nation to codify environmental justice in statute. Beyond the fair treatment called for in code, leaders in the environmental justice movement work to include those individuals disproportionately impacted by pollution in decision making processes. The aim is to lift the unfair burden of pollution from those most vulnerable to its effects. The State Water Board has established an environmental justice program, information regarding that program is available at:

https://www.waterboards.ca.gov/water_issues/programs/outreach/education/justice.shtml

32. **Comment** - Stephanie Bennett asks, “*Explain the legal authority your agencies rely on for taking our private properties WITHOUT just compensation. Is it CEQA? Clean Water Act? Forest Practices Act and its conceptually negative declaration? Porter-Cologne? John Corbett? Governor Newsom? (I've asked this question scores of times over the years and neither CDF or NCRWQCB is capable of providing a coherent answer. Your failure to answer this simple question is further objective evidence that I am right and you are abusing your agency discretion).*”

Response – Regional Water Board staff do not agree with this statement.

33. **Comment** – From Jesse Noell, “*The WDR must accommodate the continued existence and breeding success of Margaritafera sulcata.....a species that is dependent upon salmonids gills for successful transport of larvae to their rearing habitat. Sulcata is not a HCP listed species but is an aquatic receptor. The WDR must address and assure sulcata's survival before accommodating important economic development needs of the discharger, no?*”

Response – The goal of the WDR and other non-regulatory Regional Water Board actions are aimed at controlling sediment production from upslope timber operations and addressing existing sediment impacts throughout the watershed in order to bring about improvement in aquatic habitat as well as reduction or elimination in nuisance conditions. Restoration of habitat for anadromous salmonids is considered a high priority by the Regional Water Board and guides many of our actions with respect to Elk River. One measure of the success of our many actions in the Elk River watershed over the past 20 years or more will be increased numbers of adult salmonids returning to the watershed and spawning. While an assessment of freshwater mussels is beyond the scope of the project, any organisms that depend upon anadromous salmonids will benefit from their success.

34. **Comment** – Jesse Noel asks, “*Does the Elk TMDL and/or WDR rely on the 404 f1a exemption in any way?*”

Response – See response to comment No.23 above for discussion of section 404 of the Clean Water Act. The WDR and TMDL do not rely on Clean Water Act section 404 exemptions. The WDR does not serve as a Clean Water Act section 401 certification, which would be required for activities that require a Clean Water Act section 404 dredge and fill permit from the Army Corps of Engineers.

35. **Comment** – Jesse Noel asks, “It also seems cheaper to have the taxpayer buy up the high risk soil areas because as I understand the state and feds gave assurances to timber that the state would accommodate logging, is this accurate?”

Response – That question is beyond the scope of this project.

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