Resolution No. R1-2015-0018
Attachment 3

California Environmental Quality Act Findings for Potentially Significant Impacts
Prepared for the
Water Quality Objective Update Amendment

Introduction

The California Environmental Quality Act (CEQA) and the State CEQA Guidelines require that a public agency consider the environmental impacts of a project before a project is approved and make specific findings for identified significant environmental effects. (Pub. Resources Code, § 21081; Cal. Code Regs., tit. 14, § 15091.) This document includes written findings for each of the significant effects identified in the *Proposed Amendment to the Water Quality Control Plan for the North Coast Region to Update Water Quality Objectives Draft Supplemental Environmental Document (SED) (Staff Report)*.

The proposed Water Quality Objective (WQO) Update Amendment includes a number of actions relative to updating water quality objectives for both surface waters and groundwaters in the North Coast Region. The four main components of the proposed WQO Update Amendment are:

1) Develop a new narrative groundwater toxicity objective;
2) Update the chemical constituents objectives for surface waters and groundwaters;
3) Update the dissolved oxygen (DO) objectives for surface waters; and
4) Include substantive editorial revisions to improve clarity on the implementation of water quality objectives, readability and organization through non-substantive editorial changes.

Specific compliance measures are detailed in section 4.4 of the Staff Report, along with associated impacts and mitigation measures. Further discussion of potential environmental impacts and levels of significance from implementing compliance measures is presented in section 4.5.

While the compliance measures themselves are forms of mitigation to be applied in the context of the activity or factor influencing chemical constituents, toxicity and DO, CEQA requires review of environmental impacts that result from measures intended to improve the environment.

Many of the projects that might be undertaken by affected persons as a result of the WQO Update Amendment would be subject to a project-level CEQA review conducted by the Regional Water Board or by another lead agency, which would entail project-specific identification and mitigation of any significant environmental effects. These regulatory requirements and mitigation measures are likely to reduce many, but not all, of the potential impacts of the WQO Update Amendment to less than significant levels. In some cases it may not be possible to mitigate the impacts to a less-than-significant level. In addition, some actions may not require discretionary approvals or an agency with regulatory authority may not take action. Finally, some impacts may not be identified or mitigated because it is impossible to predict who will take action in response to the WQO Update Amendment, or what action they will take.

Potentially significant environmental impacts resulting from adoption of the proposed WQO Update Amendment are summarized in the tables below. Pursuant to CEQA

Guidelines section 15091, the Regional Water Board must make one or more of the following findings for each potentially significant impact identified:

> **(a)(1):** Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final SED.
> **(a)(2):** Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
> **(a)(3):** Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final SED.

Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

The Regional Water Board has identified potentially significant impacts, including potentially significant cumulative impacts, which are less than significant with mitigation incorporated to the resources presented in Table 1A. Table 1B presents the mitigation measures that when implemented would reduce impacts to less than significant levels. Table 1C presents the resources categories that are potentially significant and unavoidable as a result of the implementation of compliance measures related to chemical constituents and toxicity.

Table 1A
Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Potentially Significant Impact*
Aesthetics	Degraded visual character of a site. Unsightly views of additional wastewater treatment ponds, waste management/treatment units, reservoir or stream aeration structures Decreased views or unsightly presence in a scenic vista due to the installation of additional mitigation or remediation equipment or associated material storage necessary to cleanup spills, unauthorized releases, treat wastewater, physically address DO. Potential glare from ponds or unsightly water facilities
Air Quality	Construction-related emissions could include exhaust from construction equipment and fugitive dust from land clearing, earthmoving, movement of vehicles, and wind erosion of exposed soil during reservoir construction or removal, stream and/or riparian restoration. Increased emissions or gases from the expansion and/or extended operation and maintenance of remedial action facilities. Potential odors from stagnant water in sediment basins or ponds. Potential increase in emissions from transportation of soil and groundwater for

Table 1A
Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Potentially Significant Impact*
	offsite disposal. Thermal destruction incinerators or phytoremediation actions could produce off-gas requires treatment by an air pollution-control system to remove particulates and neutralize and remove acid gases (HCl, NOx, and SOx).
Biological resources	Phytoremediation and constructed wetlands could result in the transfer of contaminants across media from soil and water to air. Phytoremediation and constructed wetlands could result in bioaccumulation of toxic compounds if primary producing organisms became prey for threatened or endangered species. Reduction in surface flows through groundwater extraction or increased reliance on riparian rights could degrade riparian and special status species habitat
Cultural Resources	Construction disturbance from earth moving.
Geology and Soils	Implementation of compliance measures such as wells, ponds, trenches, excavations and other treatment facility expansions that involve construction may result in temporary ground disturbances that cause erosion. Soil excavation and trenching could result in erosion or soil collapse. Installation of remedial/treatment facilities on expansive soils. Potential soil erosion from disturbed areas associated with stream stabilization, stream bank revegetation, culvert replacement, stream crossing construction, large woody debris placement. Construction activities or poorly designed facilities could results in short term and long term erosion, and could results in soils compaction reducing soil moisture and biological functions.
Hazards and Hazardous Materials	Accidental spill or release of materials which have been removed from soil and or groundwater though a remediation or treatment action or from the construction of such facilities. Natural attenuation if not monitored correctly could result allow the migration of hazardous substances. In-situ and ex-situ physical, chemical and thermal remediation or treatments, by design, have the potential to create byproducts or mobilize pollutants in air, soil, and water. Physical, chemical and biological treatment of wastewater has the potential to create byproducts or mobilize pollutants in air and water.
Hydrology/water quality	Spills, leaks or discharges from the construction of compliance measures could directly affect water quality and indirectly affect waters by polluting storm water runoff. Soil excavations, compost operations or land farming could result in erosion, sedimentation of nearby waters. During the reductive de-chlorination process, metals, such as arsenic, manganese

Table 1A
Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Potentially Significant Impact*
	and antimony, may be mobilized in the subsurface. PCE is reductively de-chlorinated to Trichloroethylene (TCE), cis- and trans-1,2-DCE and vinyl chloride (VC). Ozone injection can cause chromium III to turn to chromium VI. Fracturing hydraulically separate zone could lead to cross contamination of uncontaminated aquifers, water bearing zones, or nearby surface waters. Pump and treat systems could result in a lower of the groundwater table or an alteration of hydrology by impeding the natural groundwater gradient. Pump and treat systems could alter a sites hydrology and adversely affect nearby streams, riparian areas or wetlands. Pump and treat systems could result in the alteration of nearby stream hydrology adding to the total flow in the stream. Land application of wastewater could result in groundwater quality impacts through the accumulation of organics, salts, or precipitation of naturally occurring metals in soils. Temporary sediment discharges that exceed water quality objectives from construction and/or restoration activities. Excessive use of rip-rap or stream stabilization structures intended to beneficially affect flow could alter conditions downstream. Work within and adjacent to waters increases the risk of leaking equipment or hazardous material spills, short term turbidity increases and/or discharges of settable solids. Decrease stream flows and/or aquifer storage from dust abatement. Alterations of natural hydrology and increases in stream temperatures by concentrating or redirecting road runoff. Increased risk of soil or groundwater contamination with concentrated minerals, salts, or persistent pesticides. Increased risk of erosion and sedimentation from the construction of trails, stream crossings, and riparian grazing. Increase risk of groundwater contamination of petroleum hydrocarbons and metals from the infiltration of storm water runoff.
Land Use Planning	Installation or expansion of remediation or treatment facilities may have a potential for direct and indirect impacts to a candidate, sensitive, or special status species or their habitat and could conflict with applicable conservation plans. The groundwater toxicity objective could present a conflict with groundwater management strategies such as aquifer storage and recovery
Noise	Temporary increases in noise from heavy equipment during compliance

Table 1A
Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Potentially Significant Impact*
	measures installation or upgrade. Temporary increase in noise from trucks and heavy equipment during excavations. Temporary increase in noise from drill rigs installing monitoring wells, injection wells, or extraction wells. Use of pumps, mixers, and compressors to sample, remediate and treat water. Use of thermal treatment units/incineration can produce noise above ambient levels. Construction, modification or removal of facilities for the purpose of groundwater or surface water extraction, energy supply and/or recreation could result in short term and long term impacts from noise. Permanent increases in noise from wastewater treatment facility upgrades, or from decade-long cleanup projects.
Public Services	Retaining and preserving riparian areas can lead to increases in forest fires leading to an increase demand on fire services.
Transportation/traffic	Temporary increase in truck traffic from the construction or expansion of a remediation or treatment system. Temporary increase in traffic from lane closures due to subsurface investigations. Temporary increase in traffic from excavation activities.
Utilities and Service Systems	Construction or demolition of facilities could result in short term interruption of utilities such as sewer, water, gas, electricity, phone, or internet. Dam removal, water conservation and/or reliance on alternative water sources could lead to short term interruptions and could lead to a decrease in available water supply and landfill capacity.

*Potentially significant impacts as listed in section 5.4 and 5.5.2 of the Staff Report (February 25, 2015)

Table 1B
Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Mitigation Measure*
Aesthetics	AesMM-1: Building storage facility structures or fences to contain equipment or materials. AesMM-2: Proper siting, constructing berms or excess freeboard around the perimeter of a ponds or waste management unit. AesMM-3: Planting vegetation such as native trees, grasses, and forbs.
Agriculture or Forest Resources	AGRMM-1: Coordination between project proponents, Regional Water Board staff and other local, state and federal agencies to achieve site specific potential shade, nutrient load reductions, areas of thermal refugua, and attempt to ensure the

Table 1B
Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Mitigation Measure*
	preservation of agricultural lands.
Air Quality	AQMM-1: Air Quality Control Plans • Monitoring and reporting • Dust control • Avoid days or poor air quality • Monitor levels and cease work prior to exceeding standards • Retrofit equipment • Use low emissions vehicles when possible • Schedule work to reduce the use of high emission vehicles. • Contingency Plans for AQ Violations AQMM-2: Particulate matter and gas removal systems • Baghouses, scrubbers, and wet electrostatic precipitators; packed-bed scrubbers and spray driers.
Biological resources	BRMM-1: Consult the applicable state and federal resource protection agencies BRMM-2: Delineate and avoid any project specific environmental sensitive areas. BRMM-3: Species specific work windows to avoid contact or disturbances. BRMM-4: Compensatory mitigation to create, replace, or restore filled or modified waters of the U.S. (streams and wetlands). BRMM-5: Remedial action plans proposing phytoremediation would need to evaluate the potential for bioaccumulation of toxic compounds and select plans species that will not become primary producers in the food chain. BRMM-8: Developing species relocation plans or interpreting natural site vegetative conditions to include sensitive flora. AQMM-1: Air Quality Control Plans • Monitoring and Reporting • Contingency Plans for AQ Violations H/WQMM-1: Develop storm water pollution prevent plans. H/WQMM-2: Water Quality Monitoring H/WQMM-3: Develop project specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account. H/WQMM-4: Implement flow rate modeling, monitoring, prohibitions and restrictions within specific Regional Water Board permits and orders.
Cultural Resources	CRMM-1: Consult with Tribes, historical societies, federal, state and local agencies regarding location of cultural resources prior to use of heavy equipment in areas with known or suspected cultural resources. Projects subject to the jurisdiction of the Water Boards will be required to comply with Public Resource Code section 21159. This is expected to ensure the implementation of necessary project

Table 1B
Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Mitigation Measure*
	specific actions to avoid, minimize and mitigate any impacts to historical, archaeological, and paleontological resources or site, or unique geologic features. All future actions must comply with the CEQA process and requirements for tribal consultation provided by Senate Bill 18 (SB 18) (State 2004, Ch 905) and Government Code section 65252.
Geology and Soils	H/WQMM-1: Develop storm water pollution prevent plans. GSMM-1: Include erosion control measures in facility pollution prevent plans, remedial action plans, or site health and safety plans. H/WQMM-3: Develop project specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account.
Hazards and Hazardous Materials	H/WQMM-1: Storm Water Pollution Prevent Plans H/WQMM-2: Water Quality Monitoring H/WQMM-3: Develop site specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account. AQMM-1:Air Quality Control Plans • Monitoring and Reporting • Contingency Plans for AQ Violations HHMMM-1: Project specific health and safety plans
Hydrology/water quality	H/WQMM-1: Develop storm water pollution prevent plans. H/WQMM-2: Water Quality Monitoring H/WQMM-3: Develop site specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream and groundwater quality and quality from structural compliance measures H/WQMM-4: Implement flow rate modeling, monitoring, prohibitions and restrictions within specific Regional Water Board permits and orders.
Land Use Planning	BRMM-1: Consult the applicable state and federal resource protection agencies BRMM-2: Delineate and avoid any project specific environmental sensitive areas. BRMM-5: Remedial action plans proposing phytoremediation would need to evaluate the potential for bioaccumulation of toxic compounds and select plans species that will not become primary producers in the food chain. H/WQMM-1: Develop storm water pollution prevent plans. H/WQMM-2 Water Quality Monitoring

Table 1B
Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Mitigation Measure*
	H/WQMM-3: Develop project specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream and groundwater quality and quality from structural compliance measures. USSMM-3: Plan for and develop conservation and efficiency projects for water supply. Plan for and develop recycled water projects and aquifer storage and recovery (ASR) projects.
Noise	NOMM-1: Noise Control Plans • Decibel monitoring • Peak noise working hours • Evening working hours • Equipment inspection • Muffler inspections • Nearby receptors • Compliant process plan • Operations contingency plan NOMM-2: Advanced notifications NOMM-3: Sound control structures NOMM-4: Equipment buffer
Public Services	H/WQMM-1: Storm Water Pollution Prevent Plans H/WQMM-3: Develop site specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account. H/WQMM-5: Plant native vegetation that has evolved with the natural environment. Allow for the removal or thinning of upland vegetation that has high evapotranspiration rates and increases fire risks.
Transportation/traffic	TTMM-1: Traffic Control Plans • Signage locations • Through traffic routes • Designated truck routes • Construction site access • Designated work and staging areas • Parking areas • Pedestrian and bicycle safety access • Detours and lane closures • Emergency access routes and detours • Flaggers TTMM-2: Night Work

Table 1B
Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Chemical Constituents and Toxicity in Surface Water and Groundwater

Environmental Issue	Mitigation Measure*
	TTMM-3: Strategic planning and design to avoid and minimize the placement of facilities that have site distance conflicts. Case-by-case evaluations of site distance. BRMM-4: Compensatory mitigation to create, replace, or restore filled or modified waters of the U.S. (streams and wetlands).
Utilities and Service Systems	USSMM-1: Coordinate with the underground service alert system, and utility providers to develop project specific plans to avoid and minimize any potential utility interruptions.

*Mitigation measures as discussed in section 9.4 and 9.5.2 of the Staff Report (August, 20, 2013)

CEQA Findings § 15091 (a)(1) & (a)(2)

The Regional Water Board finds that changes or alterations can be required in, or should be incorporated into, projects affected by the DO objective that would avoid or substantially lessen the significant environmental effect of shade measures to a less than significant level. The mitigation measures listed above are feasible and can be implemented by the Regional Water Board or another public agency with jurisdiction over the resource to offset the impact to less than significant levels.

Measures to Control Dissolved Oxygen

The Regional Water Board has identified potentially significant impacts, including potentially significant cumulative impacts, which are less than significant with mitigation incorporated to the resources presented below Table 2A. Table 2B presents the proposed mitigation measures that when implemented will reduce impacts to less than significant levels.

Table 2A. Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Potentially Significant Impact*
Aesthetics	Degraded visual character of a site. Unsightly views of additional wastewater treatment ponds, waste management/treatment units, reservoir or stream aeration structures Decreased views or unsightly presence in a scenic vista due to the installation of additional mitigation or remediation equipment or associated material storage necessary to cleanup spills, unauthorized releases, treat wastewater, physically address DO. Potential glare from ponds or unsightly water facilities
Agriculture and Forest Resources	Potential conflict with or conversion of prime agricultural land or land subject to the Williamson Act from implementing grazing restrictions, riparian buggers or riparian restoration. Municipal, domestic, agricultural and industrial water supply could be impacted by certain restrictions on the extraction of water from riparian areas or areas of

Table 2A. Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Potentially Significant Impact*
	known thermal refugia. Switching from surface water diversions to groundwater pumping could lower water table, reduce soil moisture, contribute to land subsidence and reduce aquifer storage capability. Regulation on water use could lead to the conversion of agricultural lands.
Air Quality	Construction-related emissions could include exhaust from construction equipment and fugitive dust from land clearing, earthmoving, movement of vehicles, and wind erosion of exposed soil during reservoir construction or removal, stream and/or riparian restoration. Potential odors from stagnant water in sediment basins or ponds.
Biological resources	Risk of introducing invasive species thorough pasture, hay, rangeland planting and management and stream or riparian restoration. Risk of conflict between site potential shade and requirements of sensitive flora or fauna. Operations of aeration systems for DO have the potential to supersaturate conditions, exceed water quality standards and lead to accelerated mortality rates of salmoninds. Short term construction, stream dewatering or diversions, turbidity discharges from construction actives or in-stream dam removal, stream and/or riparian restoration. Several species of fauna (e.g., snakes, fish, salamanders, and birds) have been entrapped or tangled in erosion control products such as the plastic casing
Cultural	Short term construction disturbance from earth moving.
Geology/Soils	Implementation of compliance measures such as wells, ponds, trenches, excavations and other treatment facility expansions that involve construction may result in temporary ground disturbances that cause erosion. Potential soil erosion from disturbed areas associated with stream stabilization, stream bank revegetation, culvert replacement, stream crossing construction, large woody debris placement. Construction activities or poorly designed facilities could results in short term and long term erosion, and could results in soils compaction reducing soil moisture and biological functions.
Hydrology/water quality	The increase in groundwater extraction could reduce surface water flows and result in increased pollutant concentration due to less dilution. The removal of surface water impoundments could result in a short term violation of water quality standards as sediments and organic rich waters flow downstream. The removal of on-stream and off-stream storage facilities, dams, and construction of minimum bypass flow and fish passage structures could result in changes to hydrology in streams as well as short term violation of water quality standards.

Table 2A. Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Potentially Significant Impact*
	Switching from on-stream storage facilities to springs, seeps or groundwater as potential water sources could reduce the input of cold water and could results in impacts to areas of thermal refugia. Spills, leaks or discharges from the construction of compliance measures could directly affect water quality and indirectly affect waters by polluting storm water runoff. Reduction in stream flows due to the increase in evapotranspiration from increased riparian tree retention. Temporary sediment discharges that exceed water quality objectives from construction and/or restoration activities. Excessive use of rip-rap or stream stabilization structures intended to beneficially affect flow could alter conditions downstream. Work within and adjacent to waters increases the risk of leaking equipment or hazardous material spills, short term turbidity increases and/or discharges of settable solids. Breaching lakeshore levees to create diverse habitat features and lower lake levees to create riparian fringe habitat has the potential to adversely affect hydrology and natural flow patterns. Operations of aeration systems for DO have the potential to supersaturate conditions, exceed water quality standards and lead to accelerated mortality rates of salmoninds. Decrease stream flows and/or aquifer storage from dust abatement. Alterations of natural hydrology and increases in stream temperatures by concentrating or redirecting road runoff. Increased risk of soil or groundwater contamination with concentrated minerals, salts, or persistent pesticides. Increased risk of erosion and sedimentation from the construction of trails, stream crossings, and riparian grazing. Increase risk of groundwater contamination of petroleum hydrocarbons and metals from the infiltration of storm water runoff.
Land Use Planning	Reliance on alternative water sources, water conservation efforts, and preservation of areas of known thermal refugia could have a conflict with local plans or ordinances that call for an increase through various water supply and/or development projects. Municipal, domestic, agricultural and industrial water supply could be impacted by certain restrictions on the extraction of water from riparian areas or areas of known thermal refugia. Construction or expansion of off-stream water storage facilities could conflict with local plans or ordinances.
Noise	Temporary increases in noise from heavy equipment during compliance

Table 2A. Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Potentially Significant Impact*
	measures installation or upgrade. Temporary increase in noise from trucks and heavy equipment during excavations
Public Services	Retaining and preserving riparian areas can lead to increases in forest fires leading to an increase demand on fire services.
Transportation/traffic	Increased tree retention may conflict with transportation agencies (public roads) site distance requirements and areas designated as clear recovery zones. Short term traffic increases associated with sediment reduction project, construction projects, dam removal, stream and/or riparian restoration. A reduction in water resource availability could lead to agricultural land conversion, which in turn could lead to increased development and traffic.
Utilities and Service Systems	Construction or demolition of facilities could result in short term interruption of utilities such as sewer, water, gas, electricity, phone, or internet. Dam removal, water conservation and/or reliance on alternative water sources could lead to short term interruptions and could lead to a decrease in available water supply and landfill capacity.

*Potentially significant impacts as listed in section 5.4 and 5.5.2 of the Staff Report (February 25, 2015)

Table 2B. Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Mitigation Measure*
Aesthetics	AesMM-1: Building storage facility structures or fences to contain equipment or materials. AesMM-2: Proper siting, constructing berms or excess freeboard around the perimeter of a ponds or waste management unit. AesMM-3: Planting vegetation such as native trees, grasses, and forbs.
Agriculture or Forest Resources	AGRMM-1: Coordination between project proponents, Regional Water Board staff and other local, state and federal agencies to achieve site specific potential shade, nutrient load reductions, areas of thermal refugua, and attempt to ensure the preservation of agricultural lands.
Air Quality	AQMM-1: Air Quality Control Plans • Monitoring and reporting • Dust control • Avoid days or poor air quality • Monitor levels and cease work prior to exceeding standards • Retrofit equipment • Use low emissions vehicles when possible • Schedule work to reduce the use of high emission vehicles. • Contingency Plans for AQ Violations AQMM-2: Particulate matter and gas removal systems • Baghouses, scrubbers, and wet electrostatic precipitators; packed-bed scrubbers and spray driers.
Biological resources	BRMM-1: Consult the applicable state and federal resource protection agencies

Table 2B. Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Mitigation Measure*
	BRMM-2: Delineate and avoid any project specific environmental sensitive areas. BRMM-3: Species specific work windows to avoid contact or disturbances. BRMM-6: Use certified weed-free grass and seed mix to prevent the introduction of invasive species. BRMM-*7:* Select appropriate or alternate structural BMPs such as bio-degradable, synthetic free or earthen material BMPs. Implement non-structural BMPs such as scheduling, proper design and the removal of temporary BMPs for erosion and sediment controls after stabilization and or project completion. BRMM-8: Developing species relocation plans or interpreting natural site vegetative conditions to include sensitive flora. BRMM-9: Water drafting protocols • Consult CA Fish and Wildlife • Consult SWRCB – Water Rights • Use water diversion fish screens • Velocity dissipaters • Habitat surveys • Stream buffers AQMM-1: Air Quality Control Plans • Monitoring and Reporting • Contingency Plans for AQ Violations H/WQMM-1: Develop storm water pollution prevent plans. H/WQMM-2: Water Quality Monitoring H/WQMM-5: Plant native vegetation that has evolved with the natural environment. Allow for the removal or thinning of upland vegetation that has high evapotranspiration rates and increases fire risks.
Cultural	CRMM-1: Consult with Tribes, historical societies, federal, state and local agencies regarding location of cultural resources prior to use of heavy equipment in areas with known or suspected cultural resources. Projects subject to the jurisdiction of the Water Boards will be required to comply with Public Resource Code section 21159. This is expected to ensure the implementation of necessary project specific actions to avoid, minimize and mitigate any impacts to historical, archaeological, and paleontological resources or site, or unique geologic features. All future actions must comply with the CEQA process and requirements for tribal consultation provided by Senate Bill 18 (SB 18) (State 2004, Ch 905) and Government Code section 65252.
Geology/Soils	H/WQMM-1: Develop storm water pollution prevent plans. GSMM-1: Include erosion control measures in facility pollution prevent plans, remedial action plans, or site health and safety plans. H/WQMM-3: Develop project specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account.

Table 2B. Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Mitigation Measure*
Hydrology/water quality	H/WQMM-1: Develop storm water pollution prevent plans. H/WQMM-2: Water Quality Monitoring H/WQMM-3: Develop site specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream and groundwater quality and quality from structural compliance measures. • Install and maintain erosion control measures (e.g. waterbars, rolling dips, mulch, rock rip-rap) to prevent discharge of excess sediment from soil disturbing activities. • Relocate roads away from unstable and landslide prone terrain. Drain roads away from unstable areas during construction, reconstruction of maintenance activities. Locate new roads on stable ground to the maximum extent practicable. • Minimize cutbank height and avoid placement of fill on steep slopes. Use off-channel water collection features for dust abatement purposes. • Install adequate number/type of road drainage features to prevent concentration of road runoff. • Seek professional (e.g. Natural Resources Conservation Service, local resource conservation district) in developing land management plans and observational techniques to ensure optimal stocking rates for rangelands. • Protect drainage channels from sediment contributions with vegetated buffers, wattles or similar erosion control devices. • Plant a cover crop on exposed soil to reduce the length of time in which soil is exposed to wind and water. Cover exposed soil that will not receive immediate planting with straw or other suitable erosion control material. • Use precision (site specific) farming techniques; monitor chemical condition of soil, water, and plant residuals carefully prior to applying fertilizers, pesticides, or water, including tailwater. • Leach soils within the root zone as necessary to prevent salt build up in that portion of the soil profile. • Avoid introduction of storm water into tailwater system to prevent impacts to storm water. • Maintain filter strips between fields and surface water to prevent discharge of tailwater directly into surface waters. • Don't concentrate drainage such that toxic levels of constituents are discharge to waters. H/WQMM-5: Plant native vegetation that has evolved with the natural environment. Allow for the removal or thinning of upland vegetation that has high evapotranspiration rates and increases fire risks. USSMM-3: Plan for and develop conservation and efficiency projects for water supply. Plan for and develop recycled water projects and aquifer storage and recovery (ASR) projects.
Land Use Planning	BRMM-1: Consult the applicable state and federal resource protection agencies BRMM-2: Delineate and avoid any project specific environmental sensitive areas. BRMM-3: Species specific work windows to avoid contact or disturbances.

Table 2B. Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Mitigation Measure*
	BRMM-4: Compensatory mitigation to create, replace, or restore filled or modified waters of the U.S. (streams and wetlands). BRMM-5: Remedial action plans proposing phytoremediation would need to evaluate the potential for bioaccumulation of toxic compounds and select plans species that will not become primary producers in the food chain. H/WQMM-1: Develop storm water pollution prevent plans. H/WQMM-2 Water Quality Monitoring H/WQMM-3: Develop project specific remedial action plans that take site characteristics including, geology, hydrology, environmental setting, and on-site and nearby structures into account. Ensure proper design, siting, and operational timing to reduce alterations of natural hydrology and adverse effects on stream and groundwater quality and quality from structural compliance measures. USSMM-3: Plan for and develop conservation and efficiency projects for water supply. Plan for and develop recycled water projects and aquifer storage and recovery (ASR) projects.
Noise	NOMM-1: Noise Control Plans • Decibel monitoring • Peak noise working hours • Evening working hours • Equipment inspection • Muffler inspections • Nearby receptors • Compliant process plan • Operations contingency plan NOMM-2: Advanced notifications NOMM-3: Sound control structures NOMM-4: Equipment buffer
Public Services	H/WQMM-5: Plant native vegetation that has evolved with the natural environment. Allow for the removal or thinning of upland vegetation that has high evapotranspiration rates and increases fire risks.
Transportation/traffic	TTMM-1: Traffic Control Plans • Signage locations • Through traffic routes • Designated truck routes • Construction site access • Designated work and staging areas • Parking areas • Pedestrian and bicycle safety access • Detours and lane closures • Emergency access routes and detours • Flaggers TTMM-2: Night Work

Table 2B. Mitigation Measures to Reduce Potentially Significant Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Mitigation Measure*
	TTMM-3: Strategic planning and design to avoid and minimize the placement of facilities that have site distance conflicts. Case-by-case evaluations of site distance. BRMM-4: Compensatory mitigation to create, replace, or restore filled or modified waters of the U.S. (streams and wetlands).
Utilities and Service Systems	USSMM-1: Coordinate with the underground service alert system, and utility providers to develop project specific plans to avoid and minimize any potential utility interruptions. USSMM-2: Develop waste management plans for dam removal projects. Coordinate with prospective landfills regarding the estimated amount of waste generated by a proposed project and landfill capacity. USSMM-3: Plan for and develop conservation and efficiency projects for water supply. Plan for and develop recycled water projects and aquifer storage and recovery (ASR) projects.

*Mitigation measures as discussed in section 5.4 and 5.5.2 of the Staff Report (February 25, 2015)

CEQA Findings § 15091 (a)(1) & (a)(2)

The Regional Water Board finds that changes or alterations can be required in, or should be incorporated into, projects affected by the water quality objective for DO that would avoid or substantially lessen the significant environmental effect resulting from sediment control measures to a less than significant level. The mitigation measures listed above are feasible and can be implemented by the Regional Water Board or another public agency with jurisdiction over the resource to offset the impact to less than significant levels.

Table 2C.
Potentially Significant and Unavoidable Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Potentially Significant and Unavoidable Impact
Agriculture and Forest Resources	Potential conflict with or conversion of prime agricultural land or land subject to the Williamson Act from implementing grazing restrictions, riparian buggers or riparian restoration. Municipal, domestic, agricultural and industrial water supply could be impacted by certain restrictions on the extraction of water from riparian areas or areas of known thermal refugia. Switching from surface water diversions to groundwater pumping could lower water table, reduce soil moisture, contribute to land subsidence and reduce aquifer storage capability. Regulation on water use could lead to the conversion of agricultural lands.
Hydrology / Water Quality	The increase in groundwater extraction could reduce surface water flows and result in increased pollutant concentration due to less dilution. The removal of surface water impoundments could result in a short term violation of water quality standards as sediments and organic rich waters flow

Table 2C.
Potentially Significant and Unavoidable Environmental Impacts Resulting from Compliance Measures to Address Dissolved Oxygen

Environmental Issue	Potentially Significant and Unavoidable Impact
	downstream.

CEQA Findings § 15091 (a)(3)

The Regional Water Board has identified potentially significant, agricultural and forest resource impacts from implementation of riparian buffers on agricultural and forested lands as a result of reasonably foreseeable methods of compliance with the WQO Update Amendment. While avoidance and minimization measures can be used to lessen impacts, there is no mitigation for loss of land; therefore, this is potentially significant and unavoidable impact. These impacts may occur because lands that implement new riparian protection actions or compliance measures to mitigate exceedances dissolved oxygen levels could remove some portion of land out of production. The Regional Water Board has identified that these riparian buffers are not prescriptive blanket measures to be implemented throughout the region and will be applied in a case by case manner. Avoidance and minimization measures identified in Table 2B can be used, such as managed riparian areas to lessen impacts. However, there is no mitigation for removing any land from production. This impact is therefore potentially significant and unavoidable.

The Regional Water Board has identified potentially significant agricultural and forest resource impacts from flow measures that result in a reduction in surface water allocated through a water right, which in turn could lead to an increase use of groundwater. Significant increases in the use of groundwater could potentially lower the water table in the shallow aquifer, reduce soil moisture, harm crops and contribute to land subsidence. While avoidance, minimization and mitigation measures such as water management projects (conservation and efficiency) will help lessen groundwater depletion, impacts may still be potentially unavoidable. This impact is therefore potentially significant and unavoidable.

The Regional Water Board has identified potentially significant, water quality impacts from tailwater and impoundment measures in cases where the installation of structural compliance measures may involve large scale excavation activities or the construction or demolition of a large scale infrastructure. Dam decommissioning will likely result in; temporary stream channel alterations from erosion and siltation; and result in increased turbidity, suspended sediment load and reduction of dissolved oxygen, which will likely exceed Basin Plan water quality objectives. Short term water quality exceedances may be acceptable in cases where long term benefits to beneficial uses outweigh short term impacts, based on detailed, site-specific information and findings. However dam removal may result in exceedences of water quality objectives and likely cause significant and unavoidable impacts.

The Regional Water Board has identified potentially significant, water quality impacts from switching from surface water diversions to groundwater pumping, which could lower water tables, reduce soil moisture, contribute to land subsidence and reduce aquifer storage capability. This could lead to a decreased assimilative capacity for pollutant and

water availability. Additionally, water quality impacts from pumping groundwater instead of diverting surface water could potentially deplete groundwater resources, which could potentially result in a reduction in surface water flows, particularly summer flows, which could affect surface water flows, DO and riparian areas. Mitigation measures identified above in Table 2B could greatly reduce impacts, but the Regional Water Board cannot ensure at this time that the appropriate lead agency would implement and enforce mitigation. Additionally, even with the implementation of avoidance, minimization or mitigation measures the impacts to water quality could still potentially be significant. These impacts are therefore potentially significant and unavoidable.

Cumulative Impacts

Cumulative impacts, defined in section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts. Cumulative impact assessment must consider not only the impacts of the proposed Basin Plan amendment, but also the impacts from other Basin Plan Amendments, municipal, and private projects, which have occurred in the past, are presently occurring, and may occur in the future, in the watershed during the period of implementation. The environmental impacts of actions taken by affected persons that are individually limited may be cumulatively considerable when viewed in conjunction with the effects of foreseeable past, current, and probable future projects in the North Coast Region. The Regional Water Board considered foreseeable past, current, and probable projects within the Board's permitting authority and projects under other agencies jurisdiction. The proposed WQO Update Amendment, in combination with these land use and water development projects, may have cumulative impacts on the environment that are similar to the impacts discussed in the preceding sections above.

Based on a review of the available information, and as a result of implementing the range of compliance measures from the preservation of shade to sediment controls and the modification of water supply to the potential expansion of wastewater treatment and groundwater remediation facilities, it has been determined that significant and unavoidable impacts to the environment have the potential to occur. In most cases these are impacts that are potentially widespread or common throughout the region, and could lead to cumulative watershed and/or region-wide impacts. Cumulative impacts are especially significant in areas that are already listed as impaired or otherwise degraded since the system or species has already lost resilience to external stressors. Due to the fact that many streams in the region are impaired and several rare, threatened and endangered are present throughout the region any adverse impact that has the potential to occur in multiple instances could be considered significant and unavoidable. Many of the potential impacts discussed below and throughout this analysis can be reduced through proper implementation of mitigation measures; however, cumulatively these impacts do have the potential for significant adverse effects on the environment.

- The removal of surface water impoundments could result in a short term violation of water quality standards as sediments and organic rich waters flow downstream.
- The removal of on-stream and off-stream storage facilities, dams, and construction of minimum bypass flow and fish passage structures could result in changes to hydrology in streams as well as short term violation of water quality standards.

- Switching from on-stream storage facilities to springs, seeps or groundwater as potential water sources could reduce the input of cold water and could results in impacts to areas of thermal refugia.
- Risk of introducing invasive species thorough pasture, hay, rangeland planting and management and stream or riparian restoration.
- Risk of conflict between site potential shade and requirements of sensitive flora or fauna.
- Several species of fauna (e.g., snakes, fish, salamanders, and birds) have been entrapped or tangled in erosion control products such as the plastic casing covering straw waddles, or from the monofilament fibers from silt fences that are either in place on active
- Loss of wetlands habitat from repair of leaky conveyance systems or alteration of irrigation practices.
- Loss of critical habitat from sediment discharges.
- Pump and treat systems could result in a lower of the groundwater table or an alteration of hydrology by impeding the natural groundwater gradient.
- Pump and treat systems could alter a sites hydrology and adversely affect nearby streams, riparian areas or wetlands.
- Pump and treat systems could result in the alteration of nearby stream hydrology adding to the total flow in the stream.
- Land application of wastewater could result in groundwater quality impacts through the accumulation of organics, salts, or precipitation of naturally occurring metals in soils.
- Reduction in stream flows due to the increase in evapotranspiration from increased riparian tree retention.
- Temporary sediment discharges that exceed water quality objectives from construction and/or restoration activities.
- Excessive use of rip-rap or stream stabilization structures intended to beneficially affect flow could alter conditions downstream.
- Increased risk of soil or groundwater contamination with concentrated minerals, salts, or persistent pesticides.

Most of these potential impacts are expected to be short-term. Individual project-specific CEQA review will be necessary in those cases as appropriate. Many can and will be mitigated to less than significant levels with the implementation of specific mitigation measures. However, because of the programmatic nature of this CEQA analyses, it is not possible to say with certainty that all impacts will be mitigated to less than significant levels. Identified mitigation will become enforceable in permits and other orders by the Regional Water Board, but we cannot be certain that other agencies will adopt the recommended mitigation for activities under the jurisdiction of other agencies. As a result, even impacts identified as less than significant with mitigation incorporated must also be considered unavoidable at this time.

Notwithstanding the potential negative affects discussed above and throughout this Staff Report it is likely that long-term beneficial effects will be realized on aesthetic resources,

biological resources, geology and soils, GHG emissions, hydrology and water quality, and recreation.

Programmatic Statement of Overriding Considerations

Based on a review of the available information, and as a result of implementing the range of foreseeable compliance measures it has been determined that significant and unavoidable impacts to the environment may occur. These impacts include potential conflict with or conversion of prime agricultural land or land subject to the Williamson Act from implementing grazing restrictions, riparian buggers or riparian restoration; municipal, domestic, agricultural and industrial water supply could be impacted by certain restrictions on the extraction of water from riparian areas or areas of known thermal refugia; switching from surface water diversions to groundwater pumping could lower water table, reduce soil moisture, contribute to land subsidence and reduce aquifer storage capability; the increase in groundwater extraction could reduce surface water flows and result in increased pollutant concentration due to less dilution; the removal of surface water impoundments could result in a short term violation of water quality standards as sediments and organic rich waters flow downstream; and regulation on water use could lead to the conversion of agricultural lands.

Most of these impacts are expected to be short term. Individual project-specific CEQA review will be necessary in those cases as appropriate. Many impacts can and will be mitigated to less than significant levels with the implementation of specific mitigation measures. However, because of the programmatic nature of this CEQA analyses, it is not possible to say with certainty that all impacts will be mitigated to less than significant levels. Identified mitigation will become enforceable in permits and other orders by the Regional Water Board, but we cannot be certain that other agencies will adopt the recommended mitigation for activities under the jurisdiction of other agencies. As a result, even impacts identified as less than significant with mitigation incorporated must also be considered unavoidable at this time.

Pursuant to Public Resources Code Section 21081(b) and CEQA Guidelines Section 15093, specific overriding economic, legal, social, technological or other benefits may outweigh the unavoidable adverse environmental impacts. The potential benefits from the chemical constituents and toxicity objectives include improved human health (less risk of adverse impact from raw/untreated sources drinking water), less financial burden on municipal water suppliers and domestic well users on source water treatment. An important objective of the proposed DO amendment is the restoration of a healthy and viable salmonid fishery. Attaining and sustaining compliance with the DO levels that support the cold freshwater habitat beneficial use, the beneficial use most sensitive to DO, is also vital to supporting the socioeconomic background of the region due to the role that cold freshwater streams play in supporting recreational, commercial and subsistence fishing. These benefits are not only supportive of several threatened and endangered species, but also of local economies, communities, and cultures throughout the North Coast. The Regional Water Board finds that the potentially significant, unavoidable environmental impacts could be acceptable in light of the benefits set forth above for the attainment and protection of beneficial uses, and that each of the benefits constitute an overriding benefit warranting approval of the Basin Plan amendment, independent of the other benefits. Of

course, each site-specific activity must be evaluated on a project level to balance the factors in an individual given context.

Monitoring and Reporting

Public Resources Code, section 21081.6 and California Code of Regulations, title 14, section 15097requires a Mitigation Monitoring and Reporting Program (MMRP) to ensure that mitigation measures identified in an EIR or negative declaration are implemented to avoid significant environmental effects. The MMRP must be adaptable according to the context, in this case, water quality objectives with a broad range of implementation programs and actions. As explained in the Staff Report and findings above, projects that might be undertaken as a result of the WQO Update Amendment would be subject to a project-level CEQA review conducted by the Regional Water Board or by another lead agency, which would entail project-specific identification and mitigation of any significant environmental effects. These projects would be subject to a project-specific MMRP. Because many actions may be taken by entities other than the Regional Water Board, it is not possible at this time to ensure the implementation of mitigation measures. The most appropriate reporting mechanism is the existing individual program requirements. Additionally, monitoring the implementation of mitigation measures is most fitting in a lead agency's program of implementation. This includes specific projects both within and outside of the Regional Water Boards authority.