
Chapter 11. Water Resources Element

11.1 Purpose

This Element addresses water planning issues including river and stream water quality, stormwater runoff, groundwater management, water needs of fish and wildlife, water consumption, conservation and re-use methods, and state and federal regulations.

11.2 Relationship to Other Elements

These and other water-related topics can be found throughout the General Plan. Water availability for development is addressed in the Land Use Element. The Conservation and Open Space elements address riparian corridors, wetlands, wildlife protection, fishery resources, other biotic resources, water-oriented recreation, and soil erosion. The Community Infrastructure and Services Element addresses public water and wastewater systems.

11.3 Background

Surface and Groundwater

Large rivers and biologically rich watersheds are defining characteristics of Humboldt County. These resources provide local water supply, spawning habitat for fisheries, recreation opportunities, and local wealth for the fishing and tourism industries. The Eel, Trinity, and Klamath rivers extend well beyond county borders linking Humboldt to the complex regional, state, and interstate water resource and habitat management issues affecting their respective watersheds. The average annual runoff of the rivers running through the county reflects almost 30% of the state's total runoff. Significant sections of these rivers and the Van Duzen River have been designated by the California legislature as wild, scenic, or recreational under the California Wild and Scenic River System. North Coast watersheds retain some of the last viable salmon and steelhead populations in the state and are a focal point for regional, state, federal, and tribal habitat recovery efforts. Managing these water resources will be a significant challenge in the years ahead as competition between statewide water demand, habitat requirements, and local water supply intensifies.

While mean annual runoff in Humboldt County from the major rivers and streams is approximately 23 million acre feet, over 80% of this flow occurs during November through March, and the total potential annual groundwater yield of the entire county is only approximately 100,000 acre feet. Ground water has been developed for individual domestic requirements, the agricultural demands of the Eel and Mad River delta areas, and to provide supplements to municipal water supply. Potential concerns are saltwater intrusion in coastal areas and the effects of groundwater withdrawal on streams that rely on groundwater recharge to sustain flows during the dry season.

State law passed in 2014 (AB 1739) requires counties or other local agencies to develop and implement "groundwater sustainability plans" by 2020 for groundwater basins that have been assigned a priority rating of "high" or "medium" by the State Department of

Water Resources (DWR). The Eel River Valley groundwater basin has been assigned an initial priority of “medium,” requiring a groundwater sustainability plan. The other 13 mapped groundwater basins in the County have been given a “very low” priority, although the groundwater basin boundaries and prioritizations could change in the future based on local habitat considerations, stream flows and improved hydrologic and geologic information.

Groundwater sustainability plans are required to take into account the most recent planning assumptions stated in local general plans of jurisdictions overlying the basin. The Eel River Valley basin underlies coastal and inland portions of the unincorporated area as well as the cities of Ferndale, Fortuna, and Rio Dell. In addition, any substantial amendment to a general plan will be required to consider comments from any agency that manages groundwater, and from the State Water Resources Control Board if it has adopted an interim plan for the planning area.

Water Resources and Land Use

The General Plan can help to sustain and enhance water resources. Through its policies and standards, it is an effective tool to ensure that new development occurs without damaging water resources on an individual and cumulative basis. The Plan also serves to guide the County in its interaction with neighboring counties, state, and federal agencies and lawmakers. It also directs the County’s activities and commitment of resources.

State and federal agencies through the California Water Code and Clean Water Act typically have primary jurisdiction over water resource issues, and in those cases their roles do not have to be duplicated by the County. In the event of overlapping jurisdiction or in instances where the County has interests that are distinct from the interests of state and federal agencies, the County will make independent judgments consistent with the policies of this Plan.

Watershed Planning

Humboldt County is part of the State Water Resources Control Board’s Klamath-North Coast Hydrologic Basin Planning Area 1, which includes all basins draining into the Pacific Ocean from the Oregon border southerly through the Russian River Basin. The County’s 12 planning watersheds (see Table 11-A) are displayed in Figure 11-1. For water resource planning purposes and to improve coordination with state and federal agencies, the County uses watersheds as logical planning areas to consider all the activities in a watershed in relation to their effect on water supply, quality, and biological resources.

North Coast Basin Plan and Beneficial Uses
 California’s comprehensive water quality control law, the Porter-Cologne Water Quality Control Act of 1969, requires the adoption of water quality control plans (basin plans) by the state’s nine Regional Water Quality Control Boards to protect water quality and beneficial uses in watersheds within their regions. Basin plans are reviewed every three years and updated as necessary. The Water Quality Control Plan for the North Coast Region, or the North Coast Basin Plan, covers Humboldt, Del Norte, Trinity, Siskiyou, Mendocino, and portions of several other counties.

An essential part of the Basin Plan is an assessment of the beneficial uses that are designated and are to be protected for each hydrologic area in the region. Beneficial uses include the use of water for public water supplies; protection and propagation of fish, shellfish, and wildlife; recreation in and on the water; agriculture; industrial; and other purposes, including navigation. Beneficial uses can either be existing or potential and are enumerated on a uniform list prepared by the State Water Board and are applied throughout all basins of the state.

Controlling sedimentation, preventing further increases in water temperature, preserving flow rates, and monitoring water quality are the chief watershed management challenges in Humboldt County. As of 2008, Humboldt County has 19 river segments or water bodies that require Total Maximum Daily Load (TMDL) pollution prevention plans because of their “impaired” designation under Section 303(d) of the federal Clean Water Act (see text box for a description of the TMDL rules). Major soil-disturbing activities include road building, logging, vegetation clearing, over-grazing, mining, and certain agricultural practices. Accelerated erosion and sedimentation can increase flooding and damage riparian habitat. Temperature is an important habitat requirement for salmon and steelhead. High water temperatures result from reduced flows, degraded stream channels and removal of riparian vegetation along watercourses.

Watershed	Basin	Total Acres within County	Total Acres
Lower Klamath	Klamath-Trinity	332,787	493,453
Lower Trinity	Klamath-Trinity	192,286	654,967
South Fork Trinity	Klamath-Trinity	73,205	596,497
Redwood Creek	Mad-Redwood	187,788	187,819
Trinidad	Mad-Redwood	83,684	83,684
Mad River	Mad-Redwood	221,337	322,143
Eureka Plain	Mad-Redwood	124,617	124,617
Van Duzen	Eel	234,899	274,083
Lower Eel	Eel	191,052	191,052
Middle Main Eel	Eel	138,509	333,345
South Fork Eel	Eel	200,395	441,213
Cape Mendocino	Mattole	311,774	319,628
Total		2,292,332	4,039,132

Humboldt County’s watersheds typically flow with an abundance of water in the winter and spring but limited water in the summer and fall, making both flooding and low-flow shortages significant water management issues. For example, the Mattole River has a maximum-recorded winter discharge in excess of 90,000 cubic feet per second and a typical summer flow of less than 20 cubic feet per second.

Figure 11.1: Humboldt County Planning Watershed Areas



Humboldt County watersheds are within the National Marine Fisheries' Southern Oregon/Northern California Coast Salmon and Steelhead Recovery Domain and are a part of Five Counties Salmonid Conservation Program (5C's Program). Recovery of Coho and Chinook salmon, and steelhead populations is a priority of numerous governmental agencies, local tribes and private businesses and organizations from forest product companies to local watershed groups. The 5C's Program has implemented programs to replace culverts, reduce soil loss and erosion, and define best management practices for road maintenance. The County has replaced approximately one-third of the significant barriers to fish migration so far.

Total Maximum Daily Load (TMDL)

The federal Clean Water Act (CWA) requires states to develop a list of their impaired waterbodies. Impaired waterbodies are those that do not meet water quality standards even after pollution controls for point sources of pollution are in place, such as wastewater treatment plants and industrial facilities. The CWA also requires states to establish priority rankings for waters on the 303(d) list and develop Total Maximum Daily Loads (TMDLs) for these waters based on their individual priority ranking.

A TMDL is a pollution budget for a specific waterbody (river, stream, lake, etc.) that identifies the maximum amount of a pollutant (sum of allowable pollutant loads from point and nonpoint sources) that can be released without causing the waterbody to become impaired. A TMDL also must include a margin of safety to allow for any uncertainties in the scientific methods used to derive the TMDL (water quality modeling assumptions, etc.)

Humboldt County is also a participating member of the North Coast Integrated Regional Water Management Plan (NCIRWMP). The NCIRWMP covers a seven county area corresponding to the Regional Water Quality Control Board Region 1 boundary. This collaborative planning framework was selected because impacts to fisheries and other beneficial uses may occur from local land use decisions and actions, but the effects can be cumulative across large geographic areas, with effective solutions often requiring a watershed approach and ultimately a regional approach that can be adopted and implemented by many stakeholders. The NCIRWMP provides an organized framework for identifying local and regional issues, evaluating water management planning objectives and strategies, and implementing the most promising approaches and projects across the region. Many polices and principles of the NCIRWMP have been integrated into this Water Resources Element.

Public Water Supply

Municipal water supplies are provided primarily from surface water sources by four water service districts, along with several cities and numerous community service districts.

The Humboldt Bay Municipal Water District provides the majority of drinking water within the County. It supplies treated drinking water to seven municipal agencies, who in turn serve all communities in the greater Humboldt Bay region. The District also delivered large volumes of water to two pulp mills for industrial purposes; however both pulp mills have ceased operation. The District currently has 40 - 45 million gallons per day (MGD) of water available beyond which is needed for its municipal customers. If this water is not used, the District will eventually lose a substantial portion of its water rights which have been granted by the State, and those rights would be available to any other interested party. This additional supply is an asset for the area and could support new agricultural, commercial and industrial development. If such uses do not materialize within Humboldt

County, the District could transport available water to another public agency for an authorized public use, thereby maintaining local control of its water rights, and generating additional revenue for the benefit of its municipal customers and local ratepayers. The District could also allocate a portion of the available water for an instream flow dedication in the Mad River for the purpose of preserving or enhancing habitat or fish and wildlife resources.

Protection of water quality in the watersheds that are sources for municipal water is important to maintaining these supplies. Threats include discharge from sewage treatment plants, failing septic systems, non-point source urban pollution, and turbidity from sediment discharge.

Rural water supplies are provided by private water associations or from on-site surface and groundwater sources. Some rural parcels have been created that cannot support residential usage based on on-site water availability, so availability must be determined on a case-by-case basis. Another concern is the cumulative effects of surface and groundwater withdrawals in rural areas where allowed land uses, if fully developed, would require more water than what is locally available during low-flow periods.

Water storage and water conservation techniques can be solutions to the extremes of water availability. Increased municipal storage in urbanized areas and off-channel water storage in rural areas can increase water security and maintain essential flows for habitat purposes.

Water Exports

The amount of water exported from North Coast watersheds is perhaps the county's most significant water resource policy issue. Diversions of water on the Trinity, Klamath, and Eel rivers have significantly affected water quality, quantity, and beneficial uses within Humboldt County. As a County of origin, the County of Humboldt has certain rights pursuant to state water law. Water Code Section 10505 provides that no water right will be released or assigned for any application that would deprive the County of origin of any water necessary for the development of the County. Section 11460 provides that state water projects must meet standards that protect existing beneficial needs of the watershed. Because of the importance of river flows to the county's economy and environment, the General Plan includes policies that actively pursue reductions in water exports from the Klamath, Trinity and Eel rivers and provide standards for the protection of water quality, fisheries, and habitat for any proposed new water export projects. The Humboldt Bay Municipal Water District is evaluating the feasibility of transferring a portion of its available water from the Mad River using the District's existing water rights and infrastructure to another municipal agency. Such a transfer would not constitute an export in the same manner that other water diversions do. There would be no upstream out-of-basin transfer from one watershed to another. Water available for a transfer would come from the natural discharge of the Mad River and releases from Ruth Lake which flow down the Mad River to the District's existing point-of-diversion at Essex. This option could preserve local control of water rights and bring water revenue into the County.

Stormwater

Communities with County stormwater infrastructure include McKinleyville; the areas surrounding Eureka, including Cutten, Ridgewood, Pine Hill, and Humboldt Hill; and Shelter Cove. Other areas with minor amounts of drainage infrastructure include Redway, Manila, King Salmon, Loleta, Garberville, and Willow Creek.

The State Water Resources Control Board regulates storm water discharges from certain small municipal separate storm sewer systems (MS4s) in accordance with the Phase II storm water program authorized by the federal Clean Water Act. The purpose of the Phase II small MS4 General Permit is to control the discharge of pollutants to storm sewer systems which ultimately drain to natural waterways.

The Phase II Small MS4 General Permit applied to McKinleyville starting in 2006. In February 2013, the State Water Board made significant revisions to the permit requirements and expanded the coverage areas to include the unincorporated Eureka area and Shelter Cove. The revised Phase II Small MS4 General Permit requires a variety of program elements which are phased in over the five-year term of the permit. Compliance dates range from June 30, 2014, to June 30, 2018.

In addition to controlling storm water runoff from construction sites, the County will need to develop a new "post-construction" storm water management program to ensure compliance with source control measures, low impact development (LID) design standards, and hydromodification standards specified in the Phase II Small MS4 General Permit. Other requirements include illicit discharge detection and elimination; water quality monitoring; pollution prevention at County operations; public education and outreach; and program effectiveness evaluation.

Public Works will continue to administer the County's overall implementation efforts for compliance with the Phase II Small MS4 General Permit. The construction site storm water runoff program and post-construction storm water management program will be implemented in conjunction with the Building and Planning Department. New requirements will be adopted by ordinance.

11.4 Goals and Policies

Goals

- WR-G1. Water Supply, Quality, and Beneficial Uses.** High quality and abundant surface and groundwater water resources that satisfy the water quality objectives and beneficial uses identified in the Water Quality Control Basin Plan for the North Coast Region.
- WR-G2. Water Resource Habitat.** River and stream habitat supporting the recovery and continued viability of wild, native salmonid and other abundant coldwater fish populations supporting a thriving commercial, sport and tribal fishery.
- WR-G3. Planning, Coordination, and Advocacy.** A system of local coordination and intra-regional cooperation to advance local, regional, and state water management priorities and objectives.

- WR-G4. Watershed Planning Framework.** Land use decision making that makes use of watersheds as a planning, management, and coordinating framework to cooperatively manage water and natural resources with local communities, neighboring counties, and state and federal agencies.
- WR-G5. Watershed Management.** A system of water resource management that recognizes watersheds as natural systems producing multiple economic, social, and environmental benefits that can be sustained in perpetuity and optimized with education, sound data, cooperative public processes, adaptive management, and science based leadership.
- WR-G6. Public Water Supply.** Public water systems able to provide adequate water supply to meet existing and long-term community needs in a manner that protects other beneficial uses and the natural environment.
- WR-G7. Effective Conservation Strategies.** Effective application of conservation, water re-use, and low impact storage strategies such as rainwater catchment in meeting year-round water supply needs.
- WR-G8. Restoration of Impacted River Flows.** Restoration of water flow regimes in the Trinity, Klamath, Eel, and other river systems impacted by out of basin water diversions to meet all beneficial uses, including salmon and steelhead recovery plans, recreational activities, and the economic needs of river dependent communities with no additional watershed exports from rivers flowing through the County that are detrimental to beneficial uses.
- WR-G9. Restored Water Quality and Watersheds.** All water bodies de-listed and watersheds restored, providing high quality habitat and a full range of beneficial uses and ecosystem services.
- WR-G10. Storm Drainage.** Storm drainage utilizing onsite infiltration and natural drainage channels and watercourses, while minimizing erosion, peak runoff, and interference with surface and groundwater flows and storm water pollution.
- WR-G11. Wastewater Management.** Individual wastewater systems that do not contaminate surface and ground water.

Policies

Water Resources and Land Use

- WR-P1. Sustainable Management.** Ensure that land use decisions conserve, enhance, and manage water resources on a sustainable basis to assure sufficient clean water for beneficial uses and future generations.
- WR-P2. Protection for Surface and Groundwater Uses.** Impacts on Basin Plan beneficial water uses shall be considered and mitigated during discretionary review of land use permits that are not served by municipal water supplies.

- WR-P3. Proactive Protections.** Focus regulatory attention and educational efforts in specified watersheds where limited water supply or threats to water quality have potentially significant cumulative effects on the availability of water for municipal or residential water uses or the aquatic environment.
- WR-P4. Critical Municipal Water Supply Areas.** The Board of Supervisors shall designate all or portions of watersheds as "Critical Water Supply Areas" if cumulative impacts from land uses within the area have the potential to significantly impact the quality or quantity of municipal water supplies. Water resources within Critical Water Supply Areas shall be protected by the application of specific standards for such areas.
- WR-P5. Critical Watershed Areas.** The Board of Supervisors shall designate all or portions of watersheds as "Critical Watersheds" if cumulative impacts from existing or planned land and water resource uses within the area have the potential to create significant environmental impacts to threatened or endangered species; including Chinook salmon, coho salmon or steelhead. Land and water resources within Critical Watersheds shall be protected by the application of specific standards for such areas to avoid the take of threatened or endangered species.
- WR-P6. Subdivision Water Supply.** Any subdivision of land shall be conditioned to require evidence of sufficient water supply during normal and drought conditions to meet the projected demand associated with the proposed subdivision. Sufficient water supply shall include the requirements of the proposed subdivision and existing and planned future uses. Written service letters from a public water system written in conformance with this policy is sufficient evidence. Subdivisions to be served through on-site water supplies or private water systems must provide evidence of sufficient water supply to the County Department of Environmental Health.
- WR-P7. Funding.** Coordinate with local, state and federal agencies, and conservation and watershed restoration related organizations, to identify and obtain sources of funding for water quality enhancement, fish passage projects, stormwater pollution management, and water conservation efforts.
- WR-P8. Requirements for Water Storage in Flow Impaired Watersheds.** New development not served by a public water system that seeks to rely upon surface water shall install water storage capable of providing 100 percent of the necessary water storage volume for the summer low-flow season (e.g. July-August-September). A forbearance agreement prohibiting water withdrawals during low-flow season shall be included as a performance standard for the project.
- WR-P9. Mitigate Controllable Sediment Discharge Sites** Proposed development applications involving a site identified as part of the TMDL Controllable Sediment Discharge Inventory shall be conditioned to reduce sediment discharge.

- WR-P10. Erosion and Sediment Discharge.** Ministerial and discretionary projects requiring a grading permit shall comply with performance standards adopted by ordinance and/or conditioned to minimize erosion and discharge of sediments into surface runoff, drainage systems, and water bodies consistent with best management practices, adopted Total Maximum Daily Loads (TMDLs), and non-point source regulatory standards.
- WR-P11. County Facilities Management.** Design, construct, and maintain County buildings, roads, bridges, drainages, and other facilities to minimize erosion and the volume of sediment in stormwater flows.
- WR-P12. Project Design.** Development should be designed to compliment and not detract from the function of rivers, streams, ponds, wetlands, and their setback areas.
- WR-P13. Small and Micro Hydroelectric.** Encourage small and micro hydroelectric development when impacts to surface water flows, aquatic species, and habitat have been adequately mitigated and are in conformance with state and federal permits and standards.
- WR-P14. Groundwater Quality Protection.** Commercial and industrial discretionary uses shall be evaluated for their potential to contaminate groundwater resources, and mitigated as necessary.
- WR-P15. Saltwater Intrusion.** Discretionary projects involving groundwater withdrawals in proximity to coastal areas with a potential to create saltwater intrusion shall demonstrate that groundwater supplies will not be adversely affected by saltwater intrusion.
- WR-P16. Pathogen and Nutrient Discharge from Septic Systems.** Support programs that reduce coliform bacteria and nitrate discharges from septic systems.
- WR-P17. Nutrient Discharge from Agricultural Operations.** Support programs that reduce nutrient discharge from agricultural operations, such as the voluntary manure management programs used by local dairies.
- WR-P18. State and Federal Regulation.** Encourage state and federal agencies to maintain responsibility for water resources supply and water quality management. The County shall not accept administrative responsibility for state or federal regulatory programs unless sustainable funding sources are secured.
- WR-P19. Alternative Disposal Systems.** Support programs and ordinance revisions that modify the permit process for alternative disposal systems to make such systems more accessible to individual households under conditions that do not threaten the public health.
- WR-P20. Rain Catchment Systems.** Encourage the installation of rain catchment systems to support domestic and outdoor water needs during low-flow summer months.

- WR-P21. Enhance Groundwater Recharge Capacity.** Encourage watershed management practices that enhance infiltration of rainfall into the groundwater.

Watershed Planning

- WR-P22. Watershed Planning.** Use watersheds as the geographic planning framework for water resource planning and coordination with other regional, state, and federal planning, implementation, and funding efforts. Maintain relevant land use data on watershed basis to support watershed based management and decision-making processes. Encourage and support continued research, investigation, and analysis of the County's water resources by federal and state water resource agencies, and local watershed restoration groups. Encourage compilation of data, such as the State Water Resources Control Board's water allocation data, the National Marine Fisheries Services and Department of Fish and Wildlife coho recovery plans, on a watershed basis.
- WR-P23. Watershed and Community Based Efforts.** Support the efforts of local community watershed groups to protect, restore, and monitor water resources and work with local groups to ensure decisions and programs take into account local priorities and needs.
- WR-P24. Regional Water Management Planning.** Work on a regional basis through the North Coast Resource Partnership (NCRP) to ensure coordination and adaptive management between statewide water resource planning efforts, regional priorities, and local needs. The goals and objectives identified in the North Coast Integrated Regional Water Management Plan shall be considered in establishing County water resource priorities and policy positions.
- WR-P25. State and Federal Watershed Initiatives.** Support implementation of state and federal watershed initiatives such as the Total Maximum Daily Loads (TMDLs), the North Coast Regional Water Quality Control Board's (NCRWQCB) Watershed Management Initiative, the National Marine Fisheries Services and Department of Fish and Game coho recovery plans and the California Non-Point Source Program Plan.

Public Water Supply

- WR-P26. Sufficient Water Supply.** Support the actions and facilities needed by public water systems to supply the water demands projected in this Plan.
- WR-P27. Critical Water Supply Areas.** Coordinate with public water systems in the designation and regulation of water resources in Critical Water Supply areas.

WR-P28. Conservation and Re-use Strategy. Promote the use of water conservation and re-use as a strategy to lower the cost, minimize energy consumption, and maximize the overall efficiency and capacity of public and private water systems. Encourage the installation of water storage, rain catchment and graywater systems to support domestic and outdoor water needs. Encourage and support conservation for agricultural activities that increase the efficiency of water use for crop irrigation and livestock. Support the use of treated water for irrigation, landscaping, parks, public facilities, and other appropriate uses and coordinate with cities and other wastewater treatment entities in planning uses and minimizing impacts for treated water in unincorporated areas. Avoid water reuse that could adversely affect the quality of groundwater or surface water.

Water Exports

- WR-P29. Restoration of Flow Rates.** The County shall advocate for reductions in water exports and improved flow release from existing reservoirs on the Trinity, Klamath and Eel rivers to restore and enhance fisheries, natural sediment transport, water quality, recreational opportunities, and other beneficial uses as identified in the Basin Plan.
- WR-P30. New Water Diversion Projects.** Review and make recommendations on significant new water diversion projects to ensure that they do not reduce the replenishment rate of in-stream gravel, taking into account the impact the projects would have on local mineral supplies in Humboldt County.
- WR-P31. Impact Analysis.** All new export proposals and renewal of licenses for existing water exports shall include a full assessment of impacts on the environment, economy, and water supply needs of the county.
- WR-P32. County Needs.** Any consideration of exporting additional water resources shall place primary priority upon the benefit of and need for the water resources in the county and shall ensure that water needed by water users and natural resources will not be exported outside the county.
- WR-P33. Public Trust Resources and Interests.** The County shall advocate that dam relicensing projects redress the historical over-emphasis on development values (electric power, flood control, and water supply) at the expense of non-developmental values (environmental resource protection, habitat restoration, and water quality).
- WR-P34. Public Input.** The County shall advocate for the relicensing applicant to sponsor a participatory process involving all affected stakeholders prior to the submittal of a final relicensing application to the Federal Energy Regulatory Commission.

Stormwater Drainage

- WR-P35. Implementation of NPDES Permit.** Implement and comply with the National Pollutant Discharge Elimination Systems (NPDES) Permit issued by the State Water Resources Control Board to the designated portions of the County.

- WR-P36. Natural Stormwater Drainage Courses.** Natural drainage courses, including ephemeral streams, shall be retained and protected from development impacts which would alter the natural drainage courses, increase erosion or sedimentation, or have a significant adverse effect on flow rates or water quality. Natural vegetation within riparian and wetland protection zones shall be maintained to preserve natural drainage characteristics consistent with the Biological Resource policies. Stormwater discharges from outfalls, culverts, gutters, and other drainage control facilities that discharge into natural drainage courses shall be dissipated so that they make no significant contribution to additional erosion and, where feasible, are filtered and cleaned of pollutants.
- WR-P37. Downstream Stormwater Peak Flows.** Peak downstream stormwater discharge shall not exceed the capacity limits of off-site drainage systems or cause downstream erosion, flooding, habitat destruction, or impacts to wetlands and riparian areas. New development shall demonstrate that post-development peak flow discharges will mimic natural flows to watercourses and avoid impacts to Beneficial Uses of Water.
- WR-P38. New Drainage Facilities.** Where it is necessary to develop additional drainage facilities, they shall be designed to be as natural in appearance and function as is feasible. All drainage facilities shall be designed to maintain maximum natural habitat of streams and their streamside management areas and buffers. Detention/retention facilities shall be managed in such a manner as to avoid reducing streamflows during critical low-flow periods.
- WR-P39. Restoration Projects.** The County shall encourage restoration projects aimed at reducing erosion and improving habitat values in Streamside Management Areas and wetlands.
- WR-P40. Commercial and Industrial Activities.** Commercial and industrial activities shall minimize, and eliminate to the extent feasible, facility-related discharges to the stormwater system. As required by state codes and local ordinances, commercial and industrial stormwater discharge must be routed to a wastewater collection system; for example, minimizing runoff from vehicle maintenance yards, car washes, restaurants cleaning grease, contaminated mats/carts into storm drains, and other wash practices that result in materials other than plain water entering the storm drain system.
- WR-P41. Oil/Water Separation.** Parking lot storm drainage shall include facilities to separate oils from stormwater in accordance with Public Works requirements and the recommendations of the Stormwater Quality Association's California Stormwater Best Management Practices Handbooks or their equivalent.
- WR-P42. Erosion and Sediment Control Measures.** Incorporate appropriate erosion and sediment control measures into development design and improvements.

- WR-P43. Storm Drainage Design Standards.** Drainage design standards for new development shall be adopted by ordinance. The design standards shall ensure that storms of specified intensity, frequency, and duration can be accommodated by engineered drainage systems and natural drainage courses.
- WR-P44. Storm Drainage Impact Reduction.** Develop and require the use of Low-Impact Development (LID) standards consistent with Regional Water Board requirements to reduce the quantity and increase the quality of stormwater runoff from new development and redevelopment projects in areas within the County's MS4 boundary or as triggered under other Regional Water Board permits. For all other watersheds, develop storm drainage development guidelines with incentives to encourage LID standards to reduce the quantity and increase the quality of stormwater runoff from new developments.
- WR-P45. Reduce Toxic Runoff.** Minimize chemical pollutants in stormwater runoff such as pesticides, fertilizers, household hazardous wastes, and road oil by supporting education programs, household hazardous waste and used oil collection, street and parking lot cleaning and maintenance, use of bio-swales and other stormwater best management practices described in the California Stormwater Best Management Practices Handbooks or their equivalent.
- WR-P46. Fish Passage Designs.** Work with federal and state agencies and local watershed restoration groups to retrofit existing drainage and flood control structures and design new structures to facilitate fish and other wildlife passage in partnership with federal and state agencies.

11.5 Standards

Water Resources and Land Use

- WR-S1. Designation of Critical Water Supply and Watershed Areas.** The designation by the Board of Supervisors of Critical Water Supply and Watershed Areas shall be a public process, involving a recommendation from the Planning Commission and input from the public, affected water providers, and state and federal agencies.
- WR-S2. Development within Critical Water Supply Areas.** Ministerial land use development proposed within Critical Water Supply areas shall comply with performance standards adopted by ordinance. Discretionary development within the Critical Water Supply Areas shall comply with performance standards and supplemental permit conditions. Standards and permit conditions shall require: 1) demonstrating that risk of contamination to the water supply as a result of the development activity is minimized by providing mitigation to avoid significant adverse effects; and 2) avoiding degradation of municipal water supplies by reducing cumulative impacts to surface water quality and water quantity during low-flow periods to below levels of significance.

- WR-S3. Development within Critical Watershed Areas.** Ministerial land use development proposed within Critical Watershed Areas shall comply with performance standards adopted by ordinance. Discretionary development shall comply with performance standards and supplemental permit conditions. Standards and permit conditions shall avoid take of endangered or threatened species by reducing cumulative impacts to aquatic habitat to below levels of significance.
- WR-S4. Water Withdrawal Permitting.** Ministerial and discretionary permits for land use development that include development of new in-stream water sources or other streambed alterations subject to California Fish and Game Code Section 1602 shall provide evidence of, or be conditioned to obtain a Streambed Alteration Agreement from the Department of Fish and Game as well as a Water Right Permit or a small scale domestic use registration from the State Water Board.
- WR-S5. Subdivisions Demonstration of Sufficient Water Supply.** Demonstration of sufficient water supply shall include the requirements of the proposed subdivision, existing uses, and planned future uses. Subdivisions for residential development subject to state requirements of SB 610 and SB221 shall make the appropriate demonstrations consistent with regulations (as amended) established by these acts. Written service letters from a public water system written in conformance with this policy is sufficient evidence. Subdivisions to be served through on-site water supplies or private water systems must provide evidence of sufficient water supply to the County Department of Environmental Health.
- WR-S6. Total Maximum Daily Loads (TMDLs) Implementation.** Discretionary development within watersheds containing impaired water bodies as defined under Section 303(d) of the federal Clean Water Act and governed by TMDL implementation plans shall be conditioned to reduce or prevent further impairment consistent with applicable TMDLs.
- WR-S7. Erosion and Sediment Discharge.** Ministerial and discretionary projects shall conform to grading ordinance standards for erosion and sediment control.
- WR-S8. County Facilities Management.** The design, construction, and maintenance of County roads, bridges, drainages, and other facilities shall minimize stormwater runoff erosion and discharge of sediments and other pollution by following best management practices in accordance with the Five County Water Quality and Stream Habitat Protection Manual for County Road Maintenance in Northwestern California Watersheds (5C's Manual) or its equivalent.
- WR-S9. Projects in Proximity to Wild and Scenic Rivers.** Projects located within state designated wild, scenic, or recreational river basins shall be consistent with the guidelines in the State Wild and Scenic Rivers Act as amended.
- WR-S10. Micro Hydroelectric.** Development of run-of-the-river micro hydroelectric projects on privately owned lands are considered accessory to allowed uses if they are sized to meet the electrical demands of the subject property only and designed to avoid impacts to streamflow and fisheries.

Water Exports

- WR-S11. Water Export Projects on Humboldt County Rivers.** The Humboldt County Board of Supervisors will require the following information to demonstrate the export project's adherence to the requirements of California Water Code Section 10505 protecting development rights and Section 11460 protecting beneficial needs of the watersheds. The analysis of the export project shall include:
- A. Effects on in-stream flows including flood events.
 - B. Assessment of the environmental impact of the proposed project using appropriate ecological studies by a team of independent experts, qualified to conduct such studies, funded by the project sponsor and completed before project authorization.
 - C. Effects on fisheries and native wildlife habitat and restoration efforts. Analysis of the sustainability of any proposed fisheries and wildlife habitat mitigations.
 - D. Impacts to Native American communities, including cultural and archaeological resources, economies, fisheries, and water supplies.
 - E. Water supplies necessary to meet the ultimate future development needs of residential, agricultural, municipal, industrial, and recreational users and to promote environmental protection and fisheries habitat restoration.
 - F. Cost and benefits to recreation.
 - G. Water quality impacts and provisions for enhancement of any impaired water bodies (Section 303(d) of the federal Clean Water Act).
 - H. Property tax and other fiscal or economic losses to local entities.
 - I. Public infrastructure and service demands and costs including roads and recreation facilities.
 - J. Public cost and benefits on statewide, regional, county, and local scales including the monetized value of impacted ecological services.
- WR-S12. Minimizing Effects of Water Exports.** The County shall prevent water exports from damaging the county's environmental and economic setting by ensuring that "no unreasonable effect" occurs in the transfer and withdrawal of water resources pursuant to Section 1810 of the State Water Code. County standards for defining "no unreasonable effect" include actions that will not:
- A. Contribute to a decline in, or interfere with the recovery of, the population of any sensitive or protected plant, fish, or wildlife species.
 - B. Reduce water levels in any existing public or private groundwater wells to levels that preclude withdrawal by existing users or would substantially increase the costs or such withdrawal.
 - C. Contribute to any impacts on water quality that reduces water quality below health standards or federal or state water quality standards.

- D. Contribute to effects on water quality that would result in a deficiency by the water treatment agency's ability to treat water to appropriate standards.
- E. Reduce available groundwater or surface water resources to levels that would make access and/or use of these waters uneconomical for development planned in accordance with this General Plan.
- F. Directly or indirectly discharge contaminants into surface or groundwater resources.

Stormwater Drainage

- WR-S13. Storm Water Management.** All commercial, industrial, multi-family, quasi-public, and public parking facilities shall, whenever possible, provide stormwater treatment for parking lot runoff using bio-retention areas, filter strips, and/or other practices that be integrated into required landscaping areas and traffic islands. In all other cases, oil/water separators shall be required. A maintenance plan for oil/water separators shall be required. During construction, the following erosion and sediment control measures shall be incorporated into development design and improvements:
- A. Minimize soil exposure during the rainy season by proper timing of grading and construction;
 - B. Retain natural vegetation where feasible;
 - C. Vegetate and mulch denuded areas to protect them from winter rains;
 - D. Divert runoff from steep denuded slopes and critical areas with barriers or ditches;
 - E. Minimize length and steepness of slopes by benching, terracing, or constructing diversion structures;
 - F. Trap sediment-laden runoff in basins to allow soil particles to settle out before flows are released to receiving waters; and
 - G. Inspect sites prior to significant rain events to ensure control measures are working properly and correct problems as needed.

11.6 Implementation Measures

Water Resources and Land Use

- WR-IM1. Critical Water Supply and Watershed Area Ordinance.** Prepare and adopt an ordinance to implement Critical Water Supply and Watershed Area policies.
- WR-IM2. Critical Water Supply and Watershed Area Designation.** Identify and designate Critical Water Supply and Watershed Areas through a zoning overlay process using best available scientific data, consultation with municipal water suppliers and resource agencies, and public outreach and input.

- WR-IM3. Require Restoration of Degraded Areas.** Require replanting of vegetation and remediation of erosion conditions in conjunction with related discretionary land use approvals, especially those including roads and grading on steep slopes.
- WR-IM4. County Facilities.** The Department of Public Works shall manage and conduct internal reviews of County construction and maintenance activities to ensure conformance with adopted best management practices for erosion and sediment control.
- WR-IM5. Septic Systems.** Actively pursue the abatement of failing septic systems that have been demonstrated to represent a health and safety hazard.
- WR-IM6. Permitting Coordination.** The County shall maintain efficient and timely procedures for project referral to the North Coast Regional Water Quality Control Board for review and consultation.
- WR-IM7. Basin Plan Septic Requirements.** Update and amend existing County septic regulations to reflect the latest Basin Plan standards for design and maintenance of on-site wastewater systems.
- WR-IM8. Graywater Re-use Standards.** Update and amend the existing County Code to implement the revisions to the State California Plumbing Code, Title 24, Part 5, Chapter 16A regarding Graywater Standards, as reflected in SB1258.
- WR-IM9. Update Water Quality Regulations.** Amend the Grading, Excavation, Erosion, and Sedimentation Control Regulations and Division 1, Planning Zoning Regulations Chapter 6 - General Provisions and Exceptions Section 314-61.1 Streamside Management Area Ordinance to reflect the new erosion, sediment control, vegetation, restoration, and stormwater drainage policies and standards contained in the Water Resources Element, and the Biological Resources Chapter of the Conservation and Open Space Elements and evaluate as part of the five-year Housing Element Update to determine if additional measures are needed to protect water quality.
- WR-IM10. Unpermitted Development Ordinance for Critical Watersheds.** Prepare an ordinance to provide enforcement capabilities for un-permitted development within critical watershed areas if the development impacts water resources. Work with the State Departments of Water Resources and California Department of Fish and Wildlife to address illegal water diversions and over-subscribed water right allocations.
- WR-IM11. Water Supply Evaluation and Monitoring.** Within five years after the adoption of the General Plan Update the County shall prepare a watershed analysis to determine whether the long term surface and groundwater supply is available, including seasonal, average, dry year, and multiple dry year supplies, and preservation of existing beneficial uses of water. The study shall determine an estimate of the quantity of water available for the level of future development described in the Revised Draft EIR for the GPU. Work with water and wastewater related special districts, regulators, and other appropriate organizations to monitor watershed conditions.

Watershed Planning

- WR-IM12. Watershed Planning.** The County shall maintain relevant land use data on a watershed basis to support watershed based management and decision-making processes.
- WR-IM13. North Coast Integrated Regional Water Management Planning.** The County shall participate in the continued update and implementation of the North Coast Integrated Regional Water Management Plan.
- WR-IM14. TMDL Controllable Sediment Discharge Inventory and Reduction Program.** Map impaired water bodies as defined under Section 303(d) of the federal Clean Water Act with associated impairment parameters, water quality objectives, and pollution budgets contained in TMDL implementation plans. Seek funding to identify controllable sediment discharge sites and establish a program to prioritize, treat, monitor, and subsequently reevaluate such sites.
- WR-IM15. Watershed Data.** Seek and secure funding to evaluate the quality and quantity of water resources in each of the watershed basins. Support studies that correlate the quality and quantity of water captured, stored, and contained within watersheds to the needs of beneficial water uses by residents, local industry, agriculture, and the natural environment. Identify and map important groundwater recharge areas.
- WR-IM16. Sustainable Groundwater Plans.** Support the development of Sustainable Groundwater Plans consistent with California Water Code.
- WR-IM17. Water Planning and Coordination.** Actively encourage and participate in local and state water resource planning efforts that have the potential to achieve Water Resource Element goals.
- WR-IM18. Watershed Planning with Public Land Managers.** Participate in the planning activities of federal and state land management agencies to advocate for watershed-based planning and management approaches and policies and projects that are consistent with Water Resource Element policies.
- WR-IM19. Coordinate and Support Watershed Efforts.** Seek funding and work with land and water management agencies, community-based watershed restoration groups, and private property owners to implement programs for maintaining and improving watershed conditions that contribute to improved water quality and supply.
- WR-IM20. Basin Plan.** Work cooperatively with the North Coast Regional Water Quality Control Board and other interested parties in the update and implementation of Basin Plan policies and programs.
- WR-IM21. Water Resources Funding.** Work with public water suppliers, utility districts, stakeholder groups, and interested parties to seek and secure outside funding sources to implement this Element.

WR-IM22. Facility Construction. Coordinate with public water suppliers in the planning, development, and construction of the storage and transmission facilities needed to supply water pursuant to this Plan's policies, urban water management plans, water supply agreements, municipal service reviews, and programs to mitigate identified water quantity conditions, where applicable.

Public Water Supply

WR-IM23. Water Facilities Consistency with the General Plan. Pursuant to the requirements of California Government Code, Sections 65400-65402, require public water suppliers—including cities, county-dependent districts, special districts, and other local public agencies—to consult with the County prior to acquiring a site or developing any well or facilities for public water supplies in the unincorporated area, by requesting a determination of the proposal's consistency with the General Plan.

WR-IM24. Technical Assistance Water Supply and Quality. Assist public water suppliers in the assessment of available water supplies and protection of water quality.

WR-IM25. Long-term Water Supply Planning. Work with Humboldt Bay Municipal Water District and other public water suppliers in the development and implementation of long-term plans for water supply, storage, and delivery necessary to first meet existing water demands and, secondly, to meet planned growth within the designated service areas, consistent with the sustainable yield of water resources.

WR-IM26. Promoting Water Conservation and Re-use. Encourage water conservation and re-use practices by providing information resources for permit applicants on:

- A. Water-conserving design and equipment in new construction.
- B. Water conserving landscaping and other land management practices.
- C. Water conserving retrofit options for existing buildings.
- D. Residential water re-use options including graywater systems.
- E. Off-stream water storage systems including tanks and ponds. ()

WR-IM27. Urban Water Management Plans. Review and comment on Urban Water Management plans (California Water Code Sections 10610–10656) prepared by urban water suppliers.

Importing and Exporting

WR-P28. Restoration of Flow Rates. The County shall actively participate in decision-making processes that affect water flows in the Trinity, Klamath, Eel, Mad and Van Duzen rivers to advocate for the goals and policies of this Plan.

Storm Drainage

- WR-IM29. Drainage Ordinance.** The County shall develop and maintain an ordinance that regulates stormwater drainage consistent with the policies and standards of the Element.
- WR-IM30. Low Impact Development Methods.** Require projects to utilize best management practices for Low Impact Development to meet surface water run-off standards.
- WR-IM31. Nutrient Discharge from Agricultural Operations.** Seek funding and support voluntary manure management programs.
- WR-IM32. Continue to Implement Water Quality Regulations.** Continue to implement Division 3, Building Regulations, Section 331-12, Grading, Excavation, Erosion, and Sedimentation Control Regulations, and Division 1, Planning Zoning Regulations Chapter 6 - General Provisions and Exceptions Section 314-61.1 Streamside Management Area Ordinance.

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