

10.0 Hydrology and Water Quality

This section of the EIR assesses hydrology and water quality conditions within the project site and identifies potential impacts of the project associated with flood hazards and water quality degradation.

Information in this section is derived from a variety of sources including:

- *Humboldt County General Plan for the Areas Outside the Coastal Zone* (Humboldt County 2017b);
- *Community of McKinleyville Storm Water Management Program* (Humboldt County 2005);
and
- Humboldt County Code (Humboldt County Code 2024c).

10.1 Environmental Setting

The project site is comprised of developed and undeveloped land. Existing on-site development includes commercial uses, residential uses, a park, and the McKinleyville Fire Station. Refer back to [Figure 3-2, Existing Conditions](#), which shows existing land use conditions. The site is relatively flat, ranging in elevation from approximately 120 feet to approximately 140 feet. The site is not located within a Federal Emergency Management Agency Special Flood Hazard Area (FEMA 2024).

10.2 Regulatory Setting

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 established the State Water Quality Control Board and the nine Regional Water Quality Control Boards. The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB) are responsible for assuring implementation and compliance with the provisions of the Clean Water Act and the Porter-Cologne Water Quality Control Act. The regional boards set water quality standards, issue waste discharge requirements, determine compliance with those

requirements, and take enforcement action. The RWQCBs also administer the National Pollutant Discharge Elimination System (NPDES) permit program for storm water and construction site runoff as described below.

Regional

North Coast Regional Water Quality Control Board

Water quality within Humboldt County is controlled through the North Coast Regional Water Quality Control Board (“regional board”). Storm water discharges in California are regulated through federal NPDES permits of which there are three types: construction, industrial, and municipal permits. For the purpose of this EIR, the municipal program is applicable because McKinleyville falls under the Phase II Permit Program, which applies to municipalities with less than 100,000 people (Humboldt County Public Works 2014).

The Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). Pursuant to the Federal Water Pollution Control Act (Clean Water Act) section 402(p), storm water permits are required for discharges from an MS4 serving a population of 100,000 or more. The Municipal Storm Water Program manages the Phase I Permit Program (serving municipalities over 100,000 people), the Phase II Permit Program (for municipalities less than 100,000), and the Statewide Storm Water Permit for the State of California Department of Transportation. The State Water Resources Control Board and Regional Water Quality Control Boards (in this case, the regional board) implement and enforce the Municipal Storm Water Program. McKinleyville is responsible for implementing the requirements of State Water Board Order No. 2013-0001 DWQ to minimize stormwater drainage to the Mad River, a sensitive waterbody that is on the Clean Water Act Section 303(d) list (EPA 2024).

The Phase II Permit Program (“Phase II Permit”) mandates that certain development projects comply with post-construction stormwater requirements based on low impact development standards. These standards came into effect on July 1, 2015, and are intended to accommodate a site’s pre-development precipitation runoff by incorporating design techniques that capture, treat, and infiltrate stormwater onsite. There are two development project size classes under the Phase II Permit: projects creating and/or replacing 2,500 to 5,000 square feet of impervious surfaces (“small projects”) and projects creating and/or replacing 5,000 square feet or more of impervious surface (“regulated projects”). Small projects are required to implement at least one site design measure to reduce project site runoff while the regulated projects are required to implement site design measures based on more detailed procedures and are required to demonstrate compliance with runoff reduction thresholds. Some projects may be required to construct bioretention facilities to promote infiltration of stormwater while other projects in the larger size category will need to employ source control measures to minimize the contact between pollutants and stormwater runoff (Humboldt County 2024b).

Water Quality Control Plan for the North Coast Region

The *Water Quality Control Plan for the North Coast Region June 2018* (“Basin Plan”) is the RWQCB’s master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the state, including surface waters and groundwater. The Basin Plan is the basis for the regional water board’s regulatory programs. The regional board implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality. These requirements can be either State Waste Discharge Requirements for discharges to land, or federally delegated NPDES permits for discharges to surface water. When such discharges are managed so that: 1) they meet these requirements; 2) water quality objectives are met; and, 3) beneficial uses are protected, water quality is controlled.

Local

McKinleyville Storm Water Management Program

The *Community of McKinleyville Storm Water Management Program* was prepared in 2005 by Humboldt County in response to State Water Resources Control Board Water Quality Order 2003-0005-DWQ for Phase II of the NPDES. The goal of this document is to protect water quality from the impacts of storm water runoff through compliance with Phase II NPDES Permit requirements and applicable regulations.

Humboldt County General Plan

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-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-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-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.

McKinleyville Community Plan

3310 Policies:

1. Natural drainage courses, including ephemeral streams, shall be retained and protected from development which would impede the natural drainage pattern, increase erosion or sedimentation, or have a significant adverse effect on water quality or wildlife habitat.

5. Development shall only be allowed in such a manner that downstream peak flows will not be increased.

6. 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.

11. Commercial and industrial activities shall minimize, and eliminate to the extent possible, facility related discharges to the storm water system. As required by state codes and local ordinances, commercial and industrial stormwater discharge must be routed to a wastewater collection system. For example, minimization of runoff from vehicle maintenance yards, car washes, restaurants cleaning grease contaminated mats/carts into storm drains, other wash practices which results in materials other than plain water entering the storm drain system.

12. 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;

- G. Inspect sites frequently to ensure control measures are working properly and correct problems as needed; and
- H. Allowance for the construction of public roads, trails, and utilities, when properly mitigated.

Humboldt County Municipal Code

Chapter 8.1, Drainage Facility Improvements and Drainage Fees in the McKinleyville Drainage Area

This chapter discusses the minimum requirements of and drainage fees for planned storm drain facilities in the McKinleyville area. This ordinance calls for minimizing direct surface runoff from site development and minimizing or eliminating flooding.

10.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of hydrology and water quality, as it does on a whole series of additional environmental topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of hydrology and water quality, or on any subject addressed in the checklist. Rather, with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The County has done so here. Therefore, for purposes of this EIR, a significant impact would occur if implementation of the proposed project would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - Substantially increase the rate or amount of surface runoff in a manner which that result in flooding on- or off-site; or
 - Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Conflict with or obstruct implementation of a water quality control plan.

Thresholds of Significance Questions Deemed Not Applicable

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.

The project site is not located within any flood hazard zone (FEMA 2024). Therefore, the project would have no impact associated with its potential to impede or redirect flood flows. No further analysis is required.

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

The project site does not contain any flood hazard zones (FEMA 2024) and according to the Humboldt County Web GIS, the project site is not located within a tsunami hazard area (Humboldt County 2024a). Additionally, there are no large bodies of enclosed/partially enclosed water nearby; therefore, the site is not within a seiche zone. No further analysis is required.

- Conflict with or obstruct implementation of a water quality control plan.

The Basin Plan describes how the quality of surface water and groundwater in the North Coast Region should be managed to provide the highest water quality reasonably possible. The North Coast Regional Water Quality Control Board implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality. These requirements can be either State Waste Discharge Requirements for discharges to land, or federally delegated NPDES permits for discharges to surface water. As has been described above, future development associated with the proposed project would be regulated to protect water quality through NPDES permit conformance.

Future improvements within the project boundary must be designed consistent with regulations (waste discharge requirements and NPDES requirements) promulgated by the North Coast Regional Water Quality Control Board to protect water quality consistent with the goals of the Basin Plan. Therefore, the proposed project would not conflict with or obstruct implementation of the water quality control plan.

Thresholds of Significance Questions Addressed in other EIR Sections

A significant would occur if implementation of the proposed project would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site.

This topic is addressed in Section 16.0, Effects Found to be Less than Significant, under subsection 16.3, Geology and Soils. New development within the project site would be required to conform with uniformly applied County erosion control and water quality standards designed to minimize erosion and potential associated water quality impacts.

- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin
- Conflict with or obstruct implementation of a sustainable groundwater management plan

These topics related to groundwater are addressed in Section 14.0, Water Supply.

10.4 Analysis, Impacts, and Mitigation Measures

This section includes information and data regarding hydrology and water quality that are relevant to the proposed project based on the thresholds of significance. The information and data are used as a basis for determining impact significance and for mitigation measures.

Water Quality Standards

IMPACT 10-1	Potential to Violate Water Quality Standards or Waste Discharge Requirements	Less than Significant
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Construction Water Quality Impacts

The future individual projects proposed within the project boundary would involve soil disturbance associated with site preparation, grading and excavation activities. Delivery, handling and storage of construction materials and wastes; equipment refueling; and construction equipment use and maintenance could result in spills of oil, grease, or related pollutants. These activities have the potential to cause water quality degradation if eroded soil or other pollutants are carried by storm water into storm water drainage systems and ultimately into downstream water bodies (in McKinleyville, stormwater drains to the Mad River). Construction phase water quality degradation can damage aquatic ecosystem health, and deposition of sediment within surface water and creek channels can adversely modify their function while causing additional erosion that exacerbates water quality degradation.

All future projects proposed within the project boundary are required to obtain NPDES permit coverage under the Phase II Permit. The Phase II Permit includes guidance for storm water and construction site runoff to reduce the discharge of pollutants in storm water to the maximum extent practicable to protect water quality. According to the *Community of McKinleyville Storm Water Management Program*, Humboldt County Code Section 331-14, Grading, Excavation, Erosion, and Sedimentation Control, satisfies some of the minimum control measures required

by the Phase II Permit because it requires submission of an Erosion and Sedimentation Control Plan (for projects that will disturb one acre or more). An Erosion and Sedimentation Control Plan contains identified drainage features and erosion control measures, which are intended to reduce impacts on surface water by reducing the potential for sediment or other water quality contaminants to be discharged directly or indirectly into a surface water body and to ensure that urban runoff contaminants and sediment are minimized during site preparation and construction periods.

Additionally, all future individual projects proposed within the project boundary will be required to comply with General Plan Policies WR-P35, WR-P36, WR-P40, WR-P41, WR-P42, and WR-P44 identified in Section 10.2, Regulatory Setting. McKinleyville Community Plan Policy 3310.12 lists multiple erosion and sediment control measures that shall be incorporated into development design and improvements, which would be required by future development projects in order to reduce the potential for sediment or other contaminants from being discharged into surface runoff. It should be noted that similar language in General Plan policies is used for policies listed in the McKinleyville Community Plan and, therefore, policies from both documents shall be adhered to (e.g., General Plan Policy WR-P40 is similar to McKinleyville Community Plan Policy 3310.11 and General Plan Policy WR-P36 is similar to McKinleyville Community Plan Policy 3310.1).

Required compliance of future development with uniformly applied Phase II Permit, Humboldt County Code Section 331-14 regulations, and applicable uniformly applied General Plan and McKinleyville Community Plan policies would ensure that applicable water quality standards are met and consequently, that water quality impacts during construction will be less than significant. No mitigation measures are required.

Post-Construction (Operational) Water Quality Impacts

Urban development is widely regarded as a leading cause of surface water pollution resulting from altering watershed hydrology and introducing urban pollutants. Construction of future improvements within the project boundary would alter existing storm water drainage conditions by replacing undeveloped land with impervious surfaces such as building rooftops and parking lots. The change in surface conditions would substantially increase storm water runoff volume during project operations relative to existing conditions where a significant portion of storm water currently percolates through exposed soil back to groundwater.

Urban development generally introduces pollutants such as oil and grease and natural and non-natural debris that can be carried in storm water runoff and delivered directly or indirectly to receiving waters. Storm water that travels through landscaped or other pervious developed portions of a development site can also be contaminated with pesticides, fertilizers, and other materials. Where contaminated storm water is delivered into a regulated storm drainage system and then discharged directly or indirectly into a surface water body, water quality

degradation can occur. Unless properly managed, storm water runoff from new urban development will be greater in volume and rate than under non-developed conditions. Increases in the rate or volume of storm water delivered into receiving waters can cause erosion of downstream drainage courses, termed “hydromodification,” which generates additional sediment that further degrades water quality.

All future projects proposed within the project boundary are required to obtain NPDES permit coverage under the Phase II Permit. The Phase II Permit mandates that certain development projects comply with post-construction stormwater requirements based on low impact development standards, which are intended to accommodate a site’s pre-development precipitation runoff by incorporating design techniques that capture, treat, and infiltrate stormwater on-site.

Future individual “small projects” (those that create and/or replace 2,500 to 5,000 square feet of impervious surfaces) proposed within the project boundary will be required to implement at least one site design measure to reduce project site runoff. Examples of site design measures include, but are not limited to, tree planting, vegetated swales, and porous pavement. Small projects that do not require a grading permit and for building permits that do not also require a grading permit, applicants can agree to adhere to a list of erosion control standards and specify implementation measures from a list provided by Humboldt County that will be used to comply with erosion and sediment control standards in the Humboldt County Code Section 331-14.

Future individual “regulated projects” (those that create and/or replace 5,000 square feet or more square feet of impervious surfaces) will be required to implement site design measures based on more detailed procedures and are required to demonstrate compliance with runoff reduction thresholds. Some projects may be required to construct bioretention facilities to promote infiltration of stormwater, while other projects in the larger size category will need to employ source control measures to minimize the contact between pollutants and stormwater runoff (Humboldt County 2024b).

Humboldt County Code Section 337-13.b requires that development projects comply with the post-construction requirements of the MS4 General Permit (i.e., Phase II Permit), which may include measures for site design, source control, runoff reduction, stormwater treatment, or baseline hydromodification management as applicable based on project type and size. Future individual project plans proposed within the project boundary must identify how new post-construction water quality requirements will be met through incorporating best management practices such as low impact development, site design, and storm water treatment. In addition, the future individual projects are required to comply with General Plan Policies WR-P42 and WR-P44, listed in Section 10.2, Regulatory Setting, which would ensure that post-construction water quality requirements are met.

All future development within the project site will be required to comply with the uniformly applied Phase II Permit requirements and post-development storm water management regulations as described above. This will ensure that water quality impacts from storm water runoff during operation of future individual development projects would be less than significant. No mitigation measures are required.

Storm Water Runoff and Flooding

IMPACT 10-2	Increase in Storm Water Runoff with Potential to Cause Flooding and Exceed Storm Drainage System Capacity	Less than Significant
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Future individual development projects proposed within the project boundary would increase the extent of impermeable surfaces in the form of walkways, parking areas, roof tops, etc. Consequently, the volume of storm water runoff from the project site will substantially increase under post-development conditions. The increased runoff could result in the potential for flooding on- or off-site and could result in higher peak discharges that may potentially exceed the capacity of existing or planned stormwater drainage systems.

Future individual development projects would be required to comply with the requirements of the Phase II Permit, which is intended to accommodate a site’s pre-development precipitation runoff by incorporating design techniques that capture, treat, and infiltrate stormwater on-site. Depending on the size of the future project proposed (i.e., “small project” or “regulated project”), one or more site design measures are required in order to reduce project site runoff. Additionally, all future individual projects will be required to comply with the regulations outlined in Humboldt County Code Section 331-14, Grading, Excavation, Erosion, and Sedimentation Control. This Code section, among other post-construction requirements, requires the implementation of best management practices, including low impact development and site design measures that would reduce imperviousness, retain or detain stormwater on-site, decrease surface water flows, and/or slow stormwater runoff rates. Humboldt County Code Chapter 8.1 requires payment of drainage fees for the planned storm drain facilities within the McKinleyville area. This ordinance calls for minimizing direct surface runoff from site developments and minimizing or eliminating flooding.

All future individual projects proposed within the project boundary will also be required to comply with General Plan Policy WR-P37, which requires that peak downstream stormwater discharge not exceed the capacity limits of off-site drainage systems or cause downstream flooding, among other things. This policy requires that new development demonstrate that post-development peak flow discharges mimic natural flows to watercourses. It should be noted that similar language is used for McKinleyville Community Plan Policy 3310.5. Further, compliance with General Plan Policies WR-P35 and WR-P44 (listed under Section 10.2, Regulatory Setting) will be required to reduce the quantity of stormwater runoff from new development and redevelopment projects in the area.

Compliance with these uniformly applied regulatory requirements would ensure that the potential impacts associated with flooding on- or off-site and runoff exceeding capacity of existing or planned stormwater drainage systems would be less than significant.

Life Plan Humboldt

The Life Plan Humboldt project is proposed on approximately 15 acres of the project site. It will be required to implement site design measures and demonstrate compliance with runoff reduction thresholds in coordination with the Humboldt County Planning and Building Department and construct bioretention facilities to promote infiltration of stormwater or employ source control measures to minimize the contact between pollutants and stormwater runoff. The Life Plan Humboldt project would have no new or more severe hydrology and water quality impacts than assumed for the project as a whole.