6.8 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion of siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐		☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

6.8.1 Approach to Analysis

The evaluation of potential impacts on hydrology and water quality during construction and operation of the project is based on qualitative assessments of potential general impacts associated with conduit installation and operation for both the San Francisco Bay Area Network and the Los Angeles Area Network. The prior setting description (section 5.8) provides the basis for determining levels of significance due to the level of sensitivity of the alignment areas in regard to water quality and drainage.

6.8.2 Impact Significance Criteria

Determining the impacts of the project is based on criteria a through j in the environmental checklist above. Additionally, the potential for significant impacts on hydrologic conditions and water quality from construction activities was evaluated based on the intensity and duration of the various disturbances of aquatic and riparian resources.

6.8.3 Impact Mechanisms

Potential construction-related impact mechanisms for water quality include the following:

- Conduit and cable installation could expose soils to stormwater runoff causing erosion and subsequent sedimentation to local and regional drainages.

- Conduit and cable installation and associated disturbance of road embankment or channel bed and bank could induce or increase erosion within drainages. Disturbance to the geomorphic characteristics and stability of a channel bed and banks may initiate erosion in natural channels. Disturbing roadway ditches, which function as extensions of stream networks, also could result in sediment deposition into local drainages.

- Removal of riparian vegetation can weaken streambank structure and increase its susceptibility to erosion. Changes to soil stability factors can increase erosion.

- Hazardous materials associated with the proposed project will be limited to those substances associated with construction equipment, such as gasoline and diesel fuels, engine oil, and hydraulic fluids. An accidental spill of these substances could contaminate drainages, soils, wetlands, and other environmentally sensitive areas.

- Use of guided boring equipment could result in an accidental drilling fluids spill into, or adjacent to, stream channels. Drilling fluids are composed of non-toxic drill lubricants (typically natural clay such as bentonite) and water, which are used to lubricate the bore hole and also to flush cuttings from the bore hole.

- Placement of associated facilities (POPs) in floodplain areas could affect local flooding.

6.8.4 Impact Assessment

Operation and maintenance activities of the project are expected to be minor because access points would already exist and substantial land or vegetation disturbance activities will not be required. Operation and maintenance activities will follow the same guidelines and restrictions as

construction activities; therefore, no significant effects on hydrology and water quality are anticipated for operation of the project. Construction of the project has the potential to impact the hydrology and water quality of local and regional drainages and waterbodies but project-proposed measures would reduce the level of all potential impacts to less than significant.

6.8.4.1 San Francisco Bay Area Network

a. Would the proposed project violate any water quality standards or waste discharge requirements?

Impact WQ-1: Project construction could cause erosion and transport of sediments to local water resources during construction activities. (Less than Significant)

Project construction would not require work in drainages supporting sensitive resources (i.e., streams that support sensitive fish, amphibians, or other riparian and aquatic species or waters that are impaired by sediments). At stream crossings that are flowing at the time of construction, Metromedia would either attach the conduit to an existing bridge or bore under the stream. Metromedia may install conduit across drainages by trenching if the stream were dry during construction.

There would be potential for surface runoff to transport upland construction spoils into streams, which could result in temporary increases in turbidity and sedimentation in watercourses downstream of the project. Excessive sediment in the water column (increased turbidity) can reduce channel capacity, alter drainage characteristics, affect aquatic organisms through reduced water quality, and interfere with fish feeding behavior and with photosynthesis in aquatic flora. Spoils generated during construction would be stored on the project route for a short time (generally less than one day). To minimize the exposure of sediments to runoff, Metromedia would make best efforts to ensure that all trenches were backfilled at the end of each work day. Where backfilling the trench is not feasible, proper erosion control features would be established to eliminate or minimize exposure of sediments to runoff. Metromedia would also implement the applicable erosion control measures identified in the Storm Water Pollution Prevention Plans (SWPPPs) to minimize transport of sediment to streams.

This impact is considered less than significant because, as part of project design, Metromedia would not perform in-channel work in sensitive drainages, would use construction best management practices to minimize sediment transport to streams from upland, would compact and regrade affected areas to match adjacent natural areas, and would seed and mulch or allow natural revegetation at constructed sites, as described in Chapter 3, Project Description.

Separate SWPPPs are being prepared for the San Francisco Bay Area Network and the Los Angeles Area Network. (The San Francisco Bay Area SWPPP is included as an example of both plans, in Appendix C; the Los Angeles Basin SWPPP would be very similar.) Each SWPPP would be implemented by the Spread Supervisor at each project segment and the implemented measures would be monitored by the Environmental Resources Coordinator at each segment. The SWPPPs include measures to minimize erosion and sediment transport to streams and identify best management practices (e.g., water diversion and sediment containment devices, protection of construction spoils, installation of water bars), site restoration, post-construction monitoring of the effectiveness of best management practices, contingency measures, responsible parties, and agency contacts. Erosion control measures include storing spoils out of all stream or ditch corridors

(above ordinary high-water mark) and protecting receiving waters from these erosion source areas with silt fences or other effective sediment control devices. Additionally, stream channels may be protected from surface runoff along the project routes with silt fences or other sediment control devices placed in roadside drainage ditches downstream of construction. Trench spoils would be backfilled into the trenches at the end of each work day to minimize sediment exposure to runoff. If conditions did not allow for small isolated areas (such as handholes or assist points) to be backfilled at the end of each day, appropriate erosion abatement measures would be taken.

Mitigation Measure. No mitigation is required.

Impact WQ-2: Possible long-term erosion from decreased channel stability. (Less than Significant)

Removing riparian vegetation along drainages or disturbing the bed or bank of channels could weaken streambank structure and increase susceptibility to erosion. Disturbing the geomorphic characteristics and stability of the channel bed and banks may initiate chronic erosion in natural channels.

A significant impact could occur if large amounts of riparian vegetation were removed, if the channel bed and banks on several crossings of one channel or within one watershed were disturbed, or if sensitive crossing sites that have been disturbed mechanically were further disturbed by high-flow events before they are stabilized. However, this impact is considered less than significant because the project routes in both northern and southern California are within existing disturbed rights-of-way that generally do not contain riparian vegetation (except where some vegetation has encroached on the rights-of-way) and Metromedia would use, as part of the project design, noninvasive construction methods at flowing sensitive streams.

Mitigation Measure. No mitigation is required.

Impact WQ-3: Possible water quality degradation from accidental spills of construction materials and equipment fluids. (Less than Significant)

Hazardous materials associated with the project would be limited to substances associated with construction equipment, such as gasoline and diesel fuels, engine oil, and hydraulic fluids. Accidental spills of these substances could contaminate drainages, soils, wetlands, and other environmentally sensitive areas.

This impact is considered less than significant because Metromedia is preparing and would implement an SWPPP for each network. The SWPPPs include spill prevention measures that would be strictly implemented as part of the construction mitigation strategy for the proposed project. The construction contractor would follow the SWPPP and perform measures to ensure that petroleum products were not discharged into drainages or waterbodies. Elements of each plan include a description of potentially hazardous and non-hazardous materials that could be spilled accidentally during construction (fuels, equipment lubricant, human waste and chemical toilets, and drilling fluids), potential spill sources, potential spill causes, proper storage and transport methods, spill containment, spill recovery, agency notification, and responsible parties.

Mitigation Measure. No mitigation is required.

Impact WQ-4: Possible water quality degradation and siltation from accidental seepage or spillage of drilling fluids into streams. (Less than Significant)

As mitigation built into the construction approach, Metromedia would install conduit under sensitive flowing streams by boring under the streams or attaching the conduit to existing bridges. During the boring operation, drilling fluid is used to lubricate the bore and help remove cuttings from the borehole. Although unlikely, the drilling fluid mixture could seep to the surface within a stream channel. Seepage could happen if bores encounter fractures in the underlying rock, and drilling fluids pressures are great enough to allow the material to surface. Additionally, drilling fluid could be spilled from the fluid circulation system and enter local drainages.

This impact is considered less than significant because Metromedia would strictly implement the SWPPPs developed for the proposed routes, which include measures to minimize the potential for drilling fluid seepage to streams and to ensure containment of drilling fluids within the drilling circulation system. Such measures include requiring boring crews to strictly monitor drilling fluid pressures, retaining containment equipment on site, immediately stopping work if a seep into a stream is detected, immediately implementing containment measures, adhering to agency reporting requirements, and identifying responsible parties.

Mitigation Measure. No mitigation is required.

Impact WQ-5: Excavation during project construction could encounter groundwater and require dewatering. Discharge of dewatered water could adversely affect surface water quality. (Less than Significant)

The project would involve trenching and excavation in varied terrain. Depths of excavation are typically 4 feet along the conduit route with variable depths dependent upon cover and land use (Metromedia 1999). Groundwater levels vary considerably throughout the project areas and depths of excavation vary with each project component. In some locations, excavation could encounter saturated soil conditions and required dewatering. Dewatering results in the temporary drawdown of the localized water table. Extracted groundwater may be of poor quality and, if discharged to surface waters, could degrade water quality. Approved discharge locations or disposal methods have not been identified for the project.

Groundwater would be discharged or collected and disposed off site, in accordance with all applicable laws and regulations. If dewatered water were discharged to adjacent surface waterways, Metromedia would obtain a National Pollution Discharge and Elimination System (NPDES) permit from the Regional Water Quality Control Board (RWQCB) for surface discharge, as required under Section 402 of the Clean Water Act. Receiving water quality would be maintained through appropriate treatment measures identified in the permit. These may include using settling ponds or screens to reduce suspended sediment loads or, if necessary due to contaminated groundwater, use of on-site treatment systems for contaminant removal prior to discharge.

Mitigation Measure. No mitigation is required.

b. Would the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to

a level that would not support existing land uses or planned uses for which permits have been granted)?

The project consists of the installation of conduit through a variety of means. Depth of the conduit typically would not exceed 48 inches, except under special circumstances such as boring under streams or insertion of conduit into an idle pipeline that was greater than 48 inches deep. Potential dewatering of saturated soils is remote and would unlikely require substantial drawdown of any local water table. No significant impacts on aquifers would occur because the project has been designed to avoid this impact.

c. Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site?

The project has been designed so that no work in sensitive water bodies would occur during the construction. The project would not alter existing drainage patterns through the alteration of a stream or of upland areas, as the rights-of-way will be regraded to pre-construction contours. In all cases, the conduit would either be installed on a bridge or would be bored under flowing streams or drainages. No significant impacts on drainage would occur because the project has been designed to avoid this impact.

d. Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site?

The project would not alter existing drainage patterns through the alteration of a stream course. In all cases, the conduit would either be installed underground or on a bridge or other existing stream crossing or bored under flowing water courses. POPs would not convert significant amounts of permeable land to impervious surface due to their limited size and location in urbanized areas. Therefore, because the project would not affect surface runoff, no significant flooding impacts would occur.

e. Would the proposed project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems?

The project would not create or contribute substantial runoff to drainage systems. POPs would produce very limited runoff through the construction of limited impervious surfaces, but the POPs would be relatively small and in urbanized areas where they would not have a significant effect on local drainages.

f. Would the proposed project otherwise substantially degrade water quality?

The project would not create or contribute polluted runoff to drainage systems that may degrade water quality.

g. Would the proposed project place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The project would not include the construction or placement of housing within floodplains.

h. Would the proposed project place structures within a 100-year flood hazard area that would impede or redirect flood flows?

The Federal Emergency Management Agency's flood insurance rate maps show that the project routes cross numerous 100-year floodplains. The effect of project activities (conduit installation and POP construction) on flood capacity was evaluated. Conduit installation would not affect floodplain capacity because the conduit would be installed approximately 4 feet below the ground surface. Construction-related effects on floodplains would be minimized by avoiding in-channel trenching in sensitive streams and by locating POPs outside of 100-year floodplains. All current San Francisco Bay Area POP locations are outside of both the 100-year and 500-year floodplains of the local areas (FEMA and ESRI 2000). In the Los Angeles area, POPs would be located within existing buildings exclusively. Therefore, potential floodplain-related impacts are considered less than significant.

i. Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

The project would not affect any surface water flows nor increase the risk of flooding and would not place personnel within hazardous flood areas.

j. Would the proposed project contribute to inundation by seiche, tsunami, or mudflow?

The project would not affect the potential for inundation by seiche, tsunami, or mudflow.

6.8.4.2 Los Angeles Basin Network

The hydrologic impacts identified for the San Francisco Area Network are not site-specific but apply to certain situations or construction activities that would occur in both the San Francisco Area and Los Angeles Basin. Project-proposed mitigation measures identified under the San Francisco Area Network impact discussion would also apply to project construction and implementation for the Los Angeles Basin Network.

a. Would the proposed project violate any water quality standards or waste discharge requirements?

The impact and mitigation would be the same for the Los Angeles Basin Network as for the San Francisco Bay Area Network. Please refer to Impacts WQ-1 through WQ-5.

b. Would the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

The project consists of the installation of conduit through a variety of means. Depth of the conduit typically would not exceed 48 inches, except under special circumstances such as boring under streams or insertion of conduit into an idle pipeline that was greater than 48 inches deep. Potential dewatering of saturated soils is remote and would unlikely require substantial drawdown of any local water table. No significant impacts on aquifers would occur because the project has been designed to avoid this impact.

c. Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site?

The project has been designed so that no work in sensitive water bodies would occur during the construction. The project would not alter existing drainage patterns through the alteration of a stream or of upland areas, as the rights-of-way will be regraded to pre-construction contours. In all cases, the conduit would either be installed on a bridge or would be bored under flowing streams or drainages. No significant impacts on drainage would occur because the project has been designed to avoid this impact.

d. Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site?

The project would not alter existing drainage patterns through the alteration of a stream course. In all cases, the conduit would either be installed underground or on a bridge or other existing stream crossing or bored under flowing water courses. POPs would not convert significant amounts of permeable land to impervious surface due to their limited size and location in urbanized areas. Therefore, because the project would not affect surface runoff, no significant flooding impacts would occur.

e. Would the proposed project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems?

The project would not create or contribute substantial runoff to drainage systems. POPs would produce very limited runoff through the construction of limited impervious surfaces, but the POPs would be relatively small and in urbanized areas where they would not have a significant effect on local drainages.

f. Would the proposed project otherwise substantially degrade water quality?

The project would not create or contribute polluted runoff to drainage systems that may degrade water quality.

g. Would the proposed project place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The project would not include the construction or placement of housing within floodplains.

h. Would the proposed project place structures within a 100-year flood hazard area that would impede or redirect flood flows?

Please see the above discussion for criteria h in the San Francisco Bay Area Network, as it also applies to the Los Angeles Basin Network.

i. Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

The project would not affect any surface water flows nor increase the risk of flooding and would not place personnel within hazardous flood areas.

j. Would the proposed project contribute to inundation by seiche, tsunami, or mudflow?

The project would not affect the potential for inundation by seiche, tsunami, or mudflow.