

1 **3.9 HYDROLOGY AND WATER QUALITY**

<b>HYDROLOGY AND WATER QUALITY – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.9.1 Environmental Setting**

3 The Project area would be located within the floodplain of the lower River within the  
 4 River Basin Region and more specifically in the Dead Mountains Hydrologic Unit which  
 5 is a sub unit of the HOMER Hydraulic Unit as identified in the Water Quality Control

1 Plan, Colorado River Basin-Region 7 Regional Ground Water Basin (Hydrologic Unit)  
 2 Map (CRWCB 2014). Hydrologic connections between the Project area and River are  
 3 present through groundwater flows and surface water runoff. Hydrologic indicators,  
 4 including salt crust and surface water, exist throughout a significant portion of the  
 5 Project area (Bio-West Inc. 2015).

6 The Project area is located where soil characteristics are Salothids and Indio-Silt.  
 7 Although the Project area has been highly modified, conditions have normalized to a  
 8 degree that routine wetland delineation is appropriate. A wetlands investigation report  
 9 prepared in May 2015 identified that hydrologic indicators were generally present  
 10 despite dry season conditions (Appendix O). Soil textures generally ranged from clay to  
 11 sand depending on their position in the landscape. The Project area contains large  
 12 areas that are covered with a salt crust and the soils that commonly contain salt  
 13 concentrations. Currently, this area consists of 146.5 acres of land within a Reclamation  
 14 dredge spoil area created as a result of past dredging operations and provides  
 15 designated and signed trails for OHV recreational use. The OHV recreational area is  
 16 located northwest of the Park Moabi Channel and Beach.

17 On September 21, 2015, consultations with CDFW determined that no Lake and  
 18 Streambed Alteration Permit Agreement was required for the Project. CDFW  
 19 determined that the Project would not substantially affect an existing fish or wildlife  
 20 resource (Appendix Q).

### 21 **3.9.2 Regulatory Setting**

22 The following Federal and State laws and regulations pertaining to this issue area and  
 23 relevant to the Project are identified in Table 3.9-1.

**Table 3.9-1. Laws, Regulations, and Policies (Hydrology and Water Quality)**

<b>U.S.</b>	Clean Water Act (CWA) (33 USC 1251 et seq.)	<p>The CWA is comprehensive legislation (it generally includes reference to the Federal Water Pollution Control Act of 1972, its supplementation by the CWA of 1977, and amendments in 1981, 1987, and 1993) that seeks to protect the nation’s water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. These water quality standards are promulgated by the USEPA and enforced in California by the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). CWA sections include:</p> <ul style="list-style-type: none"> <li>• <u>State Water Quality Certification</u>. Section 401 (33 USC 1341) requires certification from the State or interstate water control agencies that a proposed water resources project is in compliance with established effluent limitations and water quality standards. USACE projects, as well as applicants for Federal permits or licenses are required to obtain this certification.</li> <li>• <u>National Pollution Discharge Elimination System (NPDES)</u>. Section 402 (33 USC 1342) establishes conditions and permitting for discharges of pollutants under the NPDES.</li> <li>• <u>Permits for Dredged or Fill Material</u>. Section 404 (33 USC 1344) authorizes a separate permit program for disposal of dredged or fill material in U.S. waters.</li> </ul>
<b>U.S.</b>	Oil Pollution Act (OPA) (33 USC 2712)	The OPA requires owners and operators of facilities that could cause substantial harm to the environment to prepare and submit plans for responding to worst-case discharges of oil and hazardous substances. The passage of the OPA

**Table 3.9-1. Laws, Regulations, and Policies (Hydrology and Water Quality)**

		motivated California to pass a more stringent spill response and recovery regulation and the creation of the Office of Spill Prevention and Response (OSPR) to review and regulate oil spill plans and contracts.
<b>U.S.</b>	Rivers and Harbors Act (33 USC 401)	This Act governs specified activities (e.g., construction of structures and discharge of fill) in “navigable waters” of the U.S. (waters subject to the ebb and flow of the tide or that are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce). Under section 10, excavation or fill within navigable waters requires approval from the USACE, and the building of any wharf, pier, jetty, or other structure is prohibited without Congressional approval.
<b>CA</b>	Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13000 et seq.) (Porter-Cologne)	<p>Porter-Cologne is the principal law governing water quality in California. The Act established the SWRCB and nine RWQCBs who have primary responsibility for protecting State water quality and the beneficial uses of State waters. Porter-Cologne also implements many provisions of the Federal CWA, such as the National Pollutant Discharge Elimination System (NPDES) permitting program. Pursuant to the CWA section 401, applicants for a Federal license or permit for activities that may result in any discharge to waters of the U. S. must seek a Water Quality Certification (Certification) from the State in which the discharge originates. Such Certification is based on a finding that the discharge will meet water quality standards and other appropriate requirements of State law. In California, RWQCBs issue or deny certification for discharges within their jurisdiction. The SWRCB has this responsibility where projects or activities affect waters in more than one RWQCB’s jurisdiction. If the SWRCB or a RWQCB imposes a condition on its Certification, those conditions must be included in the Federal permit or license.</p> <p>Statewide Water Quality Control Plans include: individual RWQCB Basin Plans; the California Ocean Plan; the San Francisco Bay/Sacramento-San Joaquin Delta Estuary Water Quality Control Plan (Bay-Delta Plan); the Water Quality Control Plan for Enclosed Bays and Estuaries of California; and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). These Plans contain enforceable standards for the various waters they address. For example:</p> <ul style="list-style-type: none"> <li>• <u>Basin Plan</u>. Porter-Cologne (§ 13240) requires each RWQCB to formulate and adopt a Basin Plan for all areas within the Region. Each RWQCB establishes water quality objectives to ensure the reasonable protection of beneficial uses and a program of implementation for achieving water quality objectives within the basin plans. 40 CFR 131 requires each State to adopt water quality standards by designating water uses to be protected and adopting water quality criteria that protect the designated uses. In California, the beneficial uses and water quality objectives are the State’s water quality standards.</li> </ul>
<b>CA</b>	Sections 1601 to 1603 of the Fish and Game Code	Under Sections 1601 to 1603 of the Fish and Game Code, the California Department of Fish and Wildlife (CDFW) must be notified prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. The term “stream” can include perennial, intermittent, and ephemeral streams; rivers; creeks; dry washes; sloughs; and watercourses with subsurface flows. The CDFW has issued a Draft Streambed Alteration Agreement for the GP Antioch wharf project, which would become final after the CEQA MND has been approved.
<b>CA</b>	Other	<ul style="list-style-type: none"> <li>• California Water Code section 8710 requires that a reclamation board permit be obtained prior to the start of any work, including excavation and construction activities, if projects are located within floodways or levee sections. Structures for human habitation are not permitted within designated floodways.</li> </ul>

## 1 Water Quality Standards

2 Water Quality Standards can be summarized as follows:

- 3 • State-adopted and USEPA approved ambient standards for water bodies. The  
4 standards prescribe the use of the water body and establish the water quality  
5 criteria that must be met.
- 6 • The limits or levels of water quality elements or biological characteristics  
7 established to reasonably protect the beneficial uses of water or the prevent  
8 problems within a specific area. Water quality objectives may be numeric or  
9 narrative.
- 10 • Levels of water quality determined by the USEPA and expected to render a body  
11 of water suitable for its designated use. Criteria are based on specific levels of  
12 pollutants that would make the water harmful if used for drinking, swimming,  
13 farming, fish production, or industrial processes.

14 The State Water Resources Control Board in conjunction with the nine Regional Water  
15 Quality Control Boards is responsible for implementing water quality standards.

16 This section incorporates by reference information and data from the *Mohave Valley*  
17 *Conservation Area Wetlands Investigation Draft Report, San Bernardino County,*  
18 *California* prepared in May 2015 as a component of the CWA Section 404 permit  
19 application and the 401 state certification. (Appendix O).

20 In addition, this section incorporates information from the Moabi Regional Park Lease of  
21 State Lands, San Bernardino County Initial Study Environmental Checklist Form  
22 prepared in October, 2012 (2012 IS Checklist) (SBC 2012). Information from the County  
23 IS is based in part on the Hydrology Reports prepared by ARQ Engineering, LLC and  
24 the *In-House Water and Sewer Feasibility Study South/North Peninsula Project/Park*  
25 *Moabi* prepared by County of San Bernardino Special Districts Department (ARQ  
26 Engineering LLC 2012) (Appendix P).

## 27 Local

28 The following goals and policies related to water are from the San Bernardino County  
29 2007 General Plan:

- 30 • Chapter V Conservation – Section D.2.Goal CI 13. Water, Wastewater, and  
31 Stormwater. To ensure safe, reliable, and high quality water supply for all  
32 residents and ensure prevention of surface and ground water pollution by:
  - 33 ○ **CI 11.1.** Apply Federal and State water quality standards for surface  
34 and groundwater and wastewater discharge requirements in the review of  
35 development proposals that relate to type, location and size of the  
36 proposed project to safeguard public health.
  - 37 ○ **CI 11.2.** Support the safe management of hazardous materials to avoid  
38 the pollution of both surface and groundwaters. Prohibit hazardous waste

1 disposal facilities within any area known to be or suspected of supplying  
2 principal recharge to a regional aquifer.

- 3 ○ **CI 11.3.** Support the development of groundwater quality management  
4 plans with emphasis on protection of the quality of underground waters  
5 from non-point pollution sources.

### 6 **3.9.3 Impact Analysis (CEQA)**

7 **a) Violate any water quality standards or waste discharge requirements?**

8 **f) Otherwise substantially degrade water quality?**

9 **Less than Significant with Mitigation.** The Project would require grading to  
10 contour the wetland and open backwater habitat. No new impervious surfaces or  
11 pavements that would result in potential surface runoff would be created from  
12 grading and excavation activities during Phases 1 through 2. To control  
13 contaminants entering nearby water bodies as a result of surface runoff, **MM**  
14 **HMM-2** would be incorporated into the Project to provide assurance that impacts  
15 would remain less than significant:

16 **MM HMM-2: Toxic Substances Protections.** To ensure toxic substances are  
17 not released into the aquatic environment, the following measures shall be  
18 followed:

- 19 • All engine-powered equipment shall be well-maintained and free of leaks  
20 of fuel, oil, hydraulic fluid or any other potential contaminant;
- 21 • Staging areas for refueling of equipment shall be located away from the  
22 backwater and away from the Colorado River to prevent any accidental  
23 fuel leakage from contaminating surface water;
- 24 • A spill prevention and response plan shall be prepared in advance of the  
25 commencement of work; a spill kit with appropriate clean-up supplies shall  
26 be kept on hand during operations.
  - 27 ○ The kit shall include a floating oil-absorbent sock that could be  
28 immediately deployed and maintained around the Project area in  
29 the event of a spill or any accidental leakage of fuel or hydraulic  
30 fluids;
  - 31 ○ Refueling and maintenance of mobile equipment shall not be  
32 performed directly over the waters of the Colorado River. Only  
33 approved and certified fuel cans with “no-spill” spring-loaded  
34 nozzles shall be used; and
  - 35 ○ All spill cleanup materials or other liquid or solid wastes shall be  
36 securely containerized and labeled in the field.

- 1           • The application and control of herbicides and pesticides shall be in  
2           accordance with the Toxic Substances Control Act (TSCA) and  
3           Environmental Protection Agency Labeling requirements including but not  
4           limited to:
- 5                 ○ Requiring a certified and trained applicator
- 6                 ○ Application of the material in accordance with its label

7           In addition, no waste water facilities would be incorporated into the Project  
8           design. Impacts are expected to be less than significant with the implementation  
9           of **MM HHM-2**.

10          ***b) Substantially deplete groundwater supplies or interfere substantially with***  
11          ***groundwater recharge such that there would be a net deficit in aquifer***  
12          ***volume or a lowering of the local groundwater table level (e.g., the***  
13          ***production rate of pre-existing nearby wells would drop to a level which***  
14          ***would not support existing land uses or planned uses for which permits***  
15          ***have been granted)?***

16          **Less than Significant Impact.** The Project area is not within a groundwater  
17          storage or recharge area. The wetlands hydrology within the area appears to be  
18          primarily associated with precipitation, and/or high groundwater table.

19          The Project would create wetland and backwater habitat in addition to what  
20          currently exists in the adjacent areas, which would reduce the amount of  
21          impervious surfaces. The open backwater would be connected to the River and  
22          the Park Moabi Channel and allow for a natural flow of River water to pass  
23          through the newly created backwater habitat.

24          Thus, the Project would enhance wetlands conditions within the Project area and  
25          would not interfere with groundwater recharge. Please refer to Section 3.17,  
26          Utilities and Service Systems for discussion on water supply.

27          ***c) Substantially alter the existing drainage pattern of the site or area,***  
28          ***including through the alteration of the course of a stream or river, in a***  
29          ***manner which would result in substantial erosion or siltation on- or off-***  
30          ***site?***

31          ***d) Substantially alter the existing drainage pattern of the site or area,***  
32          ***including through the alteration of the course of a stream or river, or***  
33          ***substantially increase the rate or amount of surface runoff in a manner***  
34          ***which would result in flooding on- or off-site?***

35          ***e) Create or contribute runoff water which would exceed the capacity of***  
36          ***existing or planned stormwater drainage systems or provide substantial***  
37          ***additional sources of polluted runoff?***

1       **Less than Significant Impact.** The Project area is currently a dredge spoil area  
2 densely populated by non-native vegetation. Currently, the Park Moabi Channel  
3 and a roadway berm that surrounds the Project area prevent flooding by the  
4 River. Seasonal flooding and surface runoff from offsite hills to the west drain into  
5 depressional swales that appear to be remnants of the historic River channels  
6 (Figure 2.2-1). An emergent wetland at the south of the Project area appears to  
7 be continuously flooded by the Park Moabi Channel (Appendix O).

8       The Project is designed to create an open backwater system that would connect  
9 to the River and the Park Moabi Channel, creating additional habitat for  
10 Threatened and Endangered (T&E) fish species. Although the development of a  
11 new open backwater would create an additional channel, it is designed to allow  
12 flows to pass through and enter back into the River by way of the Park Moabi  
13 Channel. The course of the River would remain at its current course and surface  
14 runoff would continue to drain into the River. To control flow rate through the  
15 open backwater, water control structures would be constructed at the north and  
16 southern end (Figure 2.4-1).

17       In addition, since no buildings or additional paved areas would be constructed,  
18 no new impervious surfaces would be created that would increase the amount  
19 and flow rate of surface runoff within the Project area.

20       The Project would not substantially alter the existing drainage pattern of the site  
21 or area; substantially increase the rate or amount of surface runoff in a manner  
22 which would result in flooding on- or off-site; or create or contribute runoff water  
23 which would exceed the capacity of existing or planned storm water drainage  
24 systems.

25       Although the Project would not alter any drainage patterns, the Project would  
26 alter existing structures in the channel of the River. Both during and after  
27 construction of the created open backwater and additional shoreline, the new  
28 flow of the River would not be obstructed or restrained. The created backwater  
29 flows would return back into the River through Park Moabi Channel via the outlet  
30 located on the south end of the new open water channel designed into the  
31 Project (Figure 2.4-1).

32       Hydrological indicators were documented in the 2015 Wetlands Delineation  
33 Report (Appendix O). This Report indicated that seasonal flooding from  
34 ephemeral washes drain into the Project Area from the offset hills to the west.  
35 This seasonal flooding feeds a wetlands area that spans the majority of the  
36 Project area (Figure 2.2-1). These wetlands are characterized as depressional  
37 swales located between upland communities. Current conditions present in the  
38 Project area indicate that drainage patterns flowing into the area would not be  
39 altered. Although the Project would not alter the existing drainage pattern of the  
40 site or surrounding area, the Project's removal of soil material to create the  
41 deeper open water backwater could result in potential erosion near the created  
42 shore (Figure 2.4-5). Implementation of the re-vegetation plan described in

1 Section 2.4 under Phase 3 would improve and enhance conditions that would  
2 minimize soil erosion after the Project is constructed.

3 In addition, implementation of the conditions and stipulations required under the  
4 NPDES, SWPPP, and the WQMP to control soil erosion, will ensure Project  
5 activities do not produce substantial erosion during the implementation of the  
6 Project.

7 **g) Place housing within a 100-year flood hazard area as mapped on a federal  
8 Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard  
9 delineation map?**

10 **h) Place within a 100-year flood hazard area structures which would impede  
11 or redirect flood flows?**

12 **No Impact.** According to FEMA Community Panel 5658H effective 8-28-08 both  
13 the North Peninsula and South Peninsula are located in Zone X (defined as an  
14 area of moderate flood hazard, usually the area between the limits of the 100-  
15 year and 500-year floods). Therefore, no housing or structures are being  
16 proposed within a 100-year flood plain. Improvements to the wetlands and  
17 backwater habitat area consist of the creation of open water and re-vegetation of  
18 native plants. Also, no housing or structures are being proposed within a 100-  
19 year flood hazard area which would impede or redirect flood flows.

20 **i) Expose people or structures to a significant risk of loss, injury or death  
21 involving flooding, including flooding as a result of the failure of a levee or  
22 dam?**

23 **No Impact.** According to County of San Bernardino Hazards Overlay Map EJJFB  
24 (Essex), the Project area and surrounding area is located outside of any  
25 designated dam inundation area (SBC 2010). The Project would not expose  
26 people or structures to a significant risk of loss, injury or death involving flooding,  
27 including flooding as a result of the failure of a levee or dam, because no levee or  
28 dam is proposed as part of the Project. Therefore, impacts are anticipated to be  
29 less than significant.

30 **j) Inundation by seiche, tsunami, or mudflow?**

31 **No Impact.** The Project area is not identified on the Tsunami Inundation Maps  
32 prepared by the California Department of Conservation (2015b).

33 A seiche is an oscillating surface wave in a restricted or enclosed body of water  
34 generated by ground motion, usually during an earthquake. Inundation from a  
35 seiche can occur if the wave overflows a containment wall or the banks of a  
36 water body. Based on information obtained from the United States Geological  
37 Survey, the River in the Project area has a depth that has fluctuated less than 5  
38 feet over the past three years. Due to the relatively fixed depth of the water (6 to



1 18 feet) and the narrow width of the River (approximately 200 feet) at the Project  
2 area, the impacts from a seiche are not anticipated to be significant.

3 Based on the responses to Section 3.6.3 (items **a** and **c**) of the 2012 IS  
4 Checklist, the Project area is not located in an area prone to landslides, soil slips,  
5 or slumps (SBC 2012). Therefore, the Project would have no impacts from  
6 mudflows.

### 7 **3.9.4 Environmental Consequences (NEPA)**

#### 8 **No Action Alternative**

9 The No Action Alternative would have no impacts related to Hydrology and Water  
10 Quality. The Project would not be implemented and the Project area would remain at its  
11 current hydrologic condition described in Section 3.9.1.

#### 12 **Proposed Action (Project)**

13 Although the Project would result in the creation of an open backwater that would divert  
14 flows, the flows would return to the River by way of the Park Moabi Channel and restore  
15 water flows to degraded wetlands within the Project area. The Wetlands Delineation  
16 Report prepared in May 2015 concluded that seasonally flooded wetlands and  
17 perennially flooded emergent wetlands that possess the characteristics of jurisdictional  
18 water bodies regulated by the U.S. Army Corps of Engineers (USACE) are within the  
19 Project area (Appendix O). To ensure all USACE requirements are met under the CWA,  
20 a CWA Section 404 permit and Section 401 certification application is being prepared  
21 for the Project. Once the USACE makes its determination and a permit is issued, all  
22 conditions, stipulations and requirements will be met to ensure compliance with the  
23 CWA. To ensure short-term potential impacts to hydrology and water quality would be  
24 reduced and minimized, regulatory requirements are met under the CWA such as the  
25 implementation of a NPDES, SWPPP and a WQMP, and **MM HHM-2** would be  
26 incorporated into the Project. The implementation of the Project is anticipated to  
27 improve and enhance site conditions.

#### 28 **Cumulative Impacts**

29 The analysis area for potential cumulative impacts related to Hydrology and Water  
30 Quality was defined as the Project area because no potential impacts are anticipated  
31 outside of the Project area. No cumulative impacts are anticipated because of the  
32 mitigation measures that would be implemented under the Project are expected to  
33 prevent or minimize impacts relating to hydrology and water quality.

### 34 **3.9.5 Mitigation Summary (CEQA Only)**

35 Implementation of the following mitigation measure would reduce the potential for  
36 Project-related impacts to Hydrology and Water Quality to less than significant.

- 37 • **MM HHM-2: Toxic Substances Protections**