3.1 Water Resources

3.1.1 Introduction

This section describes the affected environment for water resources in the project area. This section also provides a discussion of the potential impacts to water resources from implementation of a conceptual water transaction program and demonstrates the effectiveness of the proposed project (i.e., the proposed General Plan policies and amendments) in reducing or mitigating environmental impacts of potential WBRP water transactions in Mono County.

3.1.2 Scoping Comments

The WBC provided comments applicable to water resources during the scoping period for the EIR. These comments and the location where they are addressed in the water resource analysis are provided in Table 3.1-1.

Table 3.1-1 Water Resources Scoping Comments

Agency/Entity	Comment	Location in Water Resource Section
WBC	The WBC has relinquished 11,710 acre-feet of supplemental groundwater to benefit Walker Basin's groundwater table. If the conceptual water transaction program is implemented, the WBC could continue to relinquish groundwater rights to benefit the groundwater table of the area, potentially lessening the impacts to water resources.	Addressed in proposed Guidelines Policy 1.4 and analyzed under Impact Hydrology2 below in Section 3.1.6.
WBC	The WBC has developed an interactive mapping application in accordance with United States Geological Survey (USGS) Nevada that provides real-time streamflow and lake and reservoir storage level data for Walker Basin. The mapping application was developed to create a common operation picture for water users in the Walker Basin and to help monitor changes in instream flows associated with the WBRP. The WBC would continue to use the mapping application during the implementation of the proposed project, which could potentially decrease impacts to water resources.	Noted.
WBC	When the Conservancy acquires water rights, the Conservancy revegetates where needed with active restoration for a period of at least two years in order to ensure that there are no fugitive dust issues. Primary restoration goals for stewardship activities address three main issues: fugitive dust abatement, soil stabilization and noxious weed control. Improved	Addressed in Impact Hydrology-1.

Agency/Entity	Comment	Location in Water Resource Section
	habitat is addressed where appropriate and possible. Establishing arid-land vegetation that can ultimately survive without supplemental irrigation is the long-term goal for the Land Stewardship Program.	
County BOS	Address groundwater substitution for surface water and the associated effects.	Addressed in Guidelines Policy 1.4 and analyzed under Impact Hydrology-2 below in Section 3.1.6.
Antelope Valley RPAC	Assess indirect impacts on water rights and water wells.	Addressed in Impact Hydrology-2 below in Section 3.1.6.

3.1.3 Existing Environment

Regional Setting

The Walker River Basin drains from the Sierra Nevada range in California to the terminal Walker Lake in the Great Basin area of Nevada. The East and West Walker Rivers and their tributaries are the headwaters of the basin in northern Mono County, California (Figure 1.3-1). The West Walker River flows northeast from the Sierras through the Antelope Valley, past the Topaz Lake Reservoir, and into Nevada. The East Walker River flows from its headwaters northeast through Bridgeport Valley and into Bridgeport Reservoir. The outflow from Bridgeport Reservoir passes through a small canyon and into Nevada. The two forks join to form the Walker River just before the town of Yerington, in Lyon County, Nevada.

The project area includes all irrigated areas within the California side of Walker Lake Basin with decreed or storage water rights. This area is not only the Bridgeport and Antelope Valley floors, but includes surrounding meadows such as Little Antelope Valley, Huntoon Valley, Sinnamon Meadows, and Upper and Lower Summers Meadows. Antelope and Bridgeport Valleys are two meadow valleys in California along the western and eastern forks of the Walker River. In these areas, as well as smaller surrounding meadows, rich soils and ample water provided from the high mountains to the east have supported agricultural production for over 150 years. The climate in Antelope and Bridgeport Valleys is humid continental, in that most of the precipitation occurs during long cold winters. Average temperatures generally range from 60 to 70 degrees Fahrenheit in the summer, and 20 to 30 degrees Fahrenheit in the winter. Located in the rain shadow of the Sierra Nevada crest, both Antelope and Bridgeport Valleys receive most of their water as runoff that descends from the adjacent mountains. Annual precipitation within the valleys averages eight to 12 inches, while average precipitation in the headwater reaches of Walker Basin is 35 to 40 inches. Brief summer monsoon rainstorms can occur, but the majority (roughly 75 percent) of precipitation falls from October through April.

Precipitation and Recharge

Snowmelt in the upper watershed and associated runoff remain high from May through July, depending on the water year. Because both valleys are in the rain shadow of the Sierra Nevada,

direct precipitation is a far less critical hydrologic input than surface flows from upstream and subsurface groundwater inputs. The bottoms of both valleys are considered impermeable (Carroll & Pohll, 2013) such that subsurface recharge comes from the valley sides, and primarily from the western slopes. The Antelope Valley floor is at 5,000 to 5,800 feet above mean sea level (amsl), and the mountain range contributing rainfall runoff reaches an elevation of approximately 10,000 feet. The Bridgeport Valley floor is at an elevation 6,450 to 6,750 feet amsl, and the surrounding mountains reach an elevation of approximately 12,303 feet amsl along the Sierra Crest.

Surface Water

Lakes and Reservoirs

No natural lakes occur within the California side of Walker Basin. Irrigation flow into the Antelope and Bridgeport Valleys have been controlled for at least the last 100 years through a series of reservoirs, irrigation ditches (mostly unlined), flumes, weirs, river pumps, and water control gates.

Water is stored is in the Green Lakes (Green, East, and West lakes), and Upper and Lower Twin Lakes above Bridgeport Valley and in Poore and Lobdell Lakes and Black Reservoir above Antelope Valley. Water is stored in these reservoirs to extend the runoff period through the growing season for agricultural areas along the Walker River. Topaz Lake is located downstream of Antelope Valley and provides storage for agricultural water use in Nevada. Bridgeport Reservoir is located downstream of Bridgeport Valley and provides storage for use along the east Walker River and areas downstream in Nevada. Reservoirs in the project area are described in Table 3.1-2. Storage rights within those reservoirs are provided Table 2.5-1.

Table 3.1-2 Reservoirs in the Project Area

Reservoir Name	Location Relative to Valley	Water Source	Water Storage Uses	Other Uses
Lobdell Lake	Upstream of Antelope Valley	Deep Creek	Diversion right of 6 cfs dating from 1864 Delivers water to Smith Valley on Desert Creek (California Department of Water Resources, 1992).	Fishing, hiking
Poore Lake	Upstream of Antelope Valley	Poore Creek	Storage right dating to 1901 Delivers water for use in Antelope Valley (California Department of Water Resources, 1992).	Fishing, hiking
Black Reservoir	Upstream of Antelope Valley	Black Creek	Occupies a topographic low point at the edge of a meadow and provides a head of water for irrigating adjacent pasturelands in Sonora Junction area. Storage right dates to 1907 (California Department of Water Resources, 1992).	Fishing, hiking

Reservoir Name	Location Relative to Valley	Water Source	Water Storage Uses	Other Uses
Green Lakes	Upstream of Bridgeport Valley	Green Creek	Decreed storage right of 400 AF to Bridgeport Valley Priority date of 1895	Fishing, hiking
Lower Twin Lake	Upstream of Bridgeport Valley	Robinson Creek	Decreed storage right of 4,050 AF, with a priority date of 1888 and refill priority date of 1905.	Camping, boating, fishing
Upper Twin Lake	Upstream of Bridgeport Valley	Robinson Creek	Decreed storage right of 2,050 AF, with a priority date of 1905 and refill priority date of 1906	Camping, boating, fishing

Rivers and Streams

The two major river systems in the project area include the East and West Walker Rivers. These two river systems are fed by a series of creeks and streams that originate primarily in the Sierra Nevada to the west of the basin. Table 3.1-3 lists the creeks in the project area.

Table 3.1-3 Rivers and Streams in the Project Area

Creek	Flows To
Slinkard Creek	West Walker River
Mill Creek	West Walker River
Lost Cannon Creek	West Walker River
Deep Creek	West Walker River
Desert Creek	West Walker River in Nevada
Poore Creek	West Walker River
Black Creek	West Walker River
Little Walker River	Black Creek
Molybdenite Creek	Little Walker River
West Walker River	Topaz Reservoir and into Nevada

River Flow

Daily flows at the downstream ends of Antelope Valley and Bridgeport Valley have been measured by USGS at two locations (see Table 3.1-4). During the wet year of 1997 and dry year of 2007, flow patterns at the downstream ends of Antelope and Bridgeport Valley were similar, except there were greater summer and fall flows entering the Hoye Bridge Gage in both years (Bureau of Reclamation, 2010). The flow increases may be attributable to surface runoff and tributary inflow.

Table 3.1-4 USGS Flow and Storage Gage Locations in Project Area

Gage Number	USGS Site Name	Period of Record
	Antelope Valley	
10297500	West Walker River at Hoye Bridge near Wellington, NV (Hoye Bridge Gage)	1910-present
	Bridgeport Valley	
10293000	East Walker River downstream of Bridgeport Reservoir, CA	1921-present

Irrigation Ditches

Antelope Valley

Antelope Valley has an irrigation area of 12,865 acres, with 18,143 acres under Decree-irrigated acreage. Water is diverted from the West Walker River into a series of diversion ditches. Irrigation ditches and the irrigation area in Antelope Valley is shown in Figure 2.4-1 and Figure 2.4-2.

Bridgeport Valley

Bridgeport Valley has a total of 16,081 acres of irrigation area, with 23,669 acres under the Decree-irrigated acreage. Irrigated areas in Bridgeport Valley are shown in Figure 2.4-3.

Water-Righted Acres

Water supply for agricultural use in the Walker Basin comes from both surface water and groundwater. Surface water rights comprise the majority of water rights in Antelope and Bridgeport Valleys and are primarily made up of appropriative rights adjudicated by a federal Decree (C-125), as described in Section 2.5.3 of the Project Description. Groundwater is largely used in Antelope Valley to supplement decreed surface water rights.

Groundwater

Antelope Valley

Groundwater in Antelope Valley comes primarily from old and young alluvial aquifers within the basin. The younger alluvium primarily consists of unconsolidated gravel, sand, silt, and clay, whereas the older alluvium consists of unconsolidated to consolidated deposits of boulders, gravel, sand, silt, and clay (Sharpe, Cablk, & Thomas, 2008). The alluvial aquifers are bounded by consolidated rocks that transmit little water. Hydraulic properties of the alluvial aquifers are not available; however, similar alluvial aquifers in Smith and Mason valleys and the Schurz/Walker River Paiute Reservation area generally have transmissivities that range from 50,000 to 200,000 gallons per day per foot (Glancy, 1971). Similar transmissivity is likely for the alluvial aquifers in Antelope Valley because the aquifers contain similar materials to those in the other basins. The West Walker River is a major source of recharge to the Antelope Valley alluvial aquifer, both directly from the river and indirectly from irrigation infiltration on agricultural properties throughout the valley. The quantity of surface water recharge is not known in Antelope Valley. Recharge to the alluvial aquifers from precipitation in mountains

surrounding Antelope Valley is estimated to be 18,000 acre-feet per year. Groundwater inflow to alluvial aquifers in the valley is estimated at 1,000 acre-feet per year (Glancy, 1971).

Bridgeport Valley

The Bridgeport Valley groundwater basin has a shallow water table that is recharged from streams, tributaries, and irrigation water applied to agricultural land in the basin as well as groundwater inflow from recharge derived as precipitation in the Sierra Nevada (Sharpe, Cablk, & Thomas, 2008). The amount of groundwater recharge from these sources has not been quantified. Groundwater used in the basin is likely pumped from alluvial aquifers, as similar to the other valleys in the Walker River drainage, but no studies have been published that evaluate groundwater resources in Bridgeport Valley.

Groundwater Withdrawal

As discussed in Section 2.5.2 of the Project Description, there are two types of groundwater rights in California: 1) overlying groundwater rights that entitle holders to extract groundwater from the underling aquifer for reasonable use, and 2) appropriative groundwater rights that entitle holders to extract the surplus water from the aquifer for use on non-overlaying property. Approximately 3,371 acres of land in Antelope Valley are supplementing irrigation with groundwater (USGS, 2017). No data on groundwater use is available for Bridgeport Valley.

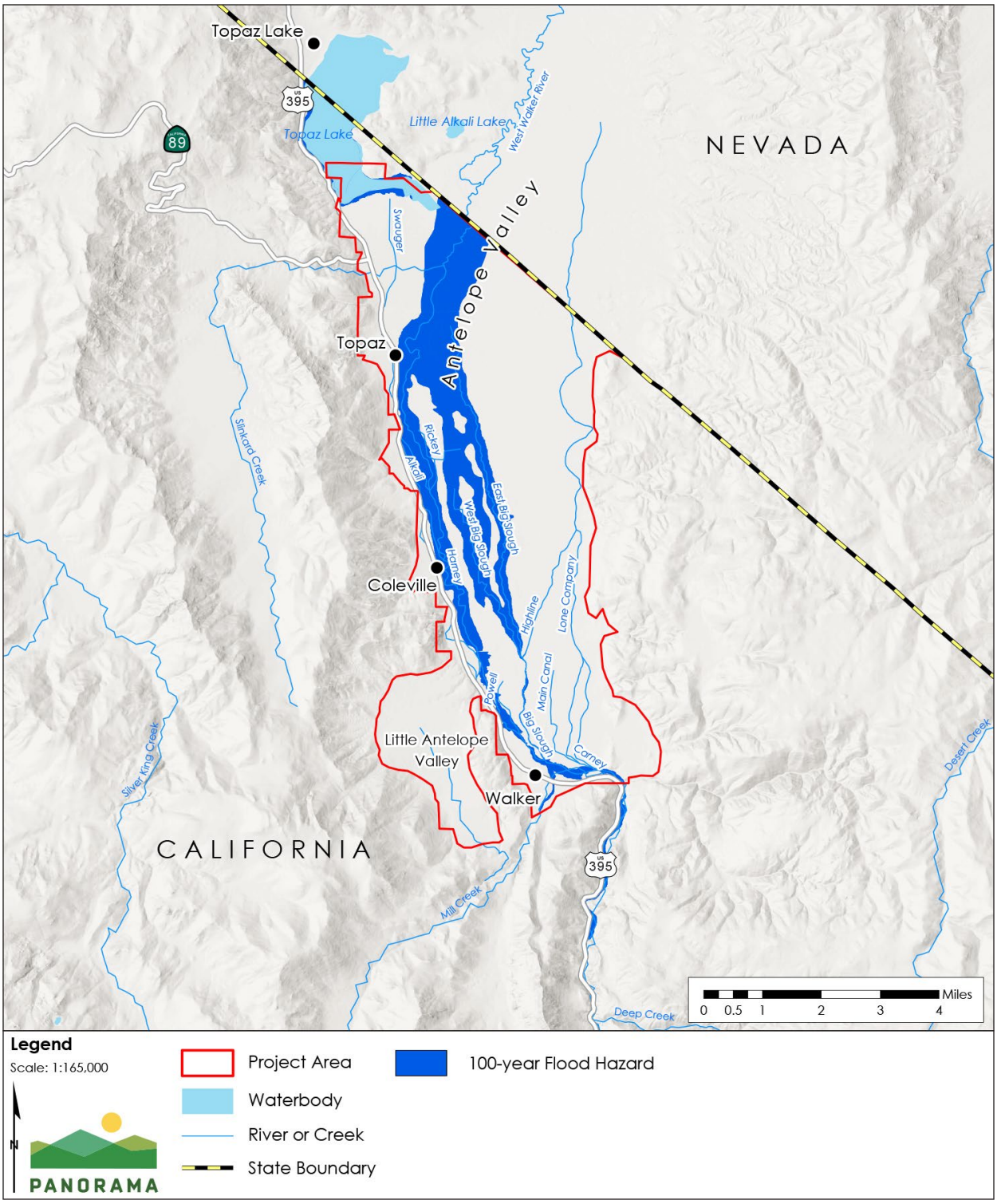
Water Quality

Section 303(d) of the 1972 federal Clean Water Act (CWA) requires states to identify and submit to the United States Environmental Protection Agency (USEPA) a list of water bodies that neither meet water quality objectives nor support their beneficial uses. If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point-source nor non-point-source controls (National Pollutant Discharge Elimination System [NPDES] permits or Waste Discharge Requirements [WDRs]), the CWA requires the establishment of a Total Maximum Daily Load (TMDL) or each constituent that is a source of impairment. The TMDL process provides a quantitative assessment of water quality problems, contributing sources of pollution, and the contaminant load reductions or control actions needed to restore and protect the beneficial uses of an individual waterbody or waterway impaired from loading of a contaminant. Antelope Valley and Bridgeport Valley drain into Topaz Lake Reservoir and Bridgeport Reservoir, respectively. Currently, no TMDLs are being implemented for the Topaz Lake Reservoir and Bridgeport Reservoir. However, a TMDL is needed for Bridgeport Reservoir because Bridgeport Reservoir is under impaired status for fish, shellfish, and wildlife protection and propagation due to excessive nitrogen, phosphorus, sedimentation, and siltation (USEPA, 2020).

Flooding

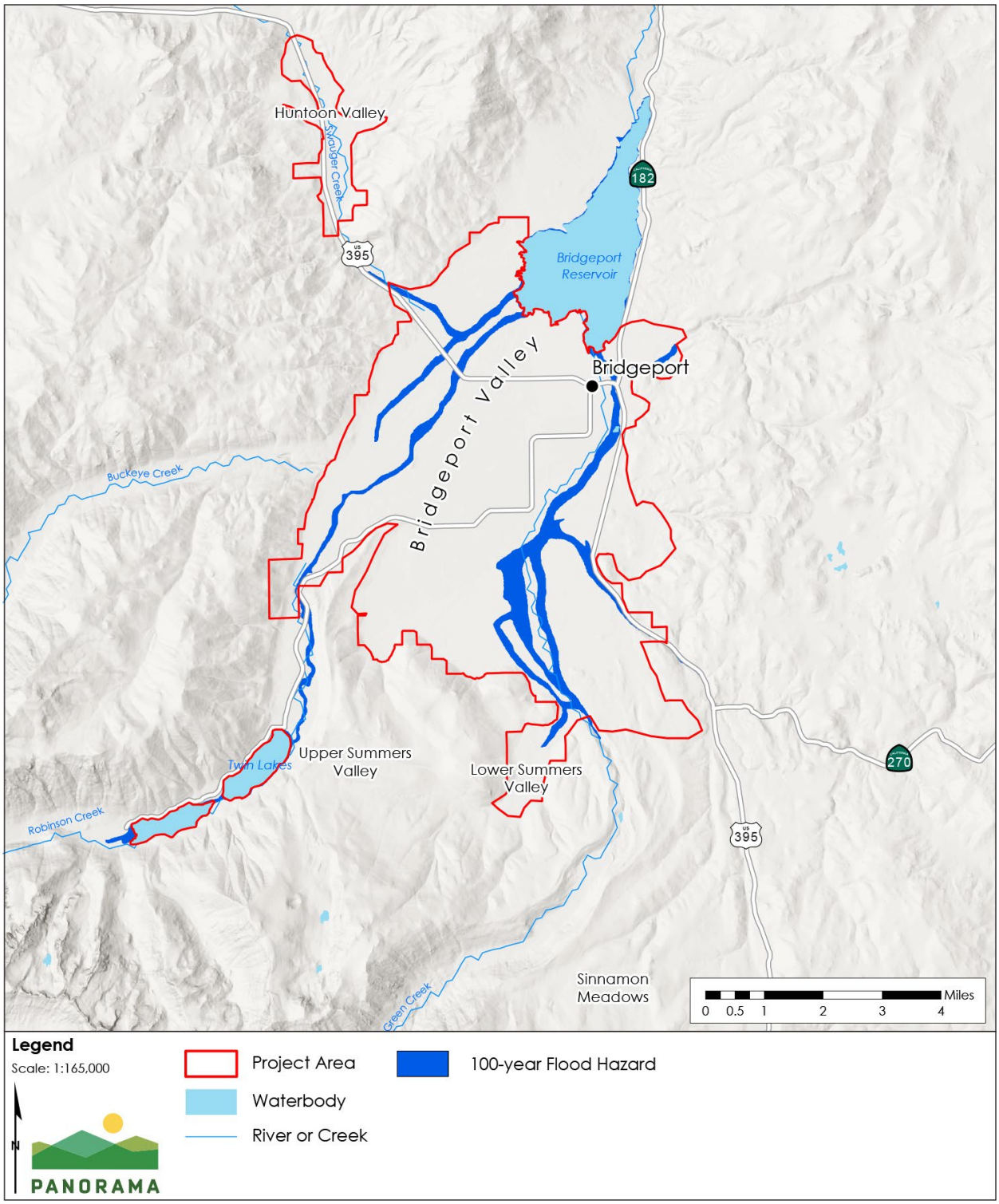
Flooding occurs along the Walker River. Areas within Antelope Valley along West Walker River and Bridgeport Valley along the East Walker River are within 100-year flood hazard zone, shown in Figure 3.1-1 and Figure 3.1-2, respectively (Michael Baker International, 2019).

Figure 3.1-1 Floodplain in the Antelope Valley Area



Sources: (US Geological Survey 2013, U.S. Geological Survey 2016, Tele Atlas North America, Inc. 2018, Federal Emergency Management Agency 2020)

Figure 3.1-2 Floodplain in the Bridgeport Valley Area



Sources: (US Geological Survey 2013, U.S. Geological Survey 2016, Tele Atlas North America, Inc. 2018, Federal Emergency Management Agency 2020)

3.1.4 Regulatory Setting

Federal

Walker River Decree

The Walker River Decree (Final Decree C-125) defines the appropriation of senior water rights in the Walker River Basin. The Decree determines the rights of all water right holders to the Walker River, including generally for each water right a direct diversion rate, priority date, rate of direct diversion, number of irrigated acres, and place of use. The Decree allows that right holders "are entitled to change the manner, means, place or purpose of use, or the point of diversion of the said waters or any thereof in the manner provided by law, so far as they may do so without injury to the rights of other parties" and right holders under the Decree (Final Decree C-125, Article XI).

The Decree establishes a joint system for administering adjudicated water rights to the Walker River. Adjudicated water rights to the Walker River are governed by the principles of the prior appropriation doctrine. Under the prior appropriation doctrine, when the river does not yield enough water to satisfy the demand of all water rights (nearly every year in the Walker River Basin, to some extent), the most junior water right is cut off first, then the next most junior, and so on until there is no shortage.

Under the Decree, there are 45 different priority dates among the adjudicated water rights exercised in the Antelope and Bridgeport Valleys, ranging from 1860 to 1925. Antelope Valley water right holders were granted approximately 0.0159 cubic feet per second (cfs) per acre for an irrigation season of 245 days (March 1 to October 31). Similarly, Bridgeport Valley water right holders were also granted approximately 0.0159 cfs per acre; however, the irrigation season in Bridgeport Valley is limited to 199 days (March 1 to September 15). Section 2.5.3 of the Project Description contains additional details on water rights applicable to the Walker River Basin.

Clean Water Act

The CWA has regulated the discharge of pollutants to waters of the U.S. from any point source since 1972. The CWA gave the USEPA the authority to implement pollution control programs such as setting wastewater standards for industries. It also set water quality standards for surface waters and established the NPDES program to protect water quality.

CWA Section 303(d) requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial uses. Each state must submit an updated list, called the 303(d) list, to the USEPA every two years. In addition to identifying the water bodies that are not supporting beneficial uses, the list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. States are required to prioritize 303(d) water bodies for the development of TMDLs.

State

Water Rights

SWRCB is the only agency with authority to administer water rights in California. Local governments, water district, and the RWQCBs do not administer water rights. SWRCB shares the authority to enforce water right laws with the state courts. Surface water rights comprise most water rights in Antelope and Bridgeport Valleys. The majority of the water is diverted and used pursuant to appropriative rights adjudicated by the U.S. District Court. According to the California Water Code, post-1914 appropriative water rights are permitted, licensed, and regulated by SWRCB. The SWRCB permit process is a discretionary action that is subject to review under CEQA. Refer to Sections 2.5.2 and 2.5.3 for more details regarding California Water Rights and Water Rights in the Mono County Portion of the Walker River Basin, respectively.

Water Quality Control Plans

The primary responsibility for protection of water quality in California rests with the SWRCB and the nine RWQCBs. The SWRCB sets statewide policy for implementing state and federal laws and regulations, and the Regional Boards adopt and implement Water Quality Control Plans to address regional differences in water quality, beneficial uses, and water quality problems associated with human activities. The County is in the Lahontan Regional Water Quality Control Board (LRWQCB). Water quality standards and control measures for surface water and groundwater of the Lahontan Region are contained in the Water Quality Control Plan for the Lahontan Region (Basin Plan). The Basin Plan designates beneficial uses for water bodies and establishes water quality objectives, waste discharge prohibitions, and other implementation measures to protect those beneficial uses. State water quality standards also include a non-degradation Policy. Water quality control measures include TMDLs, which are often, but not always, adopted as Basin Plan amendments.

Sustainable Groundwater Management Act of 2014 (SGMA)

The SGMA is a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention only if necessary, to protect the resource. The SGMA requires the formation of local Groundwater Sustainability Agencies (GSAs) to assess conditions in their local water basins and adopt locally based management plans. The SGMA allows a 20-year time frame for GSAs to implement the plans and achieve long-term groundwater sustainability. It protects existing surface water and groundwater rights and does not impact current drought response measures. The SGMA is designed to ensure that future water supplies are reliable and is part of a larger, comprehensive water plan for California that includes investments in water conservation, water recycling, expanded water storage, safe drinking water, and wetlands and watershed restoration. The legislation lays out a four-step process and timeline for local authorities to achieve sustainable management of groundwater basins and also provides tools, authorities, and deadlines to take the necessary steps to achieve the goal:

- Step 1: Local agencies must form local GSAs within two years.

- Step 2: Agencies in basins deemed high- or medium-priority must adopt GSPs within five to seven years, depending on whether a basin is in critical overdraft.
- Step 3: Local agencies have 20 years to fully implement their plan and achieve the sustainability goal.
- Step 4: The SWRCB may intervene if locals do not form a GSA and/or fail to adopt and implement a GSP.

Groundwater-related transfers were deemed relevant to basin prioritization for the purposes of achieving sustainable groundwater management and were analyzed for the SGMA 2019 Basin Prioritization. Groundwater-related transfers, if unmanaged, could lead to impacts to groundwater levels and interconnected surface water and subsidence, among others. Groundwater-related transfers were considered significant if they exceeded 2,000 acre-feet of groundwater-related transfers or exports from a basin in a single year, which was the threshold utilized in the California Statewide Groundwater Elevation Monitoring (CASGEM) 2014 Basin Prioritization for a basin to be classified as very low priority. The Antelope Valley and Bridgeport Valley Water Basins are classified as very low priority basins under SGMA and are not within a GSA. A GSP has not been prepared for the Antelope or Bridgeport Valley groundwater basins (DWR, 2019).

Local

County

The following policies in the County General Plan are relevant to the management of water resources in the Walker Basin.

GOAL 3. Ensure the availability of adequate surface and groundwater resources to meet existing and future domestic, agricultural, recreational, and natural resource needs in Mono County.

Objective 3.A. Continue to develop a comprehensive countywide water resource database.

Policy 3.A.1. Compile baseline data and assessments on the basic components of watersheds and their hydrologic units, including groundwater basins, within the county.

Action 3.A.1.b. Reference local watershed assessments and other available data for existing conditions and incorporate assessment results into resource management planning.

Action 3.A.1.d. Work with local water providers, LADWP, the Tri-Valley Groundwater Management District, Walker River Irrigation District, Lahontan RWQCB, and

other water and resource management agencies to calculate water budgets[1] and develop water management plans for each watershed in the county.

Action 3.A.1.e. Support research and monitoring to better understand impacts of water-related projects on environmental resources.

Objective 3.D. Protect the Public Trust values of the resources of Mono County. (The Public Trust doctrine recognizes that some types of natural resources are held in trust by government for the benefit of the public. Water resources have been recognized historically as a resource subject to the public trust.)

Policy 3.D.1. Encourage and support agencies responsible for reviewing water rights applications to consider the effects of existing and proposed water diversions upon interests protected by the Public Trust.

Action 3.D.1.a. If necessary, file formal protests with the State Water Resources Control Board when the County determines that granting a water rights application would be harmful to Public Trust values.

Action 3.D.1.b. Require water projects that may impact Public Trust values to avoid or mitigate those potential adverse impacts.

Objective 3.E. Encourage the beneficial use of water resources while protecting local water users and biological resources from the adverse effects of water transfers.

Policy 3.E.4. Evaluate participation in the Walker Basin Restoration Program (WBRP).

Action 3.E.4.a. Pursue funding with the National Fish and Wildlife Foundation (NFWF) to collect and analyze all the information necessary for the County to determine if and how participation in the WBRP may be possible, including full CEQA review to assess the potential effects on various resources, a potential pilot water transaction program, and any necessary General Plan policy updates.

Action 3.E.4.b. Ensure any participation in the WBRP is consistent with General Plan policies, particularly the area plan polices for the Antelope and Bridgeport Valleys, and policies to protect agricultural uses and natural resources.

GOAL 4. Protect the quality of surface and groundwater resources to meet existing and future domestic, agricultural, recreational, and natural resource needs in Mono County.

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[1] A water budget is a model of the relationship between the inputs and outputs of a particular hydrologic unit.

Objective 4.A. To the extent not preempted by State or Federal law, preserve, maintain, and enhance surface and groundwater resources to protect Mono County's water quality and water-dependent resources from the adverse effects of development and degradation of water-dependent resources, including compliance with AB 685.

Policy 4.A.7. Continue to support "no net loss" of wetlands at a regional scale.

Action 4.A.7.b. Continue collaborating with applicable agencies to monitor the status of wetlands, such as annual reporting to the Lahontan Regional Water Quality Control Board.

Sierra Business Council
In collaboration with the LRWQCB and University of California, Davis, the Sierra Business Council has established the Rivers and Ranches Project to monitor water bodies that may be impacted by grazing operations on private lands, and to assist landowners in implementing management practices to reduce pollutant discharges to surface waters from grazing operations. Participating watersheds in the County include the Walker River and the Owens River. Project activities include microbial source tracking and monitoring of enteric pathogens and bacterial indicators in order to identify sources of pollution and collaborating with landowners to provide financial and technical assistance for implementation of sustainable grazing management practices. The program also includes education and outreach for K-12 students in coordination with Future Farmers of America.

3.1.5 Significance Criteria and Methodology

Significance Criteria

For the purposes of this EIR and consistent with Appendix G of the CEQA Guidelines, the conceptual water transaction program is considered to have a significant impact on water resources if it would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
c. 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 additional of impervious surfaces, in a manner that would:
    i. result in substantial erosion or siltation on or off site;
    ii. substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;

iii. 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; or
iv. impede or redirect flood flows;

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Implementation of the conceptual water transaction program would result in increased instream flows during the irrigation season. Increased flows would be limited to the natural creek and river system that are part of the Walker River. The change of instream flow would not use existing or planned stormwater systems. Thus, implementation of the conceptual water transaction program would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (criterion c-iii) nor would it impede or redirect flood flows (criterion c-iv). Implementation of the conceptual water transaction program would not release pollutants due to inundation in a flood hazard, tsunami, or seiche zone as Antelope and Bridgeport Valleys are more than 200 miles from the Pacific Ocean and there is known evidence of seiching in Mono County lakes or reservoirs (criterion d). Based upon the potential beneficial uses of the Basin Plan, the conceptual water transaction program would reduce agricultural water supply due to the potential diversion of water back into Walker River. However, reducing supply would not conflict with beneficial uses because the conceptual water transaction program would not result in the need to treat water to meet the water quality standards to support the beneficial use. In addition, the conceptual water transaction program would not conflict with water quality objectives set forth in the Basin Plan. Implementation of the conceptual water transaction program would not conflict with the Basin Plan. No sustainable groundwater management plan has been adopted for the area; therefore, no conflict with sustainable groundwater management plan would occur (criterion e).

Approach to Analysis

The impact analysis presented in this section considers the impacts of a conceptual WBRP water transaction program in California, potentially significant impacts on water resources that could result from implementation of a WBRP water transaction program, and the effectiveness of the proposed project in avoiding or mitigating significant effects. Temporary leasing of water rights for a year would mimic drought conditions in agricultural areas because the water would be reapplied to the site the subsequent year. Temporary leasing of water for a single year would therefore not have a significant effect on water resources. The impact analysis below focuses on permanent or long-term (2 years or more) acquisition of decreed or storage water rights only. The maximum potential water transfer under permanent water transaction scenarios is presented in Section 2.7.4 of the Project Description. It is assumed that a water transaction of decreed water rights would only transfer 53 percent of the water from any parcel that is involved in the transaction due to the decision made by the SWRCB and the Nevada State

Engineer that the NFWF's exercise of those rights is limited to the consumptive use portion of the rights (approximately 53 percent).[2] It is assumed that water transactions for storage rights would transfer the full water right, as discussed in Section 2.7.4.

3.1.6 Impact Discussion

	Significance Determination of Proposed Project (GP Policies)	Significance Determination of Conceptual Water Transaction Program
Impact Hydrology-1: Would a water transaction program violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (Significance criterion a)	**No Impact**	**Potentially Significant**

Permanent Acquisition of Decreed and Storage Water Rights

Potential water transfers occurring under a conceptual water transaction program could result in permanent acquisition of up to 10,528 acre-feet of decreed water rights that is currently applied to approximately 3,290 acres of agricultural land.[3] Because 47 percent of the water would need to remain on the land for groundwater recharge, the maximum permanent downstream diversion to Walker Lake under the WBRP is approximately 5,580 acre-feet of water annually. A maximum of 10,528 acre-feet of storage water rights could be acquired under the WBRP. Storage water that is diverted is currently used for various agricultural operations in Antelope and Bridgeport valleys.

WBC could either just purchase the water or purchase the farmland with the water rights when acquiring permanent water rights. If the land is purchased by WBC, WBC noted in scoping comment that the land may be leased and remain in agricultural operations; however, agricultural operations would change from irrigated crops or livestock to dryland crops, grazing land, or fallow land. Changes in irrigation practices and pesticide application would occur if decreed water rights are diverted to instream use. The changes in the quantity of irrigation water that is applied to the land could alter the concentration of pollutants associated with leaching and runoff. Because farmers would apply less water to fields with the implementation of the conceptual water transaction program, there would be less potential for leaching of salts and other pollutants. The landowner would also be expected to reduce the application of fertilizers and pesticides if the water rights were diverted for instream use under the WBRP. Reduced application of fertilizers due to the change in agricultural use to grazing or dryland farming similar to the circumstances practiced by WBC on agricultural lands in Nevada

[2] The consumptive use portion of a water right reflects the amount of water that is actually used and consumed by agriculture. When an upstream user appropriates water for irrigation, some portion of the water—the non-consumptive use portion—is not consumed by the crop and returns as runoff to the river, and for another rightsholder's use, downstream.

[3] Assumes two acre-feet per acre of land.

could result in a decrease in concentrations of nitrogen and phosphorus runoff to surface water and leaching to groundwater. As a result, there could be an improvement in water quality because there would be less total runoff and leaching with implementation of the conceptual water transaction program.

In the long term, lands in the project area where water is permanently diverted to instream flow would have reduced water application and would experience drying of vegetation. The existing vegetation density on fallow agricultural lands and areas with grazing and dryland farming practices in Bridgeport and Antelope Valleys provides a context for the expected conditions that would result from implementation of the WBRP conceptual water transaction program. Lands that have been fallowed in Bridgeport Valley and Antelope Valley appear to maintain cover with grassland and sagebrush vegetation; however, the vegetation density is less than in agricultural areas (see Figure 3.1-3 and Figure 3.1-4 for examples of fallow and dryland farming areas in Bridgeport and Antelope Valleys). Reduced vegetation cover would make the land more susceptible to erosion. However, following acquisition of the water rights, WBC would revegetate where needed with active restoration for at least two years to minimize fugitive dust and stabilize soil. Fugitive dust abatement and soil stabilization would protect soil from erosion. Increased sediment transport via erosion would be minimized. As a result, sedimentation and turbidity impacts on water quality are expected to be less than significant. In addition, General Plan policy Action 3.E.4.a requires development of an adaptive management plan to ensure a minimum of 80 percent vegetated cover on lands subject to water transactions.

The diversion of water from agricultural properties to instream flow in the Walker Basin could result in the conversion of wetlands to drier habitats, as described in more detail in Section 3.2: Biology. Wetlands provide important water quality functions including nutrient retention and cycling. The loss of wetland habitats as a result of a conceptual water transaction program could have a significant impact on water quality due to the lost water quality functions associated with the wetlands.

The proposed General Plan policy Action 3.E.4.a requires the development of adaptive management plan with measures to support no net loss of wetlands and avoid, minimize, and/or mitigate water quality impacts. The proposed project policies would therefore avoid or mitigate a potentially significant impact on water quality from a conceptual water transaction program in California.

Proposed Project Impacts

The adoption of General Plan policies and amendments that reduce and mitigate the effects of a conceptual water transaction program would not, themselves, violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. The proposed project (General Plan policies) would have a beneficial impact by protecting water quality and would have no adverse impact.

Figure 3.1-3 Vegetation on Fallow Lands in Bridgeport Valley

Figure 3.1-4 Vegetation in Areas with Grazing and Dryland Farming Practices In Antelope Valley

	Significance Determination of Proposed Project (GP Policies)	Significance Determination of Conceptual Water Transaction Program
Impact Hydrology-2: Would a water transaction program substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the program may impede sustainable groundwater management of the basin? (Significance criterion b)	**No Impact**	**Potentially Significant**

Permanent Acquisition of Decreed Water Rights

The primary source of recharge to the Antelope Valley aquifer is from the West Walker River, both directly from the river and indirectly from irrigation infiltration. The Bridgeport Valley groundwater is recharged from streams, tributaries, and irrigation water. As discussed in Impact Hydrology-1, implementation of the conceptual water transaction program would lead to reduced irrigation; therefore, groundwater recharge from irrigation infiltration would decrease in the project area.

The acquisition and transfer of decreed water rights would require that 47 percent would remain in the irrigation ditches and sloughs to protect downstream agricultural uses and 53 percent of the water could be transferred to instream flow. The 53 percent that would be transferred to instream flow represents the consumptive use portion of the water right that is currently used by crops and vegetation. Because the portion of the water right that would be available for transfer to instream flow is currently used by crops and vegetation and not recharged to the groundwater table, the 53 percent reduction in application of water rights to the land would not affect groundwater recharge.

The Antelope and Bridgeport Valleys are both low-priority basins under SGMA. Because both basins are low priority, there is no requirement to prepare a Groundwater Sustainability Plan for either basin. The landowners in the project area have rights to the underlying groundwater resources under the current regulatory environment. Landowners could potentially increase use of groundwater to replace transferred surface water rights. The increased use of groundwater could have a substantial effect on groundwater supplies and could interfere with the sustainable management of groundwater resources in Antelope and Bridgeport Valleys.

Proposed General Plan policy Action 3.E.4.a requires preparation of an adaptive management plan and prohibits groundwater substitution to maintain baseline conditions or agreed upon conditions. Proposed General Plan policy Action 3.E.4.b requires landowners to relinquish groundwater rights as condition of the water transaction. Impacts on groundwater supplies or recharge and sustainable groundwater management would be less than significant with implementation of the proposed project policies.

Permanent Acquisition of Storage Water Rights

Storage rights that are purchased under the WBRP could be transferred entirely to instream flow in accordance with the decision of the Ninth Circuit Court of Appeals. The full transfer of water rights to instream flow would result in a greater volume of water to Walker River at times when the storage rights are being transferred to instream use. The increased volume of water in

Walker River could result in additional groundwater infiltration on the Walker River. However, the removal of water from the irrigation ditches and canals where it is normally applied would result in reduced water for infiltration across the valley. The reduced groundwater recharge on agricultural properties could potentially impact groundwater supply within Bridgeport and Antelope Valleys. The reduced groundwater recharge from full diversion of the water right could affect sustainable groundwater management in the valley. In addition, as described for the permanent transfer of decreed water rights, use of groundwater supplies to replace the transferred water supplies could substantially impact groundwater supplies and sustainable groundwater management.

As mentioned above, proposed General Plan policy Action 3.E.4.a prohibits water transaction programs that would threaten the sustainability of the groundwater basin and requires development of an adaptive management plan to ensure no groundwater substitution will be used to maintain baseline conditions or agreed upon conditions. General Plan policy Action 3.E.4 b would require landowners to relinquish groundwater rights as a condition of the water transaction. The proposed project would avoid or mitigate impacts of future WBRP water transactions on groundwater supplies or recharge and sustainable groundwater management.

Proposed Project Impacts

The adoption of General Plan policies and amendments that reduce and mitigate the effects of a conceptual water transaction program would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the program may impede sustainable groundwater management of the basin. The proposed project (General Plan policies) would have a beneficial impact by protecting groundwater supplies and sustainable groundwater management and would have no adverse impact.

	Significance Determination of Proposed Project (GP Policies)	Significance Determination of Conceptual Water Transaction Program
Impact Hydrology-3: Would a water transaction program result in substantial erosion or siltation on or off site; or substantially increase flooding on- or off-site? (Significance criteria c[i] and c[ii])	**No Impact**	**Potentially Significant**

Permanent Acquisition of Decreed Water Rights

Flow within the Walker River upstream of the current point of diversion would not change with acquisition and transfer of decreed flow water rights to instream use. Flows in the East and West Walker Rivers downstream of the point of transfer could increase during irrigation season, when the water is being maintained in stream instead of diverted for agricultural use. Of the acquired decreed flow water right, 53 percent of the water rights from a transaction would remain instream for transfer to Walker Lake and 47 percent would be left on the East or West Walker River. Diverting water downstream could increase flows by up to 28 cfs.

As river flow increases, the potential for erosion and greater sedimentation transport also increases. The potential for erosion would increase because the velocity of the flow would

increase, as would the amount of river channel in contact with flowing water. Flows on the East Walker River downstream of Bridgeport Reservoir have been recorded with peak flows ranging from 800 to 1,000 cfs in June and July. On average, flows were around 100 to 250 cfs in late March through late May, with an increase to approximately 310 cfs in mid-June and a steady decrease throughout the year (USGS, 2019). Assuming the changes in flow would be similar in West Walker River. An increase of up to 28 cfs would not create a significant impact to river channels given that the peak flow is between 800 to 1,000 cfs and the increased flow would be ordered for Walker Lake when flows in Walker River are not at their peak.

As described under Impact Hydrology-1 above, soil erosion could increase due to the decrease in vegetation density on fallowed agricultural lands. As described in Impact Hydrology-1, the WBC is expected to revegetate and manage lands subject to water transactions to manage erosion. In addition, proposed General Plan Policy 3.E.4.a would require an adaptive management plan that would avoid, reduce, or mitigate significant impacts from sedimentation by requiring at least 80 percent vegetated cover on lands subject to water transactions.

Areas in both valleys are located in 100-year and 500-year flood hazard zones. Water transfers could increase flows in rivers during the period when water transfers are conveyed downstream. The flow increases would be up to 28 cfs; the additional diversion of water to Walker Lake would not occur during peak flooding. The impact on flood flows would be less than significant.

Permanent Acquisition of Storage Water Rights

Flows within creeks upstream and downstream from the valleys could increase due to increased release of storage water and increased instream flow. Storage water releases occur after the end of the irrigation period, when stream flows are typically lowest. Because of the high peak flows generated by rainfall runoff in the spring, the peak flow from discharge of additional water from storage in the fall would not increase above the peak flow season. The increased river flows would not cause significant erosion.

Proposed Project Impacts

The adoption of General Plan policies and amendments that reduce and mitigate the effects of a conceptual water transaction program would not result in substantial erosion or siltation on or off site or impede or redirect flood flows. The proposed project (General Plan policies) would have a beneficial impact by protecting water quality to avoid substantial siltation and erosion; there would be no adverse impact from adoption of the General Plan policies.

3.1.7 References

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