

# RECLAMATION

*Managing Water in the West*

**Environmental Assessment**

## **Transfer of Base Supply and Central Valley Project Water by Glenn-Colusa Irrigation District to the Colusa Drain Mutual Water Company**

**EA-18-02-NCAO**



**U.S. Department of the Interior  
Bureau of Reclamation**

**April 2018**

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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# Section 1 Introduction

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate the potential for impacts related to Reclamation's consenting to the transfer of up to 45,000 acre-feet (AF) of water per year from Glenn-Colusa Irrigation District (GCID or District) to the Colusa Drain Mutual Water Company (CDMWC or Company; Figure 1) for a five-year term. Transfer requests would be fulfilled with a combination of Base Supply and Central Valley Project (CVP or Project) water, as defined in Contract No. 14-06-200-855A-R-1 (Contract 855A) between GCID and Reclamation. In accordance with the terms of GCID's Contract 855A, GCID must obtain Reclamation's written consent to such transfers. This Environmental Assessment addresses the potential environmental impacts of approval of these transfers occurring between June and September 30 during contract years 2018 through 2022.

## 1.1 Background

Contract 855A between Reclamation and GCID provides for GCID's diversion of both Base Supply and Project Water from the Sacramento River (River) for use within a defined service area. Base Supply is the quantity of surface water established in Articles 3 and 5 of Contract 855A, which may be diverted by GCID from its source of supply from April through October of each year without payment to the United States. Project Water is all surface water diverted, or scheduled to be diverted, each month during the period of April through October of each year by the Contractor from its source of supply, which is in addition to available Base Supply, and for which payment to the United States is due.

Water diverted by GCID and not consumptively used within its service area flows to the Colusa Basin Drain (Drain) from which the Colusa Drain Mutual Water Company (Company) shareholders divert pursuant to their individual water rights for irrigation purposes (Figure 1). Absent the diversions from the Drain by shareholders of the Company, GCID's irrigation return flows, which represent a mixture of Project Water and Base Supply, would reach the River and be used to satisfy the rights of downstream water right holders.

In accordance with the Central Valley Improvement Act, Article 3(e) of Contract 855A provides for the transfer of Base Supply and Project Water, subject to Reclamation's written consent. Therefore, GCID may transfer water to other California water users or water agency, State or Federal agency, Indian Tribe, or private non-profit organization, including other irrigation districts. In conjunction with the agreement or agreements (Transfer Agreement), GCID would provide, for purchase, water to service lands within the Company's service area, as defined in the Company's contract. These lands are outside GCID's boundaries, but within the same sub-basin as GCID, and either contiguous to GCID's boundaries or otherwise conveniently served from the Drain.

The Company was established solely for the purpose of negotiating for a water supply to supplement the existing water rights of farmers served by the Drain in summer months wherein their water rights to Drain waters are deemed by the State Water Resources Control Board

(SWRCB) to be deficient and an infringement on those of the senior downstream water right holders. (See Section 3.2 for detail.) Originally, the sole mechanism by which this was achieved by the Company was through the purchase of Supplemental Supply from Reclamation via the Company's Contract Number 8-07-20-W0693-R-1 (Contract W0693; [https://www.usbr.gov/mp/cvpia/3404c/lt\\_contracts/2004-05\\_foc/2004foc\\_colusa\\_drain\\_11-10-04.pdf](https://www.usbr.gov/mp/cvpia/3404c/lt_contracts/2004-05_foc/2004foc_colusa_drain_11-10-04.pdf)). Exhibits B and C of Contract W0693 identify the crop irrigation requirements and average annual deficiencies of the water rights of the water users along the Drain. Although supplemental supplies were initially purchased from Reclamation under Contract W0693, Article 3. (g) of the Contract recognizes the Company's right to acquire water to satisfy the water right deficiencies set forth in the Contract from sources other than the United States. The Transfer Agreements between GCID and the Drain were later pursued as an alternate available mechanism, spurred by events near the turn of the last century that severely limited water supply available in the Drain.

In the early 1990s, GCID, the primary supplier of water to the Drain through its discharge of irrigation return flows, instituted surface water conservation and recycling strategies, the stimuli for which was two-fold:

- The declaration of Critical Years and associated reduction in water allocations in 1991, 1992 and 1994
- The need for modifications to the fish screen at the Hamilton City pump station, during which time diversions from the River to GCID's service area (and that of other Contractors) were limited by related construction activities and regulatory requirements

GCID's conservation and recycling strategies culminated in a "zero outflow"/100-percent recycling policy on water applied in rice production in its service area, which restricted outflow to the Drain to leakage through the Davis Weir. Drain waters available for purchase by the Company via Contract W0693 were severely diminished. In addition, the reduction in freshwater inputs to the District's service area and the reduced outflow to the Drain from GCID's water recycling strategies resulted in a build-up of salts occurring in soils on crops in the District's and Company's service areas. This salt build-up resulted in an additional reduction in crop productivity in both areas.

Since the 1990's experience, GCID has voluntarily abandoned the zero outflow policy in its water conservation strategies in order to maintain crop productivity in its service area. The Transfer Agreements between the District and the Company provide an opportunity for the Company to purchase water not consumptively used by GCID from the District. This purchase opportunity provides an added financial-based incentive for GCID to allow increased outflow to the Drain. In doing so, the Proposed Action increases the potential (but does not guarantee) that some portion of the full water necessary to meet the Company's shareholder's agricultural demands is available to the Company for diversion.

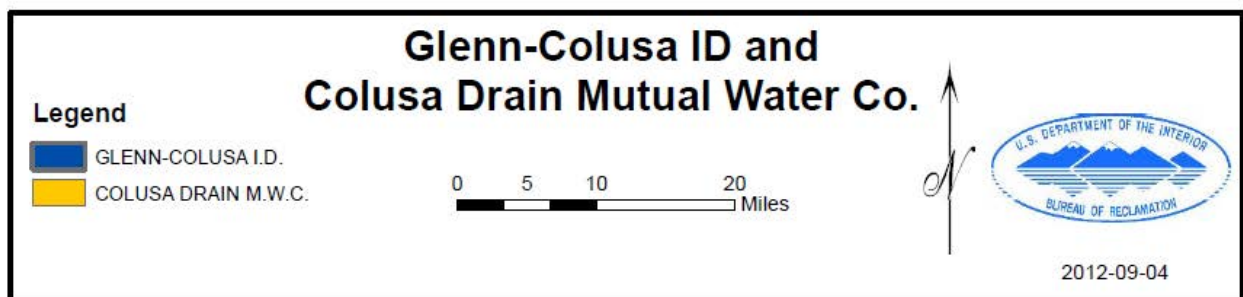
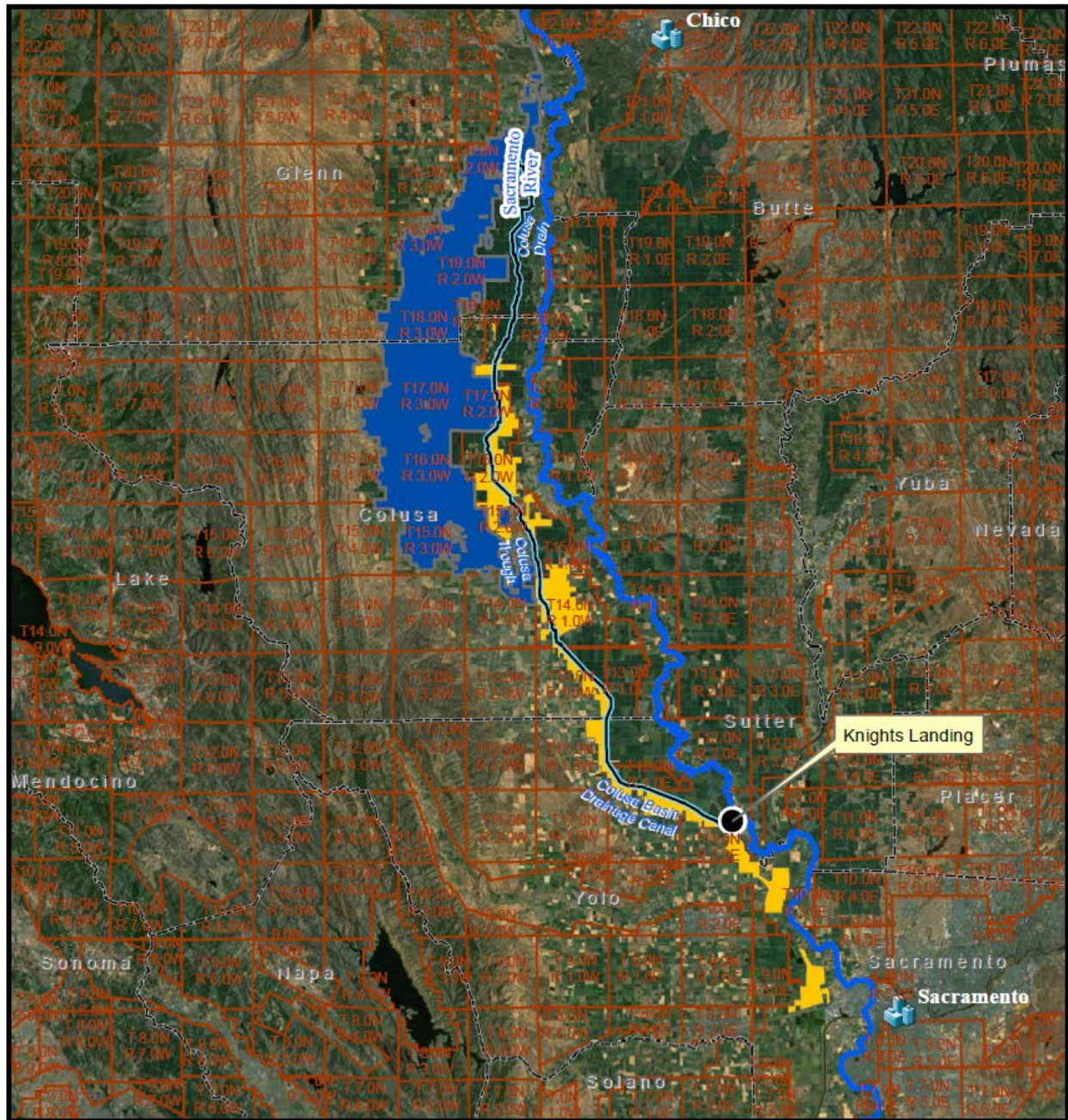


Figure 1. Service Areas of the Colusa Drain MWC and the Glenn-Colusa Irrigation District

## 1.2 Need for the Proposal

The proposed Federal action is for Reclamation to consent to the annual transfer of Base Supply and Project Water from GCID to the Company. Transfer water will be beneficially used to support existing agriculture practices on lands of Company shareholders. Under Contract 855A, GCID is required to obtain Reclamation's prior written consent before it can transfer Base Supply and Project Water pursuant to the proposed Transfer Agreement with the Company.

## 1.3 Resources Not Analyzed in Detail

Reclamation analyzed the affected environment of the Proposed Action and No Action Alternative and has determined that there are no potential direct, indirect, or cumulative effects to the following resources:

- **Cultural Resources:** There would be no impacts to cultural resources under either the No Action Alternative or Proposed Action. Water would continue to be diverted from the Drain through existing infrastructure, where available. No new construction or ground disturbing activities would occur. Only currently irrigated lands would be serviced. These activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1).
- **Air Quality:** There would be no impacts to air quality under either the Proposed Action or No Action Alternative. No construction activities that could generate equipment emissions would occur under either action. Groundwater pumping would continue to be used in the absence of acquired surface water from GCID and other Districts under either the Proposed Action or No Action Alternative. Water would continue to be moved via gravity or electric pumps which would not produce emissions that impact air quality.
- **Global Climate:** Neither the Proposed Action nor the No Action Alternative would involve physical changes to the environment. Greenhouse gas emissions associated with either action are expected to be small because gravity and, to a lesser extent, electrical pumps that can produce carbon dioxide would be used to transport water to lands to be irrigated. While electrical pumps can generate carbon dioxide, the amount would be expected to be minor and at least partially offset by carbon dioxide uptake by crop productivity that would occur. Consequently, neither the Proposed Action nor the No Action Alternative would have a contributing effect toward global climate change.
- **Indian Trust Assets:** No Indian lands, public domain allotments, or other resources that could be considered Indian Trust Assets (ITA) would be affected by the Proposed Action or No Action Alternative. The nearest ITA, associated with the Cachil DeHe Band of Wintun Indians of the Colusa Indian Community, is located along the River, greater than 0.5 mile east of the action area (Attachment 1).
- **Indian Sacred Sites:** Neither the Proposed Action nor the No Action Alternative would limit access to, or ceremonial use of, Indian Sacred Sites on Federal lands by Indian religious practitioners or affect the physical integrity of such sacred sites. Therefore,



there would be no impacts to Indian Sacred Sites from either the Proposed Action or No Action Alternative.

## **1.4 Resources Requiring Further Analysis**

A detailed review was provided for the following resources and considerations:

- Land and Water Resources
- Biological Resources
- Socioeconomic Resources

## Section 2 Alternatives Including the Proposed Action

This EA considers two possible alternatives: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions over the five-year period without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

### 2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not consenting to GCID's transfer of Base Supply and Project Water to the Company via a new Transfer Agreement(s).

### 2.2. Proposed Action

The Proposed Action is to consent to GCID's proposal to the transfer of up to 45,000 AF of water, comprised of up to 30,000 AF of Project Water and up to 15,000 AF of Base Supply water, to the Company each year from June through September, commencing with contract year 2018 and continuing through contract year 2022.

Under each Transfer Agreement made, GCID would inform the Company of the estimated amount of Base Supply and Project Water available for purchase by the Company monthly during the irrigation season, for the year of the agreement. The Proposed Action does not guarantee the availability of water for transfer and is subject to the following conditions:

- Transferred water, and runoff from Company lands, will comply with all Federal, state, local and tribal law, and requirements imposed for protection of the environment and ITAs;
- In any year in which Base Supply is transferred by GCID, the cumulative number of acres which can be irrigated by GCID, both inside and outside its service area, will be limited to a historical maximum of 126,198 acres.
- The water would not be used to place untilled (within three years) or new lands into agricultural production, or to convert undeveloped land to other uses;
- The existing drainage facilities are adequate for the transferred water;
- The Proposed Action will not interfere with the normal CVP operations;
- The Proposed Action will not require the construction of any new water conveyance, pumping, diversion, recharge, storage or recovery facilities;
- The Company will be prohibited from selling, exchanging, or otherwise disposing of the transferred water, except to a water user within the Company's Service Area, without the prior written consent of Reclamation; and
- This transfer action will be subject to California Environmental Quality Act (CEQA) review.

## Section 3 Affected Environment & Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action alternatives.

### 3.1 Land and Water Resources

#### Affected Environment

##### *Glenn-Colusa Irrigation District*

GCID is a public agency located in Glenn and Colusa Counties, California and is the largest water district in the Sacramento Valley. Located approximately 80 miles north of Sacramento, the District boundaries cover approximately 175,000 acres (Figure 1). Of this total, approximately 153,000 acres are deeded property, and, of these, 138,800 are irrigable. An additional 22,500 acres of US Fish and Wildlife Service (FWS) refuge land and 5,000 acres of habitat on privately owned land exist within the service area of the District. Rice is the predominant crop, although irrigation supports others, including nuts, tomatoes, vine seeds, cotton, alfalfa, and irrigated pasture.

GCID holds a pre-1914 claim of water right to the natural flow of the River and has a Settlement Contract with the United States for up to 720,000 AF of Base Supply and 105,000 AF of Project Water. In Critical Years, as defined in Contract 855A, GCID's Settlement Contract supply is reduced by 25%, to a total of 618,750 AF. Project Water is typically diverted in July and August. In addition to surface water supply, groundwater wells within GCID's service area can provide up to 85,000 AF of water, of which 60,000 AF may be acquired from private wells and the remainder from GCID wells.

In support of its water needs, GCID diverts up to 3,000 cubic feet per second of water at the Hamilton City pump station located approximately 100 miles north of Sacramento. Diverted flow passes through fish screens and is pumped into GCID's main canal. From the main canal, water flows through a variety of irrigation canals for eventual use on irrigable lands. Return flow from these irrigable lands eventually drain to the Colusa Drain for eventual reuse by downstream water users, including the Company. GCID also provides water to the boundaries of refuges located within its service area. Water diverted to support these refuges is predominantly diverted after September when water is no longer diverted to support agriculture.

##### *Colusa Drain Mutual Water Company*

The Company is located in the central portion of the Sacramento Valley, to the west of the River. The boundaries of the Company encompass approximately 57,500 total acres within Glenn, Colusa, and Yolo Counties, extending from approximately eight miles northeast of the town of Willows to the Yolo Causeway near West Sacramento (Figure 1). These boundaries are defined as those lands which divert or may divert water from the Colusa Drain for irrigation purposes and that are not within the pre-existing boundaries of Districts. As with any district, water

demands of the Company fluctuate from year to year, based on cropping decisions made independently by farmers. Company shareholders have purchased shares representing about 46,500 share acres of irrigable land in the Company's service area boundaries. Company shareholders typically use water orders to irrigate lands planted to rice. This trend is particularly true below the Davis Weir, as demonstrated in Table 1.

**Table 1. Cropping Patterns in Company's Service Area**

Location in Company's Service Area	Shares Purchased (Acres)	2016 Water Orders		2017 Water Orders	
		Rice (Acres)	All Crops Planted (Acres)	Rice (Acres)	All Crops Planted (Acres)
Above Davis Weir	19,579	9,468	9,939	7,184	7,185
Below Davis Weir	26,874	5,058	9,945	9,988	12,645
<b>Totals</b>	<b>46,453</b>	<b>14,526</b>	<b>19,884</b>	<b>17,172</b>	<b>19,830</b>

*Source: G. Kienlen, per. communication*

The surface water supply available to the Company consists solely of the Colusa Drain, an approximate 70-mile long earthen drainage channel beginning along the River near Willows, California. From Willows, the Drain extends south, reconnecting with the River at the Knights Landing Outfall Gates and/or flows to the Yolo Bypass via the Knights Landing Ridge Cut. Water in the Colusa Drain consists primarily of tailwater from agricultural diversions of Districts upstream of the Drain, and, to a lesser extent, seasonal contributions from rainfall and runoff on lands west of the Sacramento River.

During the irrigation season, water in the Drain consists primarily of tailwater from agricultural diversion of Districts along the River upstream of the Drain. The Company's service area relies entirely on waters in the Colusa Drain as a water source. Continued agricultural production in the Company's service area is therefore dependent on continued agricultural practices upstream of the Drain. Water use upstream of the Drain is largely determined by hydrologic conditions and related land and water management decisions (e.g. water allocations, conservation strategies). As the largest agricultural district in the region, GCID is the largest single contributor of return flow to the Drain. In drought years wherein allocations/river diversions have been reduced and GCID and other upstream Districts have reduced irrigated acreage and/or instituted no spill policies in rice production, flow in the Drain has been minimal. In addition, the water within the Drain is continually reused as it flows from the northern portion to the southern portion of the Company's service area. Limited freshwater inputs and re-use typically increases salinity of the Drain's water as it flows.

The Company's shareholders' rights to divert waters in the Drain for agricultural application are junior relative to the water rights of downstream CVP Contractors for Project Water. In the 1960's and 70's, the SWRCB determined that, at times during the summer months when tailwater in the Drain consists primarily of Project Water originally diverted from the River by CVP Contractors, the Company's water rights are deficient to allow its diversions; CVP Contractors along the River south of the Drain have the primary claim to the water where there is a conflict between the Company's shareholders' needs and those of these "downstream" CVP Contractors. Contract W0693 was negotiated subsequent to the SWRCB's decision to provide a

Supplemental Supply that allows the Company's shareholders to continue to divert water when their water rights are otherwise deemed to be deficient. Drain water made available by this mechanism is subject to repayment for water replacement, Restoration and other CVPIA fees and is intended to bridge a historical 35% gap in individual water rights necessary to support existing crops (primarily rice) in the Company's service area (Kienlen per. communication).

In addition to Contract W0693 and the use of groundwater from private wells, alternate or supplemental means and mechanisms by which irrigation supply has been made available to Company shareholders have included other transfer agreements between the Company and other willing sellers/ upstream districts. Groundwater is typically not a large component of the water supply in the Company's service area due to low availability. No transfer agreements between the Company and other districts are currently in place.

### ***Prior Water Transfer Agreements between the District and Company***

Changes in the place of use under a pre-1914 water right are not subject to approval by the SWRCB, and are permitted under California law, provided other legal users of the water, or the environment, are not injured. To ensure such injuries do not occur, in years when GCID transfers Base Supply to the Company, the total number of acres which can be irrigated by GCID with water diverted from the Sacramento River under Contract 855A is limited to a total of not more than 126,918 acres. This acreage limitation is inclusive of all acreage irrigated within GCID's service area, acreage irrigated with Base Supply under GCID's transfer agreement with the Company, and all contiguous lands irrigated with Base Supply under GCID's In-Basin Water Transfer Program. If GCID irrigates more land than 126,918 acres, no Base Supply is available for transfer.

Reclamation has consented to water transfers under the terms of Contract 885A in intervals of one to six-years since 1999 (Table 1). Since the time of the original consent in 1999, Reclamation's consent has resulted in the transfer of approximately 523,500 AF of water from GCID to CDMWC (Table 1). Overall, the majority of the water transferred (63%) has been Project Water. During the years of 2009 through 2015, two to five times more Project Water than Base Supply was transferred.

Transfer amounts have ranged from approximately 9,500 to 42,000 AF per year. Two of the years (2014 and 2015) within the latest five-year consent term (2013-2017) were Critical Years, as defined in GCID's Sacramento River Settlement Contract, yet, more than 65,000 AF less water was transferred pursuant to the transfer agreements between GCID and the Company during this term than the previous (six-year) consent term (Table 1). These records support the statement that the transfer program is a self-regulating mechanism; the transferor District's own water needs prevent over-use of transfers in the Critical Years for which the transfers have the most utility.

**Table 2. Water Transfers from GCID to CDMWC**

<b>Year</b>	<b>Base Supply</b>	<b>Project Water</b>	<b>Total</b>
1999	13,904	10,596	24,500
2000	8,064	15,000	23,064
2001	4,546	15,000	19,546
2002	14,322	7,780	22,102
2003	7,312	15,000	22,312
2004	11,454	14,999	26,453
6-Yr.Consent Term	59,602	78,375	137,977
2005	15,000	13,216	28,216
2006	13,626	14,389	28,015
2007	12,700	17,679	30,379
2008	15,000	16,235	31,235
2009	12,603	29,295	41,898
2010	28,695	24,262	32,957
6-Yr. Consent Term	77,624	115,076	192,700
2011	8,414	24,466	32,880
2012	6,382	26,859	33,241
2013	5,705	29,851	35,556
2014	3,941	5,461	9,402
2015	2,851	14,004	16,855
2016	15,013	19,652	34,665
2017	15,998	14,283	30,281
5-Yr Term	43,508	83,251	126,759
<b>Total All Terms</b>	<b>195,530</b>	<b>328,027</b>	<b>523,557</b>

## **Environmental Consequences**

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

Under the No Action Alternative, the Company would fill water orders using the currently established mechanisms: the shareholder's individual water rights and Contract W0693 as a supplement to those water rights, when needed. Although GCID exercises reasonable water management strategies, operations require outflow to the Drain to retain control of water salinity within the GCID service area. Therefore, Drain water supply is anticipated to be sufficient to meet the irrigation needs of the Company shareholders (G. Kienlen, per. communication). The amount of supply available would fluctuate from year to year, based on the usage of upstream Districts, but the needs of these upstream Districts and the Company shareholders would remain consistent in proportion. Cropping decisions would continue to be made annually by Company shareholders, independent of the proposal, with consideration for production costs and economy of scale, as further discussed in Section 3.3. For these reasons, land use and crop patterns are anticipated to remain consistent with existing conditions under the No Action Alternative.

The physical source of any surface water component of the No Action Alternative (i.e. irrigation return flows from upstream districts) is the same as existing conditions and the Proposed Action. This, combined with the lack of significant change in land use or crop type, means that the use of pesticides or fertilizers is expected to remain the same as the existing condition. The use of groundwater from private wells is not anticipated to be a significant part of the water supply; there would be no change in naturally-occurring groundwater contaminants in irrigation water due to the No Action Alternative. The quality of the water used for irrigation in the Company's service area and the quality of return flow to the River is therefore expected to be the same as the existing condition.

In summary, no overall effect on the quantity or quality of land or water resources, or the use of these resources, is anticipated from the No Action Alternative.

### ***Proposed Action***

A Transfer Agreement(s) established under the Proposed Action would provide an additional mechanism by which to supply water to the Company shareholders, which would improve flexibility in contract options for the Company. Transfer Agreements also provide a financial incentive to GCID to forebear consumptive use of an adequate amount of water to fulfill the Company shareholder's irrigation needs. However, a significant change in the amount of water available in the Drain, due to GCID's forbearance under this scenario, is not anticipated in comparison to the No Action Alternative, based on effects from use of prior Transfer Agreements

The considerations expressed in Section 2.2 include that, among other protections, any water transfer agreement established under the Proposed Action in which the supply transferred originates from Base Supply will not increase the irrigated acreage in the Company's service area. Further, any CVP water transferred would have been accounted for in Reclamation's allocation to GCID and/or GCID's existing water rights prior to its conveyance to GCID. There would be no increase in CVP supply provided to the Company or the amount of water that could be diverted from the River as a result of the Proposed Action. Therefore, no related changes in cropping patterns or land use, CVP operations or increase in competition for irrigation water, are expected to result from the Proposed Action. It is expected that the acreage that would receive transfer water under the Transfer Agreement(s) would continue to be planted primarily to rice (G. Kienlen, per. communication).

An increase in conveyance of irrigation return flow to the Drain, beyond the minimum required to sustain the productivity of crops in GCID's service area, may occur under the Proposed Action. Therefore, a slight reduction in the need for groundwater use in the Company's service is a potential under the Proposed Action in instances when transfers occur. In instances when enough supplemental drain water is provided to the Company through the Transfer Agreements to produce a flushing effect, the salinity of Drain water and applied irrigation water would be lower than under the No Action Alternative. A favorable response in crop productivity may occur in such instances. Overall, no appreciable change in the flow of the Drain or changes in Drain water salinity and crop productivity are anticipated from the Proposed Action due to the relatively small contribution of groundwater to irrigation supply.

No appreciable increase in return flow to the River would occur. For illustration purposes, if the full 45,000 AF is transferred evenly over the June through September period, the Proposed Action would add about 189 cfs to the flow of the Drain in comparison to conditions in which no such transfer occurs. This flow change does not account for probable losses from the Drain due to evapo-transpiration and general channel loss, much less the diversions from the Drain to Company service area that are the impetus for the water transfer(s). Still, this level of contributions of flow entering the River as return flow would be very small compared to flow in the mainstem.

There would be no new construction or excavation activities associated with the Proposed Action that could result in losses of sediment or other surface water contaminants; transfer water would be conveyed through existing facilities. No change in the quality of River water from return flow is anticipated from the Proposed Action; discharges to the Drain are and would continue to be regulated for water quality by state's Irrigated Lands Program, as in the No Action Alternative.

In summary, no effect on the quantity or quality of land or water resources or associated use of these resources, is anticipated from the Proposed Action.

## 3.2 Biological Resources

### Affected Environment

Official lists of Federally-listed Candidate, Threatened, and Endangered species that may occur within or near the Service Areas of GCID and the Company, and Knights Landing, where return water re-enters the River, were generated on February 20, 2018 by accessing the U.S. Fish and Wildlife Service's (Service) Sacramento and San Francisco Bay-Delta Office's databases through the Information for Planning and Conservation (IPaC) website at <https://ecos.fws.gov/ipac/>. The IPaC reports were generated using a conservative outline of the action area. The lists represent species that may occur in affected areas of Glenn, Colusa, and Yolo counties, and were used to determine the effects of the Proposed Action and No Action Alternative and a summary of rationale supporting the determinations (Table 3). Information obtained from the IPaC reports was refined using habitat information obtained from the Service's Environmental Conservation Online System (ECOS) webpage (<https://ecos.fws.gov/ecp/>) and species occurrences documented in the California Natural Diversity Database (CNDDDB; <https://www.wildlife.ca.gov/data/cnddb/maps-and-data>).

Special-status species reported on the species lists that have no potential to be present in the action area, either due to lack of suitable habitat and/or because the species' range does not include the action area, include the: California red-legged frog (*Rana draytonii*), Northern spotted owl (*Strix occidentalis caurina*), Delta green ground beetle (*Elaphrus viridis*) and Butte County meadowfoam (*Limnanthes floccosa ssp. Californica*). The remainder of the species listed in Table 3 are known or believed to occur in the action area.

Wildlife refuges are located within GCID's service area. The action area also lies within the Colusa Basin Population and Recovery Unit for the giant garter snake (GGS), a species listed as



Threatened under ESA Section 7 for which Critical Habitat has not been established (Service 2017). As indicated in the Recovery Plan for the GGS, “rice fields and the supporting infrastructure can provide habitat for robust populations of the giant garter snake while the rice fields are active. During periods of crop rotation, the inactive or dry crop fields may provide some level of connectivity between perennial wetlands by keeping key irrigation canals full.”

**Table 3. Federal Status Species Potentially Found in the Proposed Action Area**

Common Name	Scientific Name	Status	Effects	Potential for Occurrence in Action Area and Habitat Requirements
<b>Amphibians / Reptiles</b>				
California red-legged frog	<i>Rana draytonii</i>	T, X	NE (No Effect)	<b>Absent.</b> Species extirpated from Sacramento River Valley floor/vicinity of the Proposed Action area. Requires riparian and upland dispersal habitats with breeding ponds or pools. Designated Critical Habitat is outside the action area.
California tiger salamander (Central CA DPS)	<i>Ambystoma californiense</i>	T, X	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn, and Yolo counties. Requires burrows in grassland, savanna or open woodland habitats with breeding pond or pools.
giant garter snake	<i>Thamnophis gigas</i>	T	NE	<b>Present.</b> Occurs in Colusa, Glenn, and Yolo counties. Habitat consists of rice fields or managed marshes with emergent wetland vegetation for cover and foraging, grassy banks for basking and upland burrows for refuge in inactive season. No Critical Habitat established.
<b>Birds</b>				
yellow-billed cuckoo	<i>Coccyzus americanus</i>	T, XP	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn, and Yolo counties. Habitat consists of largely unsegmented tracts of riparian forest with willows for nesting and Cottonwoods for foraging.
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	T, X	NE	<b>Possible.</b> Current species range includes small portion of CDMWC in Yolo County, west of Sacramento. Habitat consists of barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds. Designated Critical Habitat is outside the action area.
Northern spotted owl	<i>Strix occidentalis caurina</i>	T, X	NE	<b>Absent.</b> Known or believed to occur in Colusa, Glenn and Yolo Counties. Habitat consists of largely unfragmented forests with moderate to high canopy - typically old growth - with snags and hollows. Designated Critical Habitat is outside the action area.

Common Name	Scientific Name	Status	Effects	Potential for Occurrence in Action Area and Habitat Requirements
<b>Birds, Cont.</b>				
least Bell's vireo	<i>Vireo bellii pusillus</i>	E, X	NE	<b>Possible.</b> Current species range includes small portion of CDMWC in Yolo County, west of Sacramento. Habitat consists of dense brush, streamside thickets, or scattered cover and hedgerows in cultivated areas. Designated Critical Habitat is outside the action area.
<b>Fish</b>				
Delta smelt	<i>Hypomesus transpacificus</i>	T, X	NE	<b>Possible.</b> Current species range includes small portion of CDMWC in Yolo County, west of Sacramento. Habitat consists of open waters of bays, tidal rivers, channels, and sloughs, with salinity of about 2 ppt, adequate freshwater flow to transport young to, and maintain, rearing habitat, and dense zooplankton. Post-breeding populations are concentrated in the lower Delta and upper Suisun Bay. Designated Critical Habitat is outside action area.
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	NMFS T, X	NE	<b>Possible.</b> Habitat consists of coastal marine waters, estuaries, and large rivers, including the Sacramento up to Keswick Dam. Species ascends rivers to spawn. Designated Critical Habitat for the Northern CA DPS intersects portions of the Districts' service areas (Tule Canal to the south, Stony Creek to north).
Chinook salmon - Various Populations	<i>Oncorhynchus tshawytscha</i>	T, X	NE	<b>Possible.</b> Habitat consists of coastal marine waters, estuaries, and large rivers, including the Sacramento up to Keswick Dam. Species ascends rivers to spawn. Designated Critical Habitat for the California Coastal ESU and Central Valley spring-run ESU intersects portions of the Districts' service areas (Tule Canal to the south, Stony Creek to north).
green sturgeon	<i>Acipenser medirostris</i>	NMFS - T	NE	<b>Possible.</b> Habitat consists of coastal marine waters, estuaries, and the lower reaches of large rivers, including the Sacramento. Species ascends rivers to spawn. Specific spawning and rearing habitats are poorly known. No Critical Habitat established.
<b>Invertebrates</b>				
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E, X	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn, and Yolo counties. Habitat consists of large, clay-bottomed vernal pool playas and lakes (in grasslands) with deep, turbid, slightly alkaline water. Designated Critical Habitat is outside the action area.

Common Name	Scientific Name	Status	Effects	Potential for Occurrence in Action Area and Habitat Requirements
<b>Invertebrates, Cont.</b>				
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T, X	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn and Yolo Counties. Habitat consists of vernal pools and similar ephemeral wetlands, most commonly grassed or mud bottomed pools or basalt flow depression pools in unplowed grasslands. May also inhabit alkali pools, ephemeral drainages, stock ponds, roadside ditches, vernal swales, and rock outcrop pools. Designated Critical Habitat is outside the action area.
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T, X	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn and Yolo Counties. Habitat consists of red or blue elderberry trees and shrubs, with stems greater than one-inch diameter at ground level, along riparian woodlands and upland terraces. Designated Critical Habitat is outside the action area.
Delta green ground beetle	<i>Elaphrus viridis</i>	T, X	NE	<b>Absent.</b> Species not known or believed to occur in Colusa, Glenn or Yolo Counties. Habitat consists of margins of vernal pools with low-growing vegetation. Designated Critical Habitat is outside the action area.
vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E, X	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn, and Yolo counties. Habitat consists of vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. No conversion of habitat, land use changes, or construction of new facilities, would occur because of the action. Designated Critical Habitat is outside the action area.
<b>Plants</b>				
Hoover's spurge	<i>Chamaesyce hooveri</i>	T, X	NE	<b>Possible.</b> Known or believed to occur in Colusa and Glenn counties. Habitat consists of deep vernal pools along eastern edge of the Central Valley. Designated Critical Habitat is outside the action area.
palmate-bracted bird's-beak	<i>Chloropyron palmatum</i>	E	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn and Yolo counties. Habitat consists of alkaline soils of valley lowlands. No Critical Habitat established.
Butte County (Shippee) meadowfoam	<i>Limnanthes floccosa ssp. californica</i>	E	NE	<b>Absent.</b> Known or believed to occur in portions of Glenn County east of the action area and the Sacramento River. No Critical Habitat established.
Colusa grass	<i>Neostapfia colusana</i>	T, X	NE	<b>Possible.</b> Known or believed to occur in Colusa, Glenn and Yolo counties. Habitat consists of Northern Claypan and Northern Hardpan vernal pools within rolling grasslands on the rim of alkaline basins in the Sacramento Valley and in the beds of intermittent streams and in artificial ponds. Designated Critical Habitat is outside the action area.

Common Name	Scientific Name	Status	Effects	Potential for Occurrence in Action Area and Habitat Requirements
<b>Plants, Cont.</b>				
hairy Orcutt grass	<i>Orcuttia pilosa</i>	E, X	NE	<b>Possible.</b> Known or believed to occur in Glenn and Colusa Counties. Occurs in vernal pools along the eastern side of the Central Valley. Designated Critical Habitat is outside the action area.
slender Orcutt grass	<i>Orcuttia tenuis</i>	T, X	NE	<b>Possible.</b> Known or believed to be in Glenn County. Occurs in vernal pools with a very well developed soil profile (clays that shrink and swell). Designated Critical Habitat is outside the action area.
Keck's checker-mallow (checkerbloom)	<i>Sidalcea keckii</i>	E, X	NE	<b>Possible.</b> Known or believed to be in Colusa and Yolo counties. Habitat consists of grassy slopes from 120 to 425 m elevation. Designated Critical Habitat is outside the action area.
Greene's tuctoria	<i>Tuctoria greenei</i>	E, X	NE	<b>Possible.</b> Known or believed to occur in Glenn and Colusa counties: the North of Delta Refuges, in particular. Habitat consists of dried vernal pools on both low and high terraces within grassland communities, or, rarely, pine forest. Designated Critical Habitat is outside the action area.
<b>Key:</b>				
(E) Endangered - Listed as being in danger of extinction				
(T) Threatened - Listed as likely to become endangered within the foreseeable future				
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration (NOAA) - National Marine Fisheries Service				
(X) Critical Habitat is designated for this species				
(XP) Critical Habitat is proposed for this species				
(DPS) Distinct-population segment, designated by the Service				
(ESU) Evolutionary Significant Unit, designated by NOAA				

## Environmental Consequences

### **No Action Alternative**

As previously indicated, no overall effect on the quantity or quality of land or water resources, or the use of these resources, is anticipated from the No Action Alternative. Therefore, no effects to any species relying on water supply for the maintenance of their habitat are anticipated as a result of the No Action Alternative. Likewise, there would be no physical disturbances or land use or cropping pattern changes attributable to the No Action Alternative that would affect species or their habitat. The majority of irrigated lands within the Company's service area would continue to be planted to rice, which functions as habitat for GGS and migratory birds, under either alternative.

### ***Proposed Action***

The Proposed Action does not guarantee the transfer of water from the District to the Company, and, although the zero outflow policy has been abandoned for salinity control, GCID continues to exercise reasonable conservation strategies in its operations. However, under the Transfer Agreements, the District may forebear consumptive use of an adequate amount of water to fulfill the Company shareholder's irrigation needs. As previously indicated, this is not anticipated to be a volume of water significant enough to affect the quality of land or water resources in the action area. Therefore, no effects to any species relying on water supply for the maintenance of their habitat are anticipated as a result of the Proposed Action. This determination includes the refuge habitat located in GCID's service area, particularly, as the timing of any transfers, which would occur during the agricultural irrigation season, is different from the timing of the conveyance to the refuges. The majority of water conveyed to support the refuges is called on after the Company slows down or ceases its diversions from the Drain.

Any water transferred would be conveyed through existing diversion points and facilities for use on established agricultural lands. As with the No Action Alternative, there would be no conversion of habitat, land use changes, or disturbances related to the construction of new facilities that could affect species or their habitat in the action area which would occur as a result of the Proposed Action. The majority of irrigated lands within the Company's service area would continue to be planted to rice that functions as GGS and migratory bird habitat at the same rates planted in recent history. Federally-protected species, as identified in Table 3, are not expected to be negatively affected by transfers for the aforementioned reasons. Likewise, although Critical Habitat for some species protected under ESA Section 7 has been established in portions of the action area, Reclamation has determined that there would be no effect to any species' Critical Habitat as a result of transfers associated with the Proposed Action. Fish species, as an example, would not be affected by water transfers because there would be no significant changes to the quantity or quality of flow in the Sacramento River at either the point of diversion or return.

## **3.3 Socioeconomic Resources and Environmental Justice**

### **Affected Environment**

The Central Valley's agricultural industry significantly contributes to the overall economic stability of the region, state and country via the planting, harvest and sale of most California's food crops, which constitute about 1/2 of the nation's produce. In total, California's agricultural industry generates approximately \$46B in annual revenue (CDFA 2018). Stressors on the success of the industry include fluctuating market demand, insect infestation, increased fuel and power costs, and changing hydrologic conditions that cause decreased water availability, increased competition for water and associated increases in water costs.

Executive Order 12898 (February 11, 1994) mandates Federal agencies to identify and address disproportionately-high and adverse human health and environmental effects of its programs, policies, and activities on minority and low-income populations. The agricultural labor force

may be considered such a population in the event that these workers do not have an alternate means of supplementing their seasonal income.

## **Environmental Consequences**

### ***No Action***

At times when the Company stakeholders' water rights are inadequate to meet irrigation needs, water diverted from the Drain is considered Project Water subject to reimbursement under the terms of Contract W0693. These times are limited to summer months (June through September) when most, if not all, of the flows in the Colusa Drain are deemed to be comprised of irrigation return flows from upstream Sacramento River CVP diversions, including those of GCID. The reimbursement process protects the interests of both downstream senior water right holders along the River below its confluence with the Drain, and those in the Sacramento–San Joaquin Delta, one of which is the United States. During these times, under the No Action Alternative, the Company's only mechanism to purchase supplemental supply is Contract W0693, under which only Project Water is available for purchase. Depending on the amount of Base Supply that may be available for purchase under the Proposed Action (via GCID's forbearance from reusing the tail water in its own service area), the price of purchasing water via Contract W0693 may be considerably higher under the No Action Alternative. Obtaining supply from Contract W0693 would likely increase the cost of agricultural production on the lands served by the Company.

Increased costs associated with the purchase of water under the No Action Alternative could reduce monies available for labor and farm supplies locally. In some instances, some farmers may choose not to plant due to a reduced economy of scale and diminishing returns in which the cost and effort involved with planting is not justified by the potential profit margin. However, cropping decisions are also made annually on a larger scale independent of the action based on forecasted market prices and other variables influencing production costs, as water is not the greatest of these costs (G. Kienlen, per. communication). Therefore, although the effects of the action are predominantly economic (and localized due to the relatively small size of the Company's service area), the proportion of the effects resulting from the No Action Alternative would be indecipherable from those that are not. Likewise, the economic effects on the agricultural labor force as a disadvantaged community are unknown.

### ***Proposed Action***

Water transfers have occurred under agreements approved by the Proposed Action for nearly 20 years. Implementation of the Proposed Action would allow the continued opportunity to provide a supplemental contractual mechanism by which surface water supply could be made available to the Company's Service Area to support continued farming practices on existing agricultural land at current levels.

Although the same effects could occur under the Proposed Action as under the No Action Alternative, the improved contractual flexibility offered by the Proposed Action reduces the likelihood of negative economic effects related to the decision. The cost of water for the Company via this mechanism is anticipated to be about half of the cost of water purchased under Contract W0693. For these reasons, the Proposed Action is considered superior in terms of

economic viability for the farmers within the Company as well as GCID. However, as with the No Action Alternative, the economic effects of the Proposed Action are not anticipated to be significant or far reaching and indecipherable with respect to the effects of cropping decisions made annually independent of the action. Likewise, the economic effects on disadvantaged communities are unknown.

### **3.4 Cumulative Effects**

According to the CEQ regulations for implementing the procedural provision of NEPA, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of the agency (Federal or non –Federal ) or person undertakes such other actions*. Cumulative effects can result from individually minor but collectively significant actions taking place over a period do time.

The Proposed Action will not result in any additions to irrigated lands or otherwise induce land or water use changes. Rather, the intended effect is to maintain current land use and prevent deterioration of existing agricultural practices; therefore, there are no anticipated cumulative effects from the Proposed Action.

## **Section 4 Consultation and Coordination**

In consideration of the lack of significant impacts identified from the Proposed Action, no consultation or coordination with other Federal agencies were performed.

### **4.1 Public Review Period**

Reclamation made the draft EA available for a 7-day public review, from April 20 through April 27, 2018. No comments were received.



## Section 5 References

Bureau of Reclamation (Reclamation). 1999. Finding of No Significant Impact/ Environmental Assessment. Transfer of Base Supply and Central Valley Project Water by Glenn-Colusa Irrigation District to Parcels in Colusa Drain Mutual Water Company. Northern California Area Office.

Bureau of Reclamation (Reclamation). 2005. Consent for Long-Term Transfer of Base Supply Water and Central Valley Project Water to Colusa Drain Mutual Water Company by Glenn-Colusa Irrigation District Under Sacramento River Settlement Contract No. 14-06-200-855A-R-1. Letter. Kirk C. Rogers, Regional Director. 22 pp.

California Department of Food and Agriculture Production Statistics webpage. 2018. Accessed April 28, 2018. <https://www.cdfa.ca.gov/statistics/>

Gary Kienlen, MBK Engineers, Sacramento, CA

U.S. Fish and Wildlife Service (Service). 2017. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*) U.S. Fish and Wildlife Service. Region 8. September 28, 2017.

# Attachment 1. Indian Trust Asset Review



Simon, Megan <msimon@usbr.gov>

## ITA Review - GCID to CDMWC 5-Year Transfer

1 message

Simon, Megan <msimon@usbr.gov>  
To: "Zedonis, Paul" <pzedonis@usbr.gov>

Tue, Sep 5, 2017 at 4:32 PM

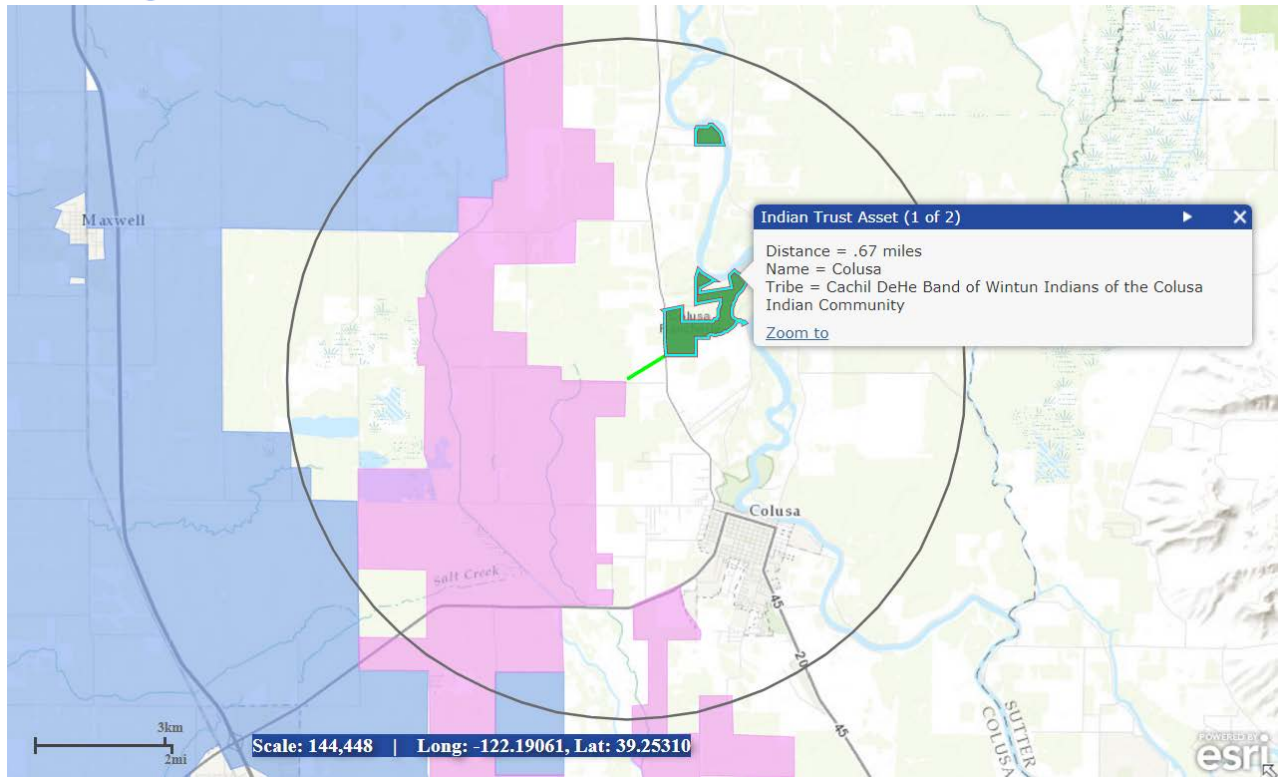
I have examined the referenced proposal and have determined that the facilities are located at least 0.5 miles from the closest Indian Trust Asset.

I have determined that there is no likelihood that this action will adversely impact Indian Trust Assets.

--

*Megan K. Simon*

Natural Resources Specialist  
U.S. Bureau of Reclamation  
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## Attachment 2. Cultural Resources Review

**CULTURAL RESOURCES COMPLIANCE  
Division of Environmental Affairs  
Cultural Resources Branch (MP-153)****MP-153 Tracking Number:** 17-NCAO-252**Project Name:** Transfer of Base Supply and Central Valley Project Water by Glenn-Colusa Irrigation District to the Colusa Drain Mutual Water Company**NEPA Document:** EA-17-13-NCAO**NEPA Contact:** Megan Simon**MP-153 Cultural Resources Reviewer:** Gary Scholze, Archaeologist**Date:** September 6, 2017

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Reclamation proposes to provide consent to Glenn-Colusa Irrigation District (GCID) to transfer up to 45,000 acre-feet (af) of water, comprised of up to 15,000 af of base supply and up to 30,000 af of Central Valley Project water to the Colusa Drain Mutual Water Company (CDMWC) annually from June through September for a five-year term.

Under the proposed Transfer Agreement, each year GCID would inform the CDMWC how much Base Supply and Project Water is expected to be available for purchase on a monthly basis during the upcoming irrigation season. Monthly quantities could change at the sole discretion of GCID at any time during the irrigation season. GCID would deliver transfer water through existing drainage locations to the Colusa Drain and in accordance with water availability terms and conditions as identified in the Transfer Agreement between GCID and the Company. Flow would continue to be transported from the Drain, through existing infrastructure. No new construction, ground-disturbing activities, and or land use changes would occur as part of the Proposed Action.

Reclamation determined that the proposed action is the type of undertaking that does not have the potential to cause effects on historic properties, should such properties be present, pursuant to 36 CFR § 800.3(a)(1). As such, Reclamation has no further obligations under 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA).

This document conveys the completion of the cultural resources review and NHPA Section 106 process for this undertaking. The proposed action would have no impacts on cultural resources. Please retain a copy of this document with the administrative record for the proposed action. Should the proposed action change, additional review under Section 106, possibly including consultation with the State Historic Preservation Officer, may be required.