



— BUREAU OF —
RECLAMATION

Final Feasibility Report

Appendix D – Real Estate

North-of-the-Delta Offstream Storage Investigation



Mission Statements

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

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.

Final Feasibility Report

Appendix D – Real Estate

**North-of-the-Delta Offstream Storage Investigation, California
Interior Region 10 • California-Great Basin**

prepared for Reclamation by AECOM under Contract/Order No. GS-00F-188CA, 140R2018F0052

Cover Photo: Sites Reservoir proposed site (Sites Project Authority)

Contents

Page

Appendix D. Real Estate	D-1
D.1 Purpose	D-1
D.2 Background	D-1
Tehama-Colusa Canal and Funks Reservoir	D-1
Alternative Features	D-2
D.3 Proposed Project Ownership and Operations	D-3
D.4 Existing Federal Projects and Programs	D-3
D.5 Project Description	D-3
D.6 Project Implementation Schedule	D-5
D.7 Acquisition Criteria	D-5
D.8 Land Acquisition Cost Estimate	D-6
Summary of Real Estate Impacts and Costs	D-6
Market Value Analysis Methodology.....	D-7
Assumptions.....	D-8
Value Estimate Applied to Impacted Parcels.....	D-9
D.9 Acquisition Administration Cost Estimate.....	D-9
D.10 Lands, Easements, and Rights-of-Way Descriptions	D-10
Estates to Acquire	D-10
Total Acreage Required.....	D-11
Impacted Parcels	D-11
Current Land Use and Zoning	D-11
Williamson Act/Farmland Security Zone Lands.....	D-11
Residential/Business Relocations (P.L. 91-646)	D-12
Road and Utility Relocations	D-12
Mineral Activity/Subsurface Rights	D-13
D.11 Impacted Communities	D-13
D.12 Sponsor-Owned Lands.....	D-13
D.13 Taking Analysis	D-14
D.14 Landowner Support	D-14
D.15 Hazardous, Toxic, or Radiological Materials.....	D-14
D.16 Navigation Servitude.....	D-15
D.17 References.....	D-15

Tables

Table D-1. Summary of Common Features of NODOS Project Alternatives (modified from Appendix A).....	D-2
--	-----

Table D-2. Sites Reservoir Project Features	D-4
Table D-3. Summary of Estimated Real Estate Costs.....	D-7
Table D-4. General Assigned Market Values by Land Use Type.....	D-10
Table D-5. Proposed Project Features and Number of Impacted Land Parcels D-11	
Table D-6. Land Use Categories of Impacted Parcels	D-12

Figure

Figure D-1. Project Implementation Schedule.....	D-19
--	------

Plates

Plate D-1. Sites Reservoir Alternative A.
Plate D-2. Sites Reservoir Alternative B.
Plate D-3. Sites Reservoir Alternative C.
Plate D-4. Sites Reservoir Alternative D.

This page intentionally left blank.

Appendix D. Real Estate

D.1 Purpose

The purpose of this appendix is to identify the extent of the potential impact on public and private properties from construction and operation of the proposed Sites Reservoir and associated facilities and to estimate the potential cost of acquiring real estate in support of the North-of-the-Delta Offstream Storage (NODOS)/Sites Reservoir Project. The estimate of real estate costs presented herein is not an appraisal, and is not to be used as a budget placeholder. This estimate is to be used to compare alternative plans at a feasibility level of analysis. Impacts on real estate and associated costs of real estate provided herein are gross estimates based on potentially inundated lands and number of impacted parcels, current real estate values, and the cost of acquisition for feasibility-level evaluation only.

This analysis includes lands that would be acquired in fee for inundated lands; in fee and permanent easement for reservoir area facilities such as roads, inlet and outlet structures, conveyance pipelines, recreation facilities, dams, utilities, and bridges; and temporary construction easement for staging and construction activities.

Costs associated with borrow sites, mitigation lands, cemetery relocations, eminent domain proceedings, and damages are not evaluated in this report.

D.2 Background

Four alternatives for the NODOS/Sites Reservoir Project are under evaluation in the Draft Feasibility Report: three were developed by the United States Department of the Interior, Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) and the fourth was developed by the Sites Reservoir Project Authority (Authority) as a Locally Preferred Alternative. Reclamation has a Memorandum of Understanding with the Authority, and DWR is a responsible agency.

Tehama-Colusa Canal and Funks Reservoir

The Tehama-Colusa Canal is also owned by Reclamation, and operated and maintained by the Tehama-Colusa Canal Authority. The canal diverts water from the Sacramento River at Red Bluff that is used to irrigate agricultural lands on the western side of the Sacramento Valley. The canal is part of the Central Valley Project (CVP).

Funks Reservoir is a regulating facility for the Tehama-Colusa Canal, located on Funks Creek approximately 7 miles northwest of Maxwell. This reservoir, constructed in 1975, and also owned by Reclamation, has an approximate active storage capacity of 2,250 acre-feet (AF).

All Sites Reservoir alternatives under consideration in the Draft Feasibility Report would augment Funks Reservoir. This reservoir would continue to serve as a regulating facility for the Tehama-

Colusa Canal, but would also serve as a forebay/afterbay for Sites Reservoir. Water would be diverted from the Tehama-Colusa Canal and the Glenn-Colusa Canal (owned by Glenn-Colusa Irrigation District) to fill the reservoir.

The Draft Feasibility Report considers a range of ownership alternatives, including ongoing ownership of the Tehama-Colusa Canal and Funks Reservoir by Reclamation, and potentially transferring the ownership to others.

Alternative Features

The NODOS/Sites Reservoir Project alternatives have several common features that require real estate acquisition to enable construction and operation. These are summarized in Table D-1.

Table D-1. Summary of Common Features of NODOS Project Alternatives (modified from Appendix A)

Location	Description
Sites Reservoir	Gross Storage Capacity – 1.8 MAF Inundation Area – 14,000 acres
Golden Gate Dam (Sites Reservoir)	Location – Funks Creek Earth Rockfill Embankment Dam Crest Length – 2,250 feet Maximum Height – 310 feet
Sites Dam (Sites Reservoir)	Location – Stone Corral Creek Earth Rockfill Embankment Dam Crest Length – 850 feet Maximum Height – 290 feet
Saddle Dams (Site Reservoir)	Location – North end from Funks Creek to Hunters Creek Earth Rockfill Embankment Dams Dams 1,2,4,9 – 40 to 50 feet high Dams 3,5,6,7,8 – 70 to 130 feet high
Spillway (Sites Reservoir)	Location Saddle Dam 4 Diameter – 7 feet
Sites Pumping Plant	Location – Downstream from Golden Gate Dam
Funks Reservoir	Active Storage Volume – 1,300 to 5,290 AF Pumping Capacity – 3,900 to 5,900 cfs
GCID Canal Fish Screens	Requires modification
GCID Canal	Existing capacity at Funks Reservoir (with minor reshaping) – 1,800 cfs
T-C Canal	Existing Capacity at Funks Reservoir – 2,100 cfs
GCID Canal TRR	Capacity – 2,000 AF Footprint – 200 acres Depth – 17 feet Maximum embankment height – 21 feet
Road Relocations and access Roads	Requires road alignments and additional roads
Utility Relocations	Requires a four- or six-breaker ring configuration and transmission lines
Hydroelectric Facilities	Generation at TRR and Delevan Pipeline Intake Facilities
Recreation Facilities	Multiple recreation areas

AF= acre-foot
cfs = cubic feet per second
GCID = Glenn-Colusa Irrigation District
MAF = million acre-feet
NODOS = North-of-the-delta Offstream Storage
T-C = Tehama-Colusa
TRR = Terminal Regulating Reservoir

D.3 Proposed Project Ownership and Operations

Several ownership scenarios are presented in this Draft Feasibility Report, with corresponding cost assignments. Potential owners include the Federal Government, the State of California, and the Authority (a regional joint powers authority). Ownership could potentially be shared. Authority member agencies include Colusa and Glenn Counties, Colusa County Water District, Glenn-Colusa Irrigation District (GCID), Maxwell Irrigation District, Orland-Artois Water District, Reclamation District 108, TC (Tehama-Colusa) 8 Districts, Tehama-Colusa Canal Authority, and Westside Water District.

Construction of the NODOS/Sites Reservoir Project would likely include expansion of Funks Reservoir. The Federal Government is currently the fee owner of Funks Reservoir. Expansion of and/or changes to Funks Reservoir would require Congressional approval, which would also be needed should the Federal Government elect to transfer title to Funks Reservoir for ownership or operational responsibilities (or a combination thereof) to the Authority or the State of California.

D.4 Existing Federal Projects and Programs

As owner and operator of Shasta Dam and Reservoir, Keswick Dam and Reservoir, and various components of the CVP, Reclamation has a major effect on existing and future environmental resources in the region. Ongoing projects or programs relevant to the NODOS Investigation include the CVP and the Central Valley Project Improvement Act (CVPIA).

Central Valley Project – The CVP is the largest reservoir and delivery system in California. It spans 35 California counties and supplies water to more than 250 long-term water contractors in the Central Valley, the Santa Clara Valley, and the San Francisco Bay Area. Approximately 90 percent of the water delivered through the CVP is for agriculture. CVP operation is regulated by several requirements and agreements. CVP facilities include the Tehama-Colusa Canal and Funks Reservoir. These facilities would be modified if the project is constructed.

Central Valley Project Improvement Act – The CVPIA redefined the purposes of the CVP to include the protection of fish and wildlife, restoration, and enhancement of associated habitats. The CVPIA identified many specific measures and programs to meet the new project purposes, and directed the Secretary of the Interior to operate the CVP consistent with these purposes.

D.5 Project Description

The proposed NODOS/Sites Reservoir Project would be approximately 10 miles west of Maxwell, California. All alternatives include diversions from the Sacramento River through the GCID Canal and Tehama-Colusa Canal. Alternatives A, C, and D add a third Sacramento River diversion through the proposed Delevan intake. Alternative D also includes a new electrical substation near the city of Colusa and a high-voltage transmission corridor between the substation and the intake facility on the Sacramento River.

Stored water could be released to Funks Reservoir, which would in turn release water to the Sacramento River, the Tehama-Colusa Canal, and the GCID Canal.

In total, implementation of the project is expected to require the acquisition of approximately 37,343 acres of land for Alternatives A, B, and C; and 37,395 acres for Alternative D. Preliminary estimates of the size of each key project feature are provided in Table D-2.

Table D-2. Sites Reservoir Project Features

Project Feature	Size (Acres) Fee	Size (Acres) Easement ^a
Alternatives A, B & C:		
Sites Reservoir (1.8 MAF) - Glenn County	5,390	—
Sites Reservoir (1.8 MAF) - Colusa County	29,243	150
Funks Reservoir Complex	1,279	159
Terminal Regulating Reservoir	1,183	—
Delevan Pipeline	248	1,072
Total – Alternatives A, B & C:	37,343	1,381
Alternative D:		
Above features	37,343	1,381
Sacramento River HVTL & Substation	52	1,832
Total - Alternative D:	37,395	3,213

^a Acreages represent combined temporary and permanent.

HVTL = high-voltage transmission line

MAF = million acre feet

— = no easement required

In accordance with 43 Code of Federal Regulations (C.F.R.) Part 8, it is the policy of the Department of the Interior to acquire the lands necessary for the realization of optimum values for all purposes, including present and future outdoor recreational and fish and wildlife potentials, when constructing a reservoir. For initial planning purposes, a 100-foot buffer area around the reservoir's high-water mark (consistent with Federal Energy Regulatory Commission requirements) was used to estimate the real estate acquisition. This buffer would serve to maintain or improve public access, reduce potential encroachments, manage shoreline erosion and water quality, and protect wildlife habitat and visual resources. The actual project take line for the project would be determined through purchase negotiations with affected landowners.

Additional land would be acquired to serve as mitigation sites. The types and acreages of mitigation land would be determined based on forthcoming environmental resource assessments being conducted by the Authority and the requirements of Federal, State, and local resource agencies. Lands required for mitigation, and their estimated costs, are identified in the mitigation cost technical memorandum (AECOM 2016). The actual project take line for the project mitigation would be determined through purchase negotiations with affected landowners.

D.6 Project Implementation Schedule

The Authority, as the non-Federal partner and major regional planning entity, has developed a schedule for future NODOS/Sites Reservoir Project activities (see Figure D-1). The schedule proposes real estate acquisition to begin in late 2019, with construction to begin in early 2022. Construction activities would continue through mid-2030.

Land acquisitions and infrastructure, business, and residential relocations (part of Phase 3) would occur following the approval of the final NODOS/Sites Reservoir Project-level Environmental Impact Report / Environmental Impact Statement (EIR/EIS), and are expected to take up to 36 months to complete (starting in early 2019).

D.7 Acquisition Criteria

Reservoir project land acquisition policy for the Department of Interior and United States Army Corps of Engineers (USACE) is published in 43 C.F.R. Part 8, Joint Policies of the Departments of the Interior and of the Army Relative to Reservoir Project Lands. This joint policy provides that fee title would be acquired for the following:

- Lands necessary for permanent structures
- Lands below the maximum water surface elevation line of the reservoir, including lands below a selected freeboard, where necessary to safeguard against the effects of saturation, wave action, and bank erosion, and the permit-induced surcharge operation
- Lands needed to provide for public access to the maximum flowage line as described in paragraph (b) of this section, or for operation and maintenance of the project

The policy also provides for acquisition of the following additional lands for correlative purposes:

- Such lands as are needed to meet present and future requirements for fish and wildlife as determined pursuant to the Fish and Wildlife Coordination Act
- Such lands as are needed to meet present and future public requirements for outdoor recreation, as may be authorized by Congress

This real estate analysis is based on the minimum acquisition necessary to meet the policy direction.

Although the following factors are not included in the analysis provided herein, they would be taken into consideration in greater detail as lands are needed for any project that may be identified, refined, approved, and implemented after completion of the Final Feasibility Report, EIR/EIS, and related Record of Decision and Notice of Decision.

The acquisition line may be adjusted to account for the following:

- Additional lands needed for project purposes and mitigation areas (road relocations and recreation mitigation areas, etc.)

- Lands needed to maintain or improve public access
- Lands needed to reduce potential encroachments
- Lands necessary to manage shoreline erosion or other water quality impacts
- Lands necessary to protect wildlife habitat and/or visual resources

D.8 Land Acquisition Cost Estimate

AECOM collected and analyzed data from Colusa and Glenn Counties and 2015 market valuation in the counties to derive a proposed NODOS/Sites Reservoir Project real estate cost estimate. These data form the basis for the feasibility-level valuation estimate provided in this real estate appendix.

California's Proposition 13 (State of California 1978) affects property tax-based valuation by limiting the annual escalation rate (which traditionally reflected property values) for the duration over which the title is held. On the sale of a property, the land is re-assessed at the current market value, and the limited escalation is reapplied to future tax valuation. Property held by the same owner over the course of several years would have a recorded valuation that is likely less than the actual market value. Therefore, current regional market values of similar types of properties for sale must also be reviewed to compare market value versus recorded assessment value.

Summary of Real Estate Impacts and Costs

Table D-2 summarizes the total estimated land acquisition acreages for Sites Reservoir and associated facilities, and cost summary.

Table D-3 shows the acreages sought for either fee ownership or easement. In addition to summary costs, planning-level administration costs were estimated for parcel acquisition, as well as relocation administrative costs for both permanent and temporary easements.

Although this estimate is intended to evaluate costs for the current range of alternatives (Alternatives A, B, C, and D), some of the scope and cost of additional efforts associated with real estate acquisition are still unknown; including, but not limited to, the following:

- Cost of conducting hazardous materials surveys for lands to be purchased before acquisition, and costs for removing underground storage tanks or other hazardous materials that may be found on property proposed for acquisition
- Cost related to any eminent domain condemnation that could be required to acquire properties necessary for project implementation
- Payment for damages

A preliminary (planning-level) evaluation of mitigation costs associated with mitigating project-induced environmental impacts estimated land acquisition for mitigation purposes at \$159 million. A technical memorandum (AECOM 2016) prepared for the Authority provides an overview of estimated mitigation and monitoring costs to address the impacts identified in the project's draft EIR/EIS.

Table D-3. Summary of Estimated Real Estate Costs

Project Feature	Fee	Easement ^a
Alternatives A, B & C:		
Estimated Land Acquisition Acreage ^b	37,343	1,381
Estimated Costs (2015 \$)		
Sites Reservoir Project Lands	\$ 68,840,000	\$ 10,630,000
Parcel Acquisition Administrative Costs	\$ 6,880,000	\$ 1,060,000
Subtotal – Alternatives A, B & C:	\$ 75,720,000	\$ 11,690,000
Subtotal		\$ 87,410,000
Relocation Administrative Costs		\$ 2,120,000
Total		\$ 89,530,000
Alternative D:		
Estimated Land Acquisition Acreage ^b	37,395	3,213
Estimated Costs (2015 \$)		
Sites Reservoir Project Lands	\$ 69,010,000	\$ 15,280,000
Parcel Acquisition Administrative Costs	\$ 6,900,000	\$ 1,530,000
Subtotal – Alternative D:	\$ 75,910,000	\$ 16,810,000
Subtotal		\$ 92,720,000
Relocation Administrative Costs		\$ 2,120,000
Total		\$ 94,840,000

^a Acreages represent combined temporary and permanent.

^b Refer to Table D-2 for more detailed acreage information by key project feature.

MAF = million acre-feet

Market Value Analysis Methodology

The following methodology was used to analyze the value of parcels impacted by the various reservoir alternatives, and to apply a value estimate to those parcels.

Due to the recent downturn in Central Valley real estate values, and recognizing that most, if not all of the lands suitable for agricultural use in Colusa County are already developed and in production, the values of lands to be acquired by the project are not expected to change over the acquisition horizon. Although Colusa County total crop production from 2006 through 2015 averaged approximately 4.67 percent growth annually, forecasts for total farm crop production and value are projected to remain flat through at least 2025 (with an average annual growth of around 0.02 percent), based on data from the California Department of Transportation Economics Analysis Branch (CaDOT 2016). Land values are expected to remain stable through the land acquisition process, which would begin in 2019, and is currently anticipated to run through 2022.

This report provides a market value estimate based on the recent sales of similar parcels in the same land use category. Values are based partially on data extracted from First American Core Logic Realist real estate information service (Core Logic 2011). When publically available, data from comparable properties currently listed for sale through the California Association of Realtors (CAR 2016) were used to supplement the recent sales data to provide a more complete understanding of current land market conditions. The Core Logic values were then indexed forward

from October 2011 to October 2015, using the County of Colusa farm crop and land use values trends.

Because the predominant land uses in this area of Colusa and Glenn Counties are Agriculture and Agriculture-related, agricultural land values were used to establish an overall market trend, based on median sales price per acre for land in the area from 2007 to 2015. Sales in each land use category were analyzed, and a range of sale prices for each was identified. Given the large amount of pasture/range acreage in the Sites Reservoir footprint, as well as the foothills surrounding Funks Reservoir, an additional market value unit cost was derived for this non-irrigated, non-developed land use.

After analysis, fee titles and permanent easements were based on 100 percent of the 2015 market value, because market forecasting by the State of California indicates a flat valuation out through 2025, and construction is not slated to commence until 2022. Temporary construction easements were also based on the 2015 market values. Encumbrance of property in preparation for construction, as well as the duration of construction, was estimated at 10 years for properties associated with Sites and Funks Reservoirs; and 2 years for rolling construction of Delevan Pipeline and the High-Voltage Transmission Line construction (for Alternative D).

Additional assumptions used in the valuation analysis are provided below.

Assumptions

The following is a list of assumptions common to Alternatives A, B, C, and D:

1. The following land-use categories appropriately represent current uses at the proposed NODOS/Sites Reservoir Project site. These are the only categories of land types that would be directly impacted by the project:
 - General Agriculture/Farm/Truck Crops
 - Livestock/Pasture/Range
 - Orchard
 - Residential Acreage
 - Residential Lot
 - Mobile Home Lot
 - Single-Family Residence
 - Retail Trade
2. All lands identified for acquisition would be purchased on a “willing seller” basis.
3. Estimated costs for temporary easements are based on the loss of production due to project construction. They incorporate agricultural productivity and crop-specific market values over the period of encumbrance or loss of production.
4. For property rights of land parcels located partially inside and partially outside of the proposed project footprint identified for acquisition, only the portion inside the project

footprint would be acquired, and that portion could be purchased without acquiring rights on the portion outside of the project footprint.

5. Public Law (P.L.) 91-646 relocations would be required where lands would be acquired in fee for project features. In addition to displacement from dwelling(s), this includes certain moving and related expenses; displacement from business or farm operation; and certain utility relocation expenses.
6. P.L. 91-646, relocations of homeowners or businesses, would incur administrative costs, benefits, and expenses of \$40,000 per residence/business property for any displacement (temporary or permanent). In situations where comparable replacement is not readily available, the displacing agency has the authority to take such actions necessary to create/provide comparable dwelling, including relocation-related additional costs. (It is premature at this time to determine if any such housing of last resort conditions pertain to this project.) A minimum cost for residential land acquisition (vacant or non-vacant) and relocation was set at \$20,000 per residential parcel to cover uncertainties and unknowns with smaller residential parcels (predominantly in the town of Sites) as a planning-level estimate to acquire, displace, and/or relocate current owners.
7. Covenants or easements on lands to be acquired would, for the purpose of this estimate, be valued at full fee value, not as a percentage of the fee.
8. Electrical transmission lines and relocated utilities would be within the permanent easements and rights-of-way acquired for project pipelines and roads.
9. Construction of Sites, Golden Gate, and the Saddle dams would take approximately 8 years. Construction of the Delevan Pipeline would take 5 years. Construction of the Sacramento River intake high-voltage transmission line and Colusa substation would take approximately 2 years. These durations were used in computing temporary easement costs.

Value Estimate Applied to Impacted Parcels

Maps annotated with assessor's parcels and land use data were used to evaluate impacted parcels, improved and unimproved, to visually determine fee acquisitions versus easements required for the proposed project. Mapping and parcel data were verified through comparison with available County-provided geographic information system (GIS) parcel maps. Full value of the parcel in 2015 dollars was accounted for in the value estimate for the property. Table D-4 lists the land use types and associated market value unit price in October 2015 dollars.

D.9 Acquisition Administration Cost Estimate

The Authority would incur administrative costs in acquiring lands and easements for project construction.

As stated previously, maps annotated with planned improvements were prepared for the evaluation of all parcels, improved and unimproved, to visually determine partial or total takes. Residential and commercial parcels improved with structures were identified, and partial or total takes were determined. This analysis enabled AECOM staff to make a rough estimate of potential relocation costs pursuant to P.L. 91-646, the Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970, as amended.

Table D-4. General Assigned Market Values by Land Use Type

Land Use	2015 Market Value Assigned
Agricultural/Farm/Truck Crops (less than 10 acres)	\$35,800 per acre
Agricultural/Farm/Truck Crops (10 to 80 acres)	\$11,600 per acre
Agricultural/Farm/Truck Crops (more than 80 acres)	\$8,900 per acre
Pasture/Livestock (less than 80 acres)	\$4,700 per acre
Pasture/Livestock (more than 80 acres)	\$3,300 per acre
Pasture/Livestock (Funks and Sites Reservoirs)	\$1,500 per acre
Orchard (less than 80 acres)	\$36,300 per acre
Orchard (more than 80 acres)	\$32,000 per acre
Residential Acreage	\$55,800 per acre
Residential Lots	\$8 per square foot
Mobile Home Lot	\$8 per square foot
Retail Trade	\$160 per building square foot
Single-Family Residence	\$120 per building square foot

The administrative cost of one parcel acquisition with no relocation is estimated at 10 percent of the total market value, for the purpose of this analysis. This administrative cost includes the work of surveyors, GIS staff, legal counsel, title company support, appraisers, and a team of realty specialists/land agents.

The administrative cost of one parcel acquisition with a residential or business relocation is estimated at 10.00 percent of the total market value, plus \$40,000. This amount includes all of the work discussed above for unimproved parcel acquisition, plus Relocation Advisory Services and Relocation Benefits.

If a parcel would be affected by both inundation and reservoir area facility relocations, the higher administrative cost (for acquisition with relocation) was applied because both acquisitions were considered to occur concurrently.

Administrative costs associated with potential eminent domain actions necessary for acquisition are not included in this estimate.

D.10 Lands, Easements, and Rights-of-Way Descriptions

Implementation of the NODOS/Sites Reservoir Project would require the acquisition of lands by the Authority in estates in fee and by easement for project components.

Estates to Acquire

Estates to be acquired include the following:

- Fee simple land purchased
- Permanent easements

- Temporary construction and access easements.

Total Acreage Required

Total acreage that could be impacted due to the proposed reservoir inundation area, dams, conveyance system, recreation areas, new roads, and utilities is estimated at approximately 14,000 acres. This estimate does not include acreage that may be required for mitigation offsets not incorporated lands obtained by the project footprint.

Impacted Parcels

GIS analysis used Glenn and Colusa County–provided parcel data to develop an inventory of potentially impacted lands by the NODOS project alternatives. The County-provided databases identified parcels by land use type, and the acreage of each impacted parcel was derived by overlaying the project footprint with the parcel data. The project overlaps, and impacts to some degree 222 to 261 parcels, depending on the alternative selected. Table D-5 shows the number of impacted parcels for each project feature. Some parcels are counted more than once, because several project features may impact an individual parcel. Plates 1 through 4 at the back of this appendix show the overall project layout associated with key project features by alternative.

Table D-5. Proposed Project Features and Number of Impacted Land Parcels

Proposed Project Feature	Number of Impacted Parcels ^a Fee	Number of Impacted Parcels ^a Easement
Sites Reservoir – Glenn County	11	—
Sites Reservoir – Colusa County	148	1
Funks Reservoir Augmentation	13	1
Terminal Regulating Reservoir	12	—
Delevan Pipeline	3	31
Sacramento River Inlet/Outlet Works	2	—
Alternatives A, B & C:	222	
Recreation Facilities	1	38
Alternative D:	261	

^a Several parcels would be impacted by more than one project feature; for the purposes of this table, such parcels are counted more than once.

— = no easement required

Current Land Use and Zoning

The current dominant land use identified for project lands is Agriculture for all project features. Additional land uses include Grazing, Livestock, Farm, Truck Crops, Orchard, Rangeland, and Residential Acreage. The dominant land uses for parcels associated with the town of Sites in the reservoir inundation area are Single-Family Residence and Residential Lot. The current zoning for all parcels aligns with the land use designations. Table D-6 summarizes the number of impacted parcels in each land use category based on querying the County GIS dataset by Land Use Code. As of the date of this report, parcel zoning has not been fully analyzed.

Williamson Act/Farmland Security Zone Lands

The California Land Conservation Act of 1965 (Williamson Act) allows for certain agricultural lands to receive reduced tax assessments as an incentive to land owners for preserving agricultural lands.

The State of California provides subvention funding (subsidies) to the participating counties to offset the loss of tax revenue due to the reduced taxes assessed for land parcels enrolled in the program. Farmland Security Zones are established by counties, in accordance with Williamson Act provisions, to further reduce tax assessments and protect productive agricultural land from development.

Table D-6. Land Use Categories of Impacted Parcels

Land Use	Number of Parcels	Number of Parcels in Williamson Act
Sites Reservoir	160	85
Vicinity of Funks Reservoir	14	5
Terminal Regulating Reservoir	12	—
Delevan Pipeline	36	6
Total Alternatives A, B & C:	222	96
Colusa Substation & HVTL	39	7
Total Alternative D:	261	103

HVTL = high-voltage transmission line

— = no easement required.

As shown in Table D-6 above, there are up to 103 parcels associated with the proposed project elements that are currently enrolled in the Williamson Act in Colusa and Glenn Counties. No parcels have been identified that fall within a Farmland Security Zone. Once acquired by the project sponsor, enrolled parcels would be removed from the Williamson Act and would be not eligible for subvention funding.

Residential/Business Relocations (P.L. 91-646)

P.L. 91-646, The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (the Uniform Act), as amended, is the primary law for acquisition and relocation activities on Federal or Federal-assisted projects and programs. The Uniform Act sets the minimum standards for compensation and relocation assistance for the appraisal and acquisition of real property. Also, the Uniform Act sets the minimum standards for relocation advisory services and financial assistance for residential individuals, families, businesses, farms, and nonprofit organizations that must be relocated as a result of the public acquisition of the real property.

As a result of the construction of the project and the area of inundation, several homes, farms, and businesses may require relocation in accordance with P.L. 91-646. Through a preliminary review of county data and GIS aerial base mapping, up to 52 residences and 1 retail business may require relocation, primarily in or near the town of Sites or in Antelope Valley.

Road and Utility Relocations

There are several public roads in the inundation area that would be abandoned and rerouted due to construction of the project. New public road rights-of-way would be acquired to accommodate the new road alignments. Sites-Lodoga Road, the main route from Maxwell to Sites and communities further to the west, passes through Antelope Valley. Huffmaster Road is a private gravel road servicing farms and ranches in the southern portion of Antelope Valley. Another private gravel road, Peterson Road, provides access to the northern portion of Antelope Valley.

A 3-mile portion of Sites-Lodoga Road between the future location of Sites Dam, west through Antelope Valley, would be abandoned. A new bridge would be constructed spanning Sites Reservoir near Sites Dam, and reconnecting with the existing Sites-Lodoga Road alignment farther to the west. Six miles of Huffmaster Road would be abandoned and rerouted to the east of Antelope Valley, providing improved access to lands south of Sites Reservoir. Eight miles of Peterson Road would be abandoned in the inundation area, and a new road constructed to provide access to lands north of Sites Reservoir.

Mineral Activity/Subsurface Rights

Historic uses of some of the lands required for acquisition include quarry and mineral mining activities. Therefore, the project may impact lands that are encumbered by subsurface rights for resource extraction, including mineral, rock, and gravel mining, and oil and natural gas extraction. Subsurface right ownership has not been investigated for this analysis, and costs associated with acquiring subsurface rights are not considered in this cost estimate. During the acquisition process, a full title investigation would be completed; and subsurface rights, if any, would be identified.

D.11 Impacted Communities

The NODOS/Sites Reservoir Project is in the eastern Coast Range foothills and lowlands along the western edge of the northern Sacramento Valley. The key feature of the project, Sites Reservoir is in northwestern Colusa County and southwestern Glenn County, approximately 10 miles due west of the community of Maxwell. The proposed reservoir inundation area includes most of Antelope Valley and the small community of Sites.

Residents of the rural communities of Lodoga and Stonyford, west of Antelope Valley, and emergency responders would experience increased travel time and distance during construction of the project to and from the community of Maxwell and Interstate 5. The main public road to these communities, Sites-Lodoga Road, is in the inundation area, and would be abandoned and rerouted via a new bridge spanning Sites Reservoir.

D.12 Sponsor-Owned Lands

The Authority currently does not own any lands for the NODOS/Sites Reservoir Project. Potential project lands and easements for the proposed project are currently owned by the Federal Government, State of California, local public agencies (City of Colusa, Colusa County), quasi-public entities (e.g., GCID, Western Area Power Administration), non-governmental organizations (e.g., The Nature Conservancy), sovereign tribal (Native American) property, private citizens, or private commercial businesses or enterprises.

It is unknown at this time whether the Federal Government, State of California, or the Authority (or some combination thereof) would be acquiring project lands.

D.13 Taking Analysis

Some lands for the NODOS/Sites Reservoir Project may require acquisition in fee simple through eminent domain, or acquisition in lieu of eminent domain. In cases where the sponsor is not able to negotiate the sale with a willing seller, the sponsor may initiate an eminent domain proceeding to acquire the property. Although the project generally has been supported by the community in the past, some landowners may not be willing sellers. The current willingness of affected landowners to sell their property has not yet been assessed. Therefore, the potential administrative costs associated with acquisition through eminent domain are unknown, and are not included in this cost estimate.

D.14 Landowner Support

Extensive outreach to landowners in and near the proposed Sites Reservoir was conducted between 2001 and 2008, during the development of the Initial Alternatives Information Report (Reclamation and DWR 2006) and *North-of-the-Delta Offstream Storage Investigation Plan Formulation Report* (Reclamation and DWR 2008). Outreach efforts included public scoping meetings, tours of the NODOS/Sites Reservoir Project area, and periodic focused meetings with area landowners. During that time, landowners were receptive to the proposed project, pending the results of the environmental investigations and the identification of a preferred project alternative. Continued outreach to landowners in the Sites area is planned as part of the development of the Draft and Final EIR/EIS and Feasibility Report, providing an opportunity to re-evaluate landowner support for the project.

D.15 Hazardous, Toxic, or Radiological Materials

Hazardous materials contamination throughout the Extended Study Area has resulted from a variety of activities. These activities include the following influences:

- Agriculture operations that include the storage and application of pesticides, herbicides, and fertilizers, and production activities in farming operations
- Urban land uses that generate, store, or transport hazardous materials in the industrial, commercial, and residential settings on both land and water
- Historic mining operations

No hazardous waste locations have been discovered to date through record searches in support of the EIR/EIS (DWR 2014); however, hazardous waste could be discovered during potential future site investigation and construction activities. Sources of potential hazardous or toxic waste materials would be residential septic systems, natural gas storage tanks used for heating, and aboveground or underground fuel or fertilizer storage tanks for agricultural use and quarry operations. Electrical transformers containing polychlorinated biphenyls associated with electrical transmission or distribution may also be present. Environmental site assessments would be conducted prior to land acquisitions to identify any potential hazardous or toxic materials, sources, or conditions. There are no known sources of radiological wastes in NODOS/Sites Reservoir Project lands. Costs associated with identifying and cleaning up hazardous or toxic materials, sources, and conditions that might be

discovered in the future on acquired project lands is not included in the real estate cost estimate. Contingencies are included in the construction cost estimate to properly manage and dispose of hazardous materials or hazardous waste discovered during construction activities.

D.16 Navigation Servitude

Navigational Servitude is the constitutional doctrine that gives the Federal Government operating rights over navigable waterways. Navigational Servitude is not applicable to the lands required for the NODOS/Sites Reservoir Project.

D.17 References

AECOM. 2016. *Sites Reservoir Feasibility Study Technical Memorandum Mitigation Measure Evaluation and Cost Estimate*. October.

CaDOT (California Department of Transportation). 2016. Long-Term Socio-Economic Forecasts by County. http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html.

CAR (California Association of Realtors). 2016. *California Housing Market Update*. Monthly Sales and Price Statistics. August. Accessed February 2017.
www.car.org/3550/pdf/econpdfs/Monthly_Housing_Market_Outlook_2016-08.pdf.

Core Logic, Inc. 2011. Realist Metrolist Property Sales Data. Accessed March 2011.
<http://realist2.firstamres.com>.

DWR (California Department of Water Resources). 2014. *Preliminary Draft EIS/EIR*. May.

Reclamation and DWR (United States Department of the Interior, Bureau of Reclamation and California Department of Water Resources). 2006. *North-of-the-Delta Offstream Storage Investigation Final Initial Alternatives Information Report*.

Reclamation and DWR. 2008. *North-of-the-Delta Offstream Storage Investigation Plan Formulation Report*.

State of California, 1978. California Constitution, Article XIII A, Tax Limitation, 1978.
http://www.legalinfo.ca.gov/.const/.article_13A.

Acronyms and Abbreviations

AF	acre-feet
Authority	Sites Reservoir Project Authority
C.F.R.	Code of Federal Regulations
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DWR	California Department of Water Resources
EIR/EIS	Environmental Impact Report /Environmental Impact Statement
GCID	Glenn-Colusa Irrigation District
GIS	geographic information system
NODOS	North-of-the-Delta Offstream Storage
P.L.	Public Law
Reclamation	United States Department of the Interior, Bureau of Reclamation
USACE	United States Army Corps of Engineers

Figures

This page intentionally left blank

	1	2			3	4							
Phase	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
NEPA/ CEQA			Draft EIR/S		Final EIR/S ROD								
Permitting		Permitting				Mitigation and Monitoring							
Water Rights				Obtain Rights									
Engineering		Preliminary and Final Design											
Real Estate		Right-of-Entry			Real Estate								
Construction					Construction								
Operations													Start - Up

CEQA = California Environmental Quality Act
 EIR = Environmental Impact Report
 EIS = Environmental Impact Statement
 NEPA = National Environmental Policy Act
 NOD = Notice of Determination
 ROD = Record of Decision

Figure D-1. Project Implementation Schedule

This page intentionally left blank

Plates

This page intentionally left blank.

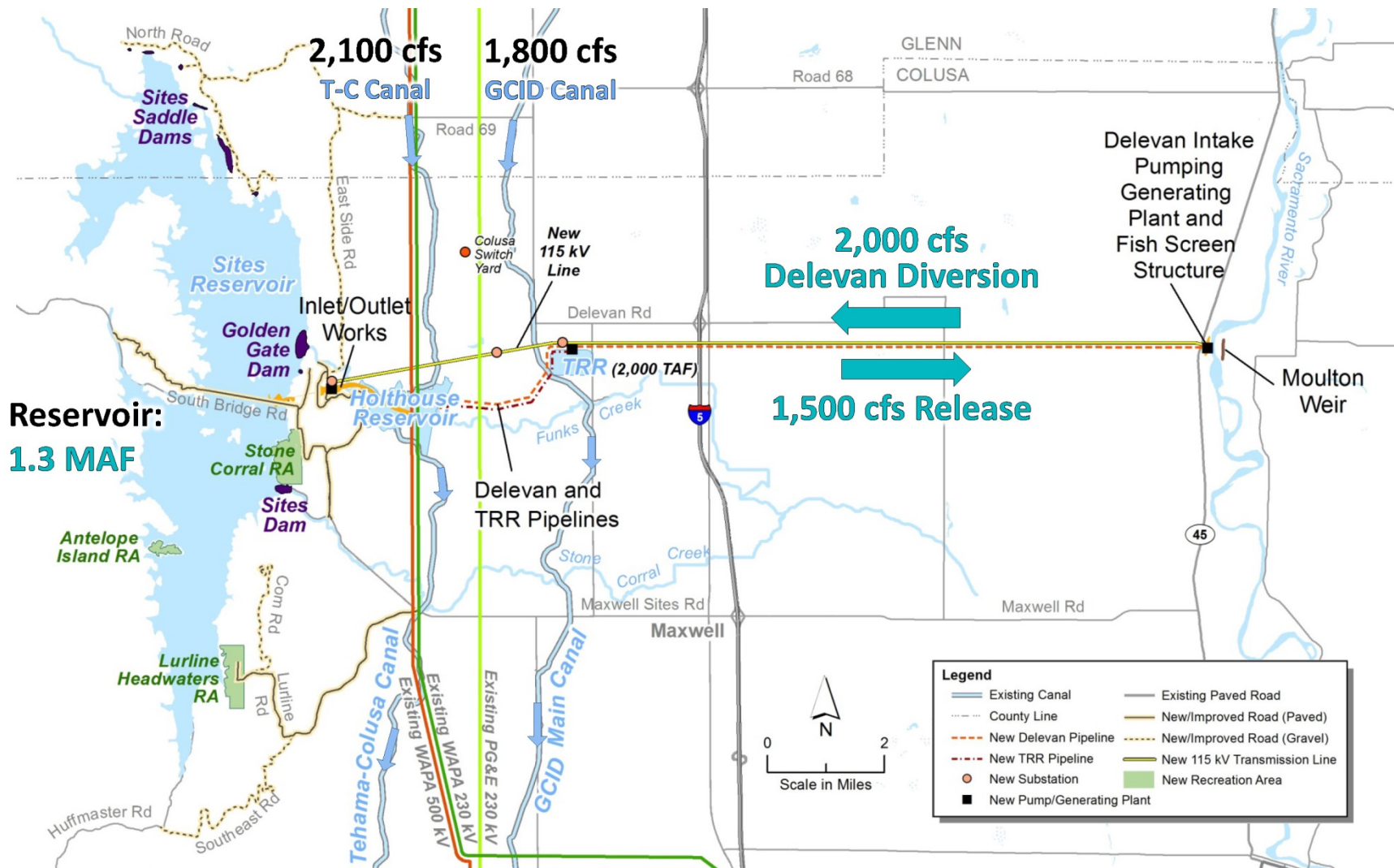


Plate D-1: Sites Reservoir Alternative A

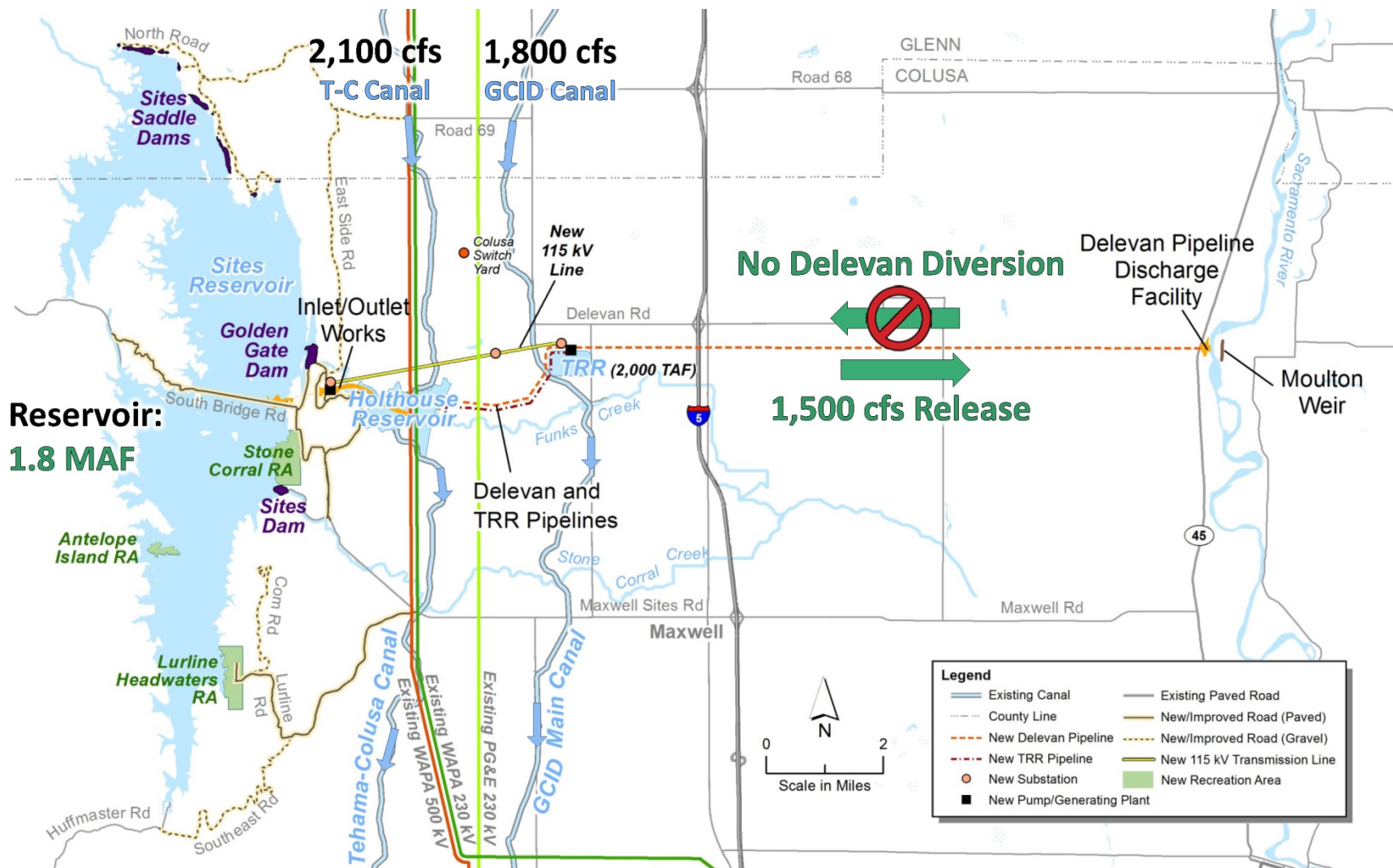


Plate D-2: Sites Reservoir Alternative B

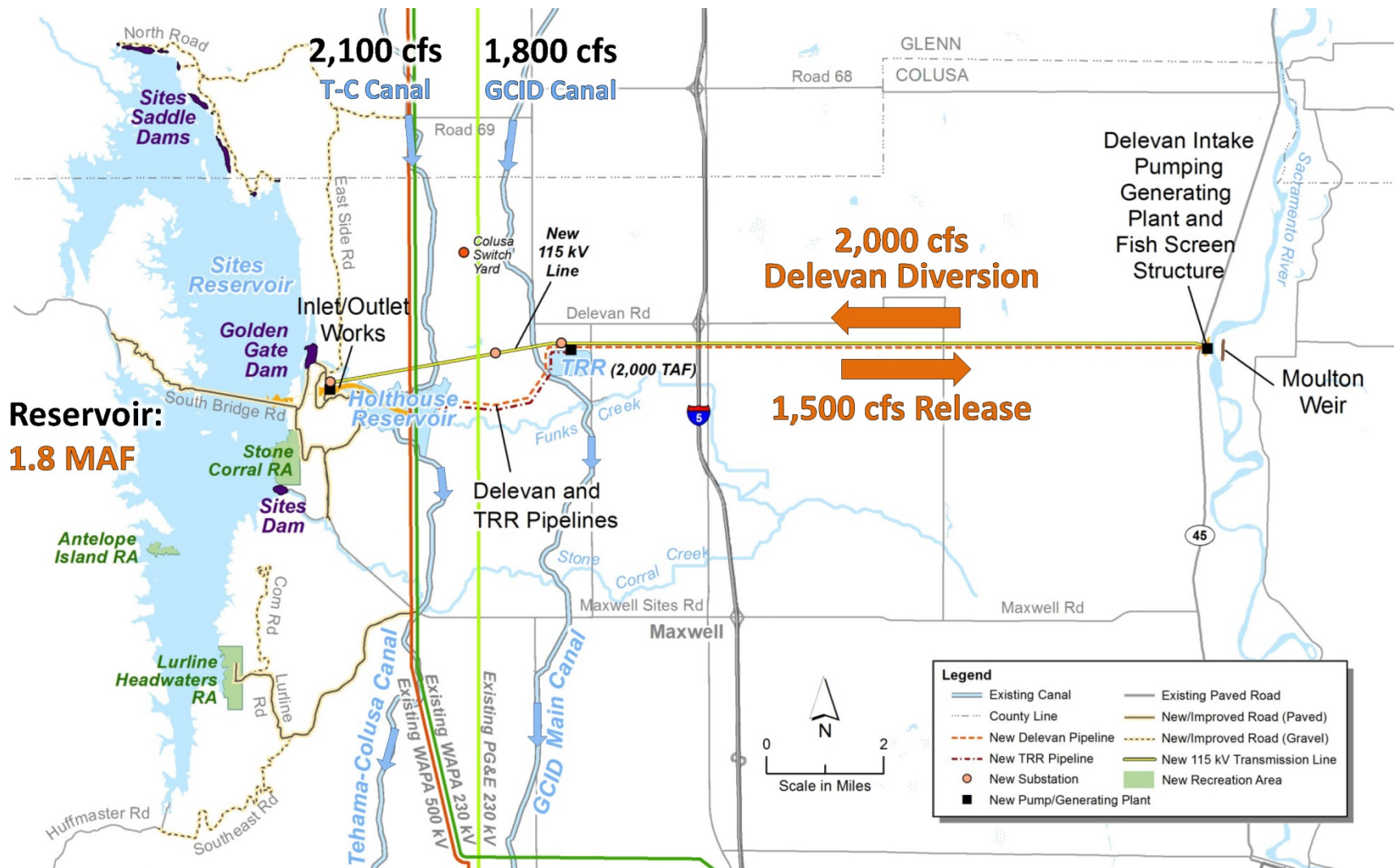


Plate D-3: Sites Reservoir Alternative C

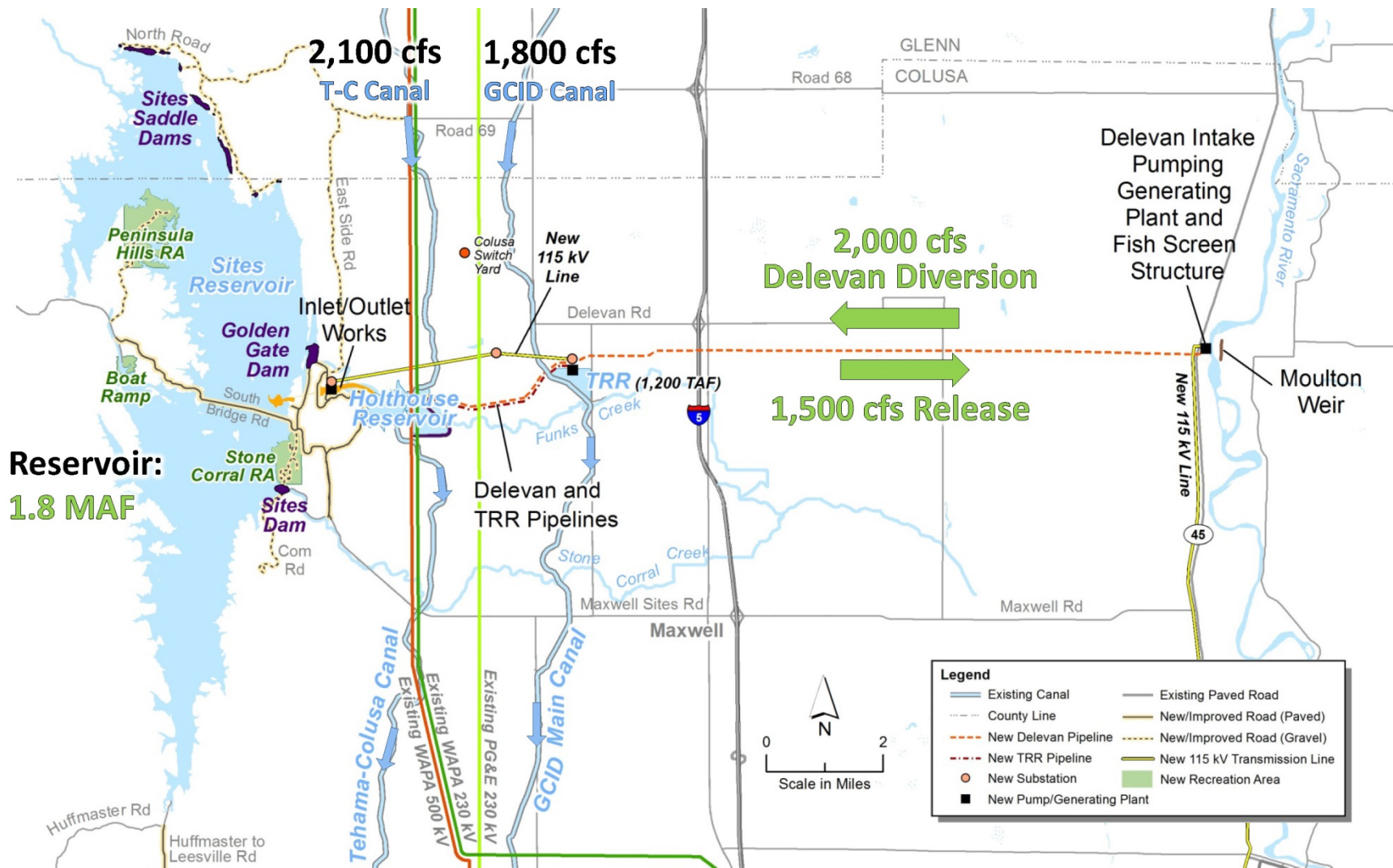


Plate D-4: Sites Reservoir Alternative D