



Subject: Summary of Utility Crossings – Bethany Reservoir Alternative (Final Draft)

Project feature: Site Development / Logistics

Prepared for: California Department of Water Resources (DWR) / Delta Conveyance Office (DCO)

Prepared by: Delta Conveyance Design and Construction Authority (DCA)

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1. Introduction

The proposed tunnel alignment for the Delta Conveyance Project (DCP) Bethany Reservoir Alternative would be expected to cross under various utilities across the length of the alignment. Additionally, project facilities located near ground surface or aboveground may also cross over existing surface and subsurface utilities. Although these utility crossings do not inherently pose conflicts with the DCP, the purpose of this technical memorandum (TM) is to identify the crossings.

Note that as of the writing of this TM, the tunnel alignments are preliminary and subject to change during conceptual or detailed design due to results of geotechnical and other explorative studies, facility optimization studies, or findings of the DCP Environmental Impact Report (EIR). Further, the locations of utilities identified within this TM are based on information that is available to DCA at this time. During the design phase, utilities that would be crossed by DCP facilities would be located and surveyed, or otherwise verified by the subject utility provider. Additionally, it is possible that the current project alignments could cross under existing utilities where the locations are confidential and/or not currently known by the DCA. During the design phase, more in-depth analysis of easement locations associated with acquired parcels and utilities surveys would be completed to understand and avoid conflicts with existing utilities.

A summary of the identified utility crossings and the organizations who operate them are summarized in Table 1, and the general locations of the crossings are presented in Figure 1. These crossings are described in more detail, by utility type and provider, in Sections 2 through 5 of this TM.

Table 1 Utility Crossings

Utility Operator	Description of Utility
Sacramento Area Sewer District	Dual 8-inch diameter Courtland sewer force main Dual 10-inch diameter Walnut Creek sewer force main
Sacramento Regional County Sanitation District	Proposed Harvest Water transmission pipeline1
Sacramento County Water Agency	Hood Water Treatment Plant and groundwater well
Woodbridge Irrigation District	Unlined irrigation canal
City of Stockton	Stockton Delta Water Supply raw water supply pipeline
Byron-Bethany Irrigation District	Mountain House raw water supply pipeline

Table 1 Utility Crossings

Utility Operator	Description of Utility
East Bay Municipal Utility District	Mokelumne Aqueducts
Pacific Gas and Electric Company	Numerous natural gas pipelines
Lodi Gas Storage, LLC	20-inch natural gas pipeline
California Resources Company	12-inch and 4-inch natural gas pipelines
Miscellaneous Fuels	Numerous active and abandoned petroleum product pipelines

Notes:

¹ Currently under design. Nature of crossing, if any, not currently known.

Legend

○

Utility Crossing

●

7,500 cfs Option Only

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Tunnel

■

Temporary Construction

ID

Utility Operator

1Sacramento County Water Agency (SCWA)

2Sacramento Area Sewer District (SASD)

3Sacramento Regional County Sanitation District (RegionalSan)

4Pacific Gas and Electric (PG&E)

5Lodi Gas Storage, LLC.

6Woodbridge Irrigation District (WID)

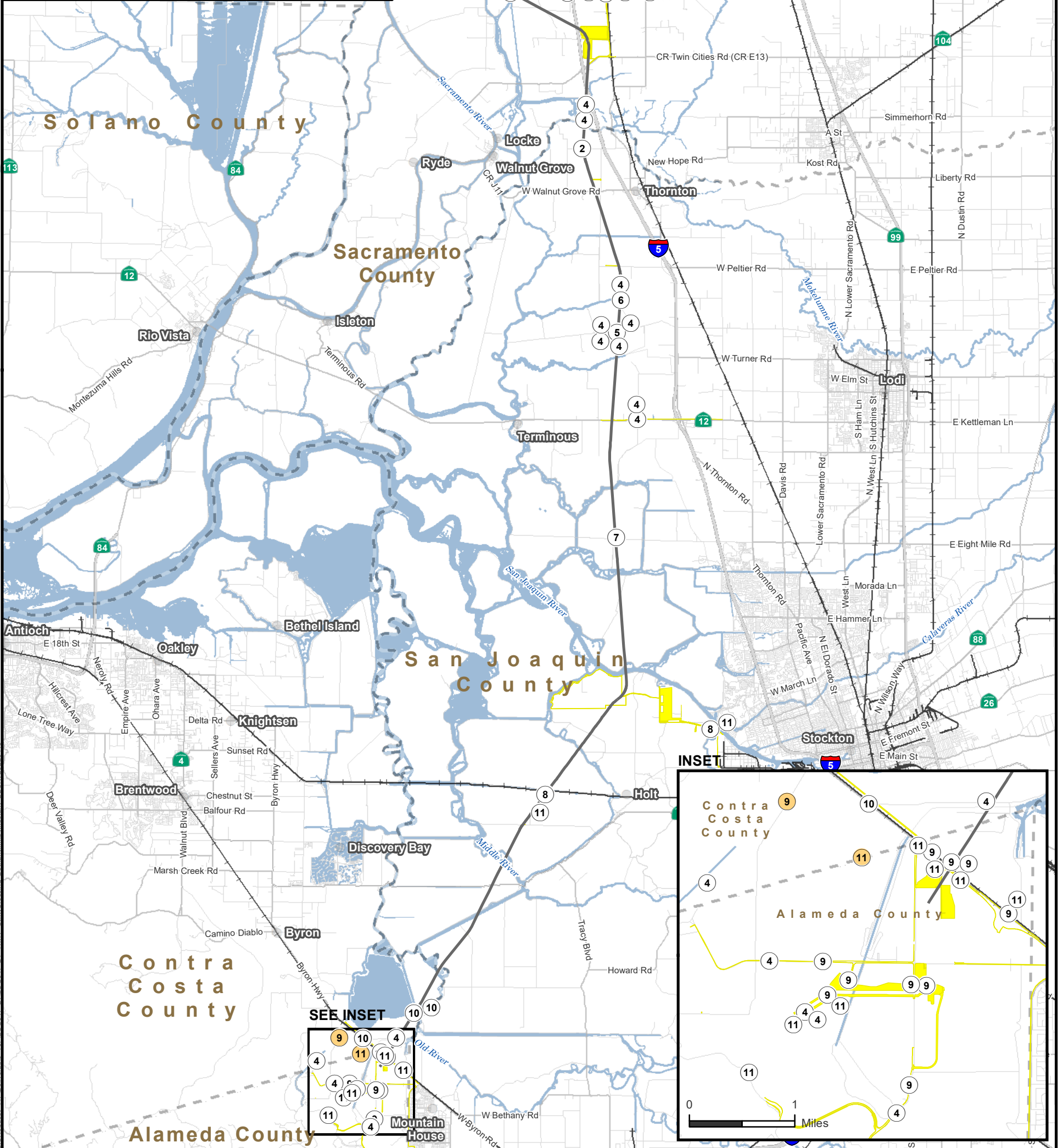
7City of Stockton Municipal Utilities Department

8East Bay Municipal Utility District (EBMUD)

9Byron-Bethany Irrigation District (BBID)

10California Resources Corporation (CRC)

11Miscellaneous Fuels



2. Water and Wastewater

2.1 Sacramento Area Sewer District

The Bethany Reservoir Alternative crossings with Sacramento Area Sewer District (SASD) Courtland and Walnut Grove dual wastewater force mains on Lambert Road and Barber Road would be the same as described for the Eastern Corridor in the *Summary of Utility Crossings Technical Memorandum (TM)* (DCDCA, 2021a).

2.2 Sacramento Regional County Sanitation District

The Bethany Reservoir Alternative potential crossings with Sacramento Regional County Sanitation District's (RegionalSan) Harvest Water transmission pipeline along Franklin Boulevard would be the same as described for the Central and Eastern Corridors in the *Summary of Utility Crossings TM* (DCDCA, 2021a).

2.3 Sacramento County Water Agency

The Bethany Reservoir Alternative crossings near the Sacramento County Water Agency (SCWA) Hood Water Treatment Plant (WTP) and groundwater well (W-25) on Hood-Franklin Road would be the same as described for the Central and Eastern Corridors in the *Summary of Utility Crossings TM* (DCDCA, 2021Aa).

2.4 Woodbridge Irrigation District

The Bethany Reservoir Alternative crossing with Woodbridge Irrigation District's (WID) unlined canal on Canal Ranch Tract would be the same as described for the Eastern Corridor in the *Summary of Utility Crossings TM* (DCDCA, 2021a).

2.5 City of Stockton Municipal Utilities Department

The Bethany Reservoir Alternative crossing with the City of Stockton Municipal Utilities Department's (SMUD's) Stockton Delta Water Supply raw water pipeline on King Island would be the same as described for the Eastern Corridor in the *Summary of Utility Crossings TM* (DCDCA, 2021a).

2.6 Byron-Bethany Irrigation District

The Bethany Reservoir Alternative crossings with Byron-Bethany Irrigation District's (BBID) raw water supply pipeline to Mountain House along the Byron Highway would be the same as described for the Central and Eastern Corridors in the *Summary of Utility Crossings TM* (DCDCA, 2021a) for all capacity options. The portion of the pipeline along Bruns Road would not be affected. The Bethany Reservoir Alternative would also include an additional crossing with the raw water supply pipeline to Mountain House at the proposed Byron Highway interchange at Lindemann Road. For construction of this facility, coordination with BBID would occur during the design phase to avoid interference or interruption of service.

In addition to the crossings identified for the Central and Eastern Corridors, the Bethany Reservoir Alternative would cross BBID's Main Canal (45) and Canal and 70 several times. The Bethany Reservoir Aqueduct would cross under BBID's Canal 45 between the Delta-Mendota Canal and Bethany Reservoir

south of Kelso Road. For this crossing, coordination with BBID would occur during the design phase to avoid interference or interruption of service. The supervisory control and data acquisition (SCADA) alignment between the Delta Field Division Area Control Center (DACC) and the proposed Bethany Pumping Plant and the temporary access road and proposed underground power to the controlled low-strength material (CLSM) batch plant would also cross over Canal 45 at the Kelso Road canal bridge and south of Kelso Road, respectively. For the SCADA crossing, the new fiber line would be installed within the existing bridge and would not be expected to interrupt service, and for the access road and power crossing, a new bridge over the canal would be required to avoid interference or interruption of service. Roadway improvements to Mountain House Road at the Canal 70 and Canal 120 canal bridges, though these would not be expected to disrupt service. The proposed access road from the west side of the CLSM bath plant area south to Mountain House Road would also cross over Canal 70 again, and a new bridge would be required to avoid interference or interruption of service.

2.7 East Bay Municipal Utility District

The Bethany Reservoir Alternative crossings with East Bay Municipal Utility District (EBMUD) Mokelumne Aqueducts on Lower Roberts Island and Upper Jones Tract would be the same as described for the Eastern Corridor in the *Summary of Utility Crossings TM* (DCDCA, 2021a).

2.8 Other Irrigation and Agricultural Drainage Facilities

Many construction sites are located on existing agricultural lands. Local irrigation and drainage facilities have been installed by existing and previous landowners at most of the construction sites, including groundwater wells. These facilities are owned by private landowners, or potentially by reclamation or irrigation districts. Many of these systems include facilities that either provide irrigation water or convey subsurface drainage between the parcels that would be acquired for the DCP and adjacent parcels. Most of these facilities are buried and cannot be identified from aerial photographs. During the design phase when access to specific parcels can be acquired, these buried facilities would be mapped on a site-specific basis. If the facilities located on a parcel to be used for a DCP feature extends to adjacent parcels, the irrigation or drainage conveyance would be installed in underground pipes or canals through, or around, the construction site parcels to maintain service to the adjacent properties.

During a future design phase, the depths and conditions of wells adjacent to the construction sites would also be evaluated.

The design would be coordinated with adjacent landowners to maintain wells and water supplies for the existing water uses on properties adjacent to the constructed facilities.

3. Oil and Natural Gas

3.1 Pacific Gas and Electric

In total, above and belowground Bethany Reservoir Alternative facilities would intersect with existing Pacific Gas and Electric (PG&E) natural gas lines 19 times. The majority of Bethany Reservoir Alternative crossings with PG&E natural gas lines would be the same as described for the Eastern Corridor in the *Summary of Utility Crossings TM* (DCDCA, 2021a). The exceptions to these include those crossings within the Southern Complex for the Central and Eastern Corridors since the Bethany Reservoir Alternative would not have any crossings in that vicinity. Additionally, the Bethany Reservoir Alternative would have several crossings with dual PG&E natural gas lines running generally southeast between Bethany Reservoir and

the Byron Highway which would not exist under the Central and Eastern Corridors (CEC, 2015; EIA, 2019). These crossings would include one with the Bethany Aqueduct, one on Mountain House Road where roadway improvements would occur, and two along the proposed SCADA alignment. Due to the expected depth of the PG&E pipelines, it is assumed that the roadway improvements and SCADA line would have no impact on the existing lines. However, at the Aqueduct crossing, the depth of the Aqueduct would need to be coordinated with PG&E during the design phase to avoid interference or interruption of service.

3.2 Lodi Gas Storage, LLC

The Bethany Reservoir Alternative crossings with the Lodi Gas Storage, LLC (Lodi Gas) 20-inch gas pipeline on Brack Tract would be the same as described for the Eastern Corridor in the *Summary of Utility Crossings TM* (DCDCA, 2021a).

3.3 California Resources Company

Several of the Bethany Reservoir Alternative crossings with the California Resources Company (CRC) 12-inch natural gas pipeline along Byron Highway and around the southern end of Clifton Court Forebay would be the same as described for the Central and Eastern Corridors in the *Summary of Utility Crossings TM* (DCDCA, 2021a). However, the Bethany Reservoir Alternative would not include any crossings north of the California Aqueduct, resulting in several fewer crossings. The crossings that would occur under the Bethany Reservoir Alternative include two tunnel crossings, one under the southern bank of Old River just east of the Clifton Court Forebay inlet structure and one at Byron Highway south of Mountain House Road, and the proposed water supply pipeline between the California Aqueduct and the Bethany Complex would also cross the gas pipeline near the intersection of Byron Highway and Herdlyn Road. It is assumed that the CRC pipeline would be located within 10 feet of the ground surface in these locations and would not be affected by the tunnel construction, though the proposed water supply pipeline would be at a similar depth. During the design phase, coordination with CRC would occur to avoid interference or interruption of service.

3.4 Miscellaneous Fuel Pipelines

Above- and belowground Bethany Reservoir Alternative facilities would intersect with existing active and abandoned petroleum and petroleum product pipelines operated by Kinder Morgan, Phillips 66, Crimson Pipeline, and the now-bankrupt Tidewater Oil Company and Venoco a total of 9 times for the 7,500 cfs capacity option and 8 times for all other capacity options. Several of the Bethany Reservoir Alternative crossings with fuel lines would be the same as described for the Eastern Corridor in the *Summary of Utility Crossings TM* (DCDCA, 2021a); however, the majority would be different crossings.

Similar to the CRC crossings, the Bethany Reservoir Alternative would not include any crossings with fuel pipelines north of the California Aqueduct. The Bethany Reservoir Alternative, however, would include several additional crossings with fuel pipelines running generally southeast between Bethany Reservoir and the Byron Highway which would not exist under the Central and Eastern Corridors (EIA, 2018). These crossings would include the proposed SCADA alignment, as well as the Bethany Reservoir Aqueducts, and the proposed Byron Highway interchange at Lindemann Road. Similar to the conclusions under the BBID and PG&E crossings in this area, it is anticipated that the SCADA alignment would have no impact on the existing fuel lines but that the pipeline owner/operators would need to be coordinated with regarding other project facilities during the design phase to avoid interference or interruption of service.

4. Communications

As described in the *Summary of Utility Crossings TM* (DCDCA, 2021a), extensive surveys would be completed during the design phase to identify locations and potential crossings of these communication lines to avoid conflicts. The SCADA system for the DCP would be connected to the existing facilities, as described in the *SCADA/Communications Routing and Basic Design Approach TM – Bethany Reservoir Alternative* (DCDCA, 2021b).

5. Electricity

Interfaces with existing overhead and underground electric transmission and distribution infrastructure is discussed in detail in the *Electrical Power Load and Routing Study TM – Bethany Reservoir Alternative* (DCDCA, 2021c).

6. References

California Energy Commission (CEC). 2015. Natural Gas Pipeline. Updated February 24, 2015. Obtained from Department of Water Resources (DWR) Atlas Pipeline Geographic Information Systems (GIS) data layer.

Delta Conveyance Design and Construction Authority (DCDCA). 2021a. Summary of Utility Crossings. Draft. June.

Delta Conveyance Design and Construction Authority (DCDCA). 2021b. SCADA/Communications Routing and Basic Design Approach TM – Bethany Reservoir Alternative. Final Draft. April.

Delta Conveyance Design and Construction Authority (DCDCA). 2021c. Electrical Power Load and Routing Study TM – Bethany Reservoir Alternative. Final Draft. April.

U.S. Energy Information Administration (EIA). 2018. Petroleum Product Pipeline. Updated January 2018. Obtained from Department of Water Resources (DWR) Atlas Pipeline Geographic Information Systems (GIS) data layer.

U.S. Energy Information Administration (EIA). 2019. Natural Gas Pipelines. Updated October 8, 2019. Obtained from Department of Water Resources (DWR) Atlas Pipeline Geographic Information Systems (GIS) data layer.

7. Document History and Quality Assurance

Reviewers listed have completed an internal quality review check and approval process for deliverable documents that is consistent with procedures and directives identified by the Engineering Design Manager (EDM) and the DCA.

Approval Names and Roles			
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