# Winterhaven Last Mile Underserved Broadband Project

## Draft

## Initial Study/Environmental Assessment and Mitigated Negative Declaration

CPUC Resolution T-17410

**Prepared for:**

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# Acronyms and Abbreviations

| | |
|---|---|
| APE | area of potential effects |
| ARPA | Archaeological Resources Protection Act of 1979 |
| ASM | Arizona State Museum |
| AST | aboveground storage tank |
| ATCM | airborne toxic control measure |
| AVR | average vehicle ridership |
| BIA | Bureau of Indian Affairs |
| BLM | Bureau of Land Management |
| BMP | best management practice |
| ºC | Celsius |
| CAA | Federal Clean Air Act |
| Cal FIRE | California Department of Forestry and Fire Protection |
| Cal OES | California Office of Emergency Services |
| CalARP | California Accidental Release Prevention |
| CalEEMod | California Emissions Estimator Model |
| CalEPA | California Environmental Protection Agency |
| Cal/OSHA | California Occupational Safety and Health Administration |
| Caltrans | California Department of Transportation |
| CAMA | California–Arizona Maneuver Area |

| | |
|---|---|
| CARB | California Air Resources Board |
| CASF | California Advanced Services Fund |
| CASQA | California Storm Water Quality Association |
| CBC | California Building Standards Code |
| CDFA | California Department of Food and Agriculture |
| CDFW | California Department of Fish and Wildlife |
| CDOC | California Department of Conservation |
| CDWR | California Department of Water Resources |
| CEQ | Council on Environmental Quality, United States Department of Energy |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CESA | California Endangered Species Act |
| cf | cubic feet |
| CFR | Code of Federal Regulations |
| CGS | California Geological Survey |
| CHP | California Highway Patrol |
| CHRIS | California Historical Resources Information System |
| CIPC | California Invasive Plant Council |
| CIWMB | California Integrated Waste Management Board |
| cm | centimeters |
| CNDDB | California Natural Diversity Database |
| CNEL | community noise equivalent level |
| CNPS | California Native Plant Society |
| CO | carbon monoxide |
| $CO^2$ Eq. | carbon dioxide equivalent |
| $CO^2$ | carbon dioxide |
| CPUC | California Public Utilities Commission |
| CRHR | California Register of Historical Resources |
| CUPA | Certified Unified Program Agency |
| CWA | Clean Water Act |
| dB | decibel |
| dBA | A-weighted decibel |
| DLC | digital loop carrier |
| DOT | California Department of Transportation |
| DSA | digital serving area |
| DTC | Desert Training Center |
| DTSC | California Department of Toxic Substances Control |
| E.O. | Federal Executive Order |
| EA | environmental assessment |
| EIR | environmental impact report |
| ESA | Endangered Species Act |
| $^oF$ | Fahrenheit |
| FEMA | Federal Emergency Management Agency |
| FHWA | Federal Highway Administration |
| FIRM | FEMA Flood Insurance Rate Map |
| FMMP | Farmland Mapping and Monitoring Program |
| FONSI | Finding of No Significant Impact |
| FPPA | Farmland Protection Policy Act |
| FTA | Federal Transit Administration |
| FTTN | fiber to the node |
| GHG | greenhouse gas |

| | |
|---|---|
| GLO | General Land Office |
| HAP | hazardous air pollutant |
| HAZWOPER | OSHA Hazardous Waste Operations and Emergency Response |
| HCP | habitat conservation plan |
| HDPE | high-density polyethylene |
| HUC | Hydrologic Unit Code |
| Hz | Hertz |
| ICAPCD | Imperial County Air Pollution Control District |
| ICTC | Imperial County Transportation Commission |
| IPAC | USFWS Information, Planning, and Conservation System |
| IS | initial study |
| ITA | Indian Trust Asset |
| Kbps | kilobits per second |
| K-factor | soil erodibility factor |
| km | kilometers |
| kV | kilovolts |
| lbs | pounds |
| LCR MSCP | Lower Colorado River Multi-Species Conservation Program |
| $L_{dn}$ | day–night sound level |
| $L_{eq}$ | equivalent sound level |
| $L_{max}$ | maximum sound level |
| $L_{min}$ | minimum sound level |
| LOS | level of service |
| $L_{xx}$ | percentile-exceeded sound level |
| m | meters |
| $m^3$ | cubic meters |
| Mbps | megabits per second |
| MBTA | Migratory Bird Treaty Act |
| µg | micrograms |
| MLD | most likely descendent |
| MND | Mitigated Negative Declaration |
| mph | miles per hour |
| MSDS | material safety data sheet |
| MT | metric tons |
| MTBE | methyl tertiary butyl ether |
| MUTCD | California Manual on Uniform Traffic Control Devices |
| NAAQS | National Ambient Air Quality Standards |
| NAGPRA | Native American Graves Protection and Repatriation Act |
| NAHC | California Native American Heritage Commission |
| NEHRP | National Earthquake Hazards Reduction Program |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act of 1966 |
| NHTSA | National Highway Traffic Safety Administration |
| NIST | National Institute of Standards and Technology |
| NMFS | National Marine Fisheries Service |
| $NO_2$ | nitrogen dioxide |
| $NO_x$ | nitrogen oxides |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priorities List |
| NPPA | Native Plant Protection Act |
| NRHP | National Register of Historic Places |

| | |
|---|---|
| NSF | National Science Foundation |
| O&M | operation and maintenance |
| OEHHA | California Office of Environmental Health Hazard Assessment |
| OHP | California Office of Historic Preservation |
| OPR | California Governor's Office of Planning and Research |
| OSHA | Occupational Safety and Health Administration |
| PEA | Proponent's Environmental Assessment |
| PM | particulate matter |
| $PM_{10}$ | particulate matter of aerodynamic radius of 10 micrometers or less |
| $PM_{2.5}$ | particulate matter of aerodynamic radius of 2.5 micrometers or less |
| ppm | parts per million |
| PPV | peak particle velocity |
| PRC | Public Resources Code |
| proposed project | proposed Winterhaven Last Mile Broadband Project |
| RCRA | Resource Conservation and Recovery Act of 1976 |
| ROG | reactive organic gas |
| ROW | right of way |
| RTP/SCS | Imperial County Regional Transportation Plan/Sustainable Communities Strategy |
| RWQCB | Regional Water Quality Control Board |
| SCAG | Southern California Association of Governments |
| SCIC | South Coastal Information Center |
| SDR | standard dimension ratio |
| SHPO | State Historic Preservation Officer |
| SIP | State Implementation Plan |
| SLF | Sacred Lands File |
| SMARA | Surface Mining and Reclamation Act |
| SPRR | Southern Pacific Railroad |
| SPVUSD | San Pasqual Valley Unified School District |
| SWPPP | stormwater pollution prevention plan |
| SWRCB | California State Water Resources Control Board |
| TAC | toxic air contaminant |
| TCP | traditional cultural property |
| TCR | tribal cultural resource |
| TDS | TDS Telecom, Inc. |
| U.S. | United States |
| UPRR | Union Pacific Railroad |
| USACE | U.S. Army Corps of Engineers |
| USC | United States Code |
| USEPA | U.S. Environmental Protection Agency |
| USGS | U.S. Geological Survey |
| USFWS | U.S. Fish and Wildlife Service |
| UST | underground storage tank |
| VdB | vibration velocity decibels |
| VDSL2 | second-generation very-high-bit-rate digital subscriber line |
| WDR | waste discharge requirement |
| WRCC | Western Regional Climate Center |
| WUS | Waters of the U.S. |
| WWD | Winterhaven Water District |
| YCIPTA | Yuma County Intergovernmental Public Transportation Authority |
| YCWUA | Yuma County Water User's Association |

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# Draft Mitigated Negative Declaration

## Winterhaven Last Mile Underserved Broadband Project

## 1.0 Draft Mitigated Negative Declaration

### 1.1 Introduction

On February 1, 2013, the Winterhaven Telephone Company doing business as TDS Telecom, Inc. (TDS or the applicant) submitted an application to the California Public Utilities Commission (CPUC) for California Advanced Services Fund (CASF) funding for its proposed Winterhaven Last Mile Broadband Project (proposed project). Grants from the CASF to *telephone corporations*[1] are authorized by the CPUC to promote the deployment of advanced communications services to unserved and underserved areas in California (CPUC 2014). On October 3, 2013, CPUC approved Resolution T-17410 to award the applicant a $2,063,967 grant for the proposed project in Imperial County, California.

The proposed project would enable the applicant to provide high-speed internet service to the community of Winterhaven, California, and other unincorporated areas of Imperial County and areas within the Fort Yuma Indian Reservation. CPUC Resolution T-17410 found that proposed project is subject to review pursuant to the California Environmental Quality Act (CEQA) and requires that the applicant provide a Proponent's Environmental Assessment (PEA). On April 30, 2015, TDS submitted a PEA to CPUC, and CPUC deemed the PEA complete on June 24, 2015. In addition, the proposed project would involve the granting of right-of-ways on the Fort Yuma Indian Reservation by the United States Department of the Interior, Bureau of Indian Affairs (BIA). BIA's granting of right-of-ways is a federal action subject to review pursuant to the National Environmental Policy Act (NEPA).

The CPUC, which is the state agency responsible for CASF grant allocation, will serve as the lead agency under CEQA, and the BIA will serve as the federal lead agency under NEPA (CPUC and BIA 2015). The federal Bureau of Reclamation will act as a cooperating agency under NEPA because the project would cross irrigation canals under the Bureau of Reclamation's jurisdiction. The CPUC prepared a joint Initial Study/Environmental Assessment (IS/EA) that meets both the CEQA IS requirements and NEPA EA requirements. The CPUC completed this Mitigated Negative Declaration (MND) for the proposed project based on the findings documented in the IS/EA. The BIA may choose to issue a Finding of No Significant Impact (FONSI) based on the findings documented in the IS/EA. BIA's determination will be documented under separate cover.

[1] California Public Utilities Code (PUC) Section 234 defines *telephone corporations* as corporations or persons owning, controlling, operating, or managing telephone lines for compensation within this State.

## 1.2 Contact Information

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## 1.3 Requirements and Terminology Specific to CEQA and NEPA

The IS/EA was prepared in compliance with both CEQA and NEPA. The approach taken to ensure consistency with these statutes and their respective regulatory guidelines is described in Appendix A of the IS/EA. Section 2.0.1, "CEQA/NEPA Approach, Terminology, and Impact Analysis Methodology," includes a further discussion of the terminology used to discuss impacts.

## 1.4 Project Purpose, Need, and Objectives

The purpose of the proposed project is to provide high-speed internet service to a 15.67-square-mile area (proposed project area) that includes the Winterhaven community and other unincorporated areas of Imperial County and areas within the Fort Yuma Indian Reservation. As defined by CPUC Decision 12-02-015, the need of the proposed project is predicated on the fact that these areas are *underserved*—broadband is available, but no facilities-based provider offers service at speeds of at least 3 megabits per second (Mbps) for downloads and 1 Mbps for uploads (CPUC 2012). The purpose and need for the proposed project aligns with Senate Bill 1193 (approved in 2008 and codified in PUC Section 281) to approve funding

for infrastructure projects that will provide *broadband*[2] access to 98 percent or more of California households.

Specific objectives of the proposed project include:

- providing affordable broadband Internet services available to currently underserved areas in Imperial County, including a portion of the Fort Yuma Indian Reservation, so that these areas are not left behind technologically compared to other areas in California; and
- delivering high-speed internet speeds of 25 Mbps for downloads and 5 Mbps for uploads.

## 1.5 Project Description and No Project Alternative

This section describes the proposed project and the No Project Alternative. The identification and evaluation of alternatives is not required in a CEQA IS/MND. Under NEPA, however, an EA must include the evaluation of feasible action alternatives except in cases when there are no unresolved conflicts associated with the proposed action (NEPA Section 102(2)(E), 43 Code of Federal Regulations [CFR] Section 46.310(b), Indian Affairs 2012). No alternatives to the proposed project are evaluated in this IS/EA other than the No Project Alternative because there are no unresolved conflicts with respect to the proposed project. Under NEPA, the No Project Alternative is still considered because it provides a baseline for comparison of environmental effects and demonstrates the consequences of not meeting the need for the action (Indian Affairs 2012).

The proposed project described in this IS/EA is the NEPA Proposed Action.

### 1.5.1 Proposed Project

The information presented in this section is from the PEA prepared for the proposed project (Tierra Right of Way Services 2015c), unless otherwise indicated.

#### *Project Location*

The project area is depicted in Figure 1.5-1. It is located in southeastern Imperial County, California, just north of Yuma, Arizona, and the Colorado River. Baseline Road, which runs north–south, marks the boundary between the Fort Yuma Indian Reservation and private land; the reservation is west of Baseline Road, and private land lies to the east. The southern edge of the project area is roughly bounded by the Union Pacific Railroad (UPRR) tracks, the community of Winterhaven, and the Paradise Casino on Picacho Road. The Cocopah Canal runs along the eastern boundary of the project area and the community of Bard is located at the northeastern limits of the project area. Stalnacker and Ross Roads, along with the community of Ross Corner, make up the approximate northern limits of the project area, and the western edge of the project area is near Arnold Road, where the road approaches the UPRR.

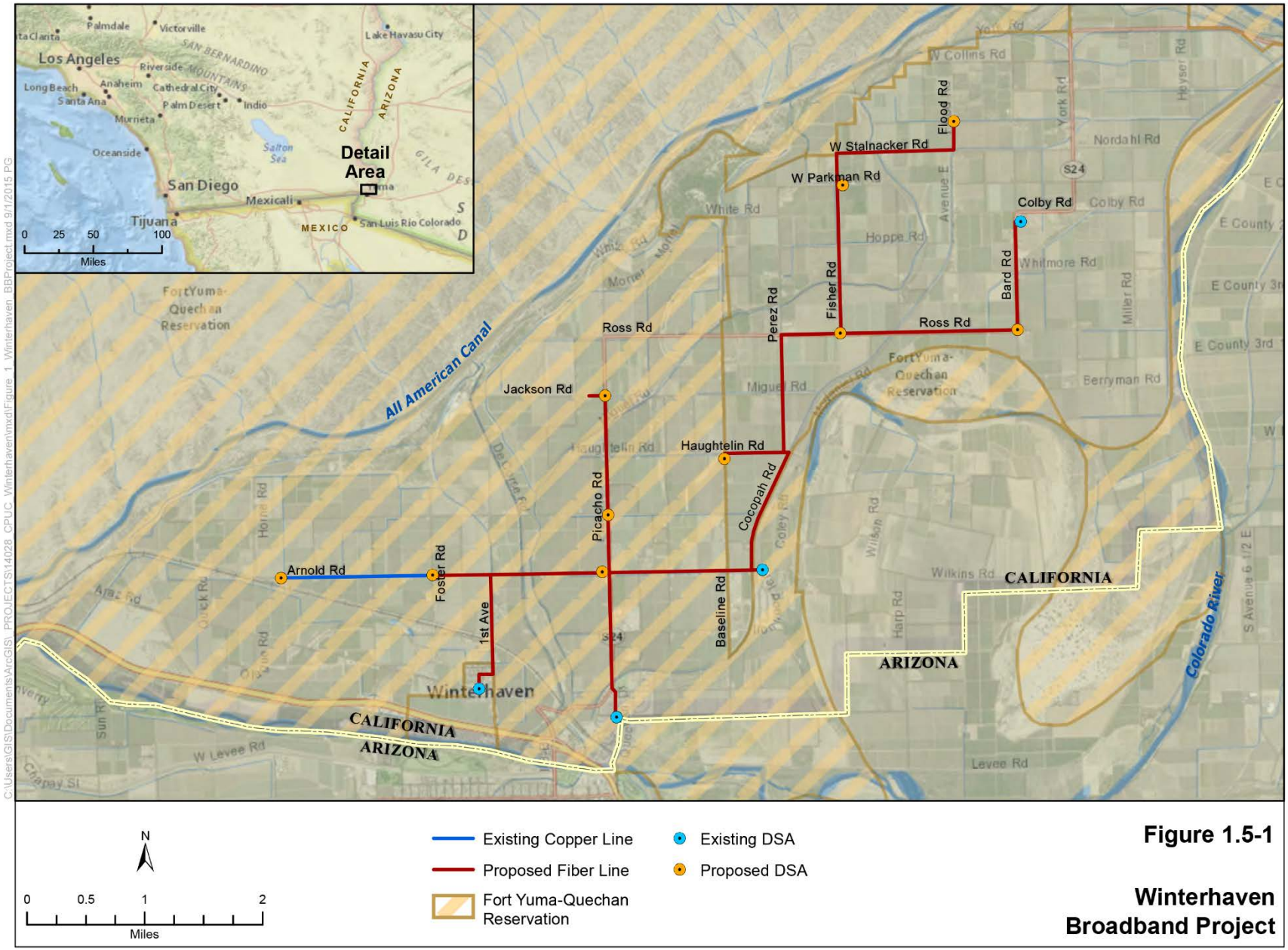
[2] The term *broadband* refers to the width of frequency bands used to transmit data or voice communications over the Internet. Depending on the width of the frequency band, information can be sent on many different frequencies or channels with broadband concurrently, allowing for advanced services, including video, to be transmitted at much faster speeds than would otherwise be available over a dial-up telephone connection to the Internet (CPUC 2012).

Local land uses within the rural project area are primarily agriculture. Other land uses include a school complex, and some residences and commercial buildings in the communities of Winterhaven, Bard, and Ross Corner.

### *Overview*

The proposed project involves the construction of a 15.3 mile fiber-optic network, using second-generation, very-high-bit-rate digital subscriber line (VDSL2) technology[3], capable of providing 25 Mbps/5 Mbps (download/upload) speeds. The proposed network would also use existing copper lines and connection points to provide telecommunications information from the TDS central office location to this underserved area. Additional information on specific project facilities, construction methods, and operation of the project is provided below.

[3] Second-generation VDSL2 technology refers to an advanced, faster form of wireline transmission technology that has greater data transfer speeds than previous DSL technologies (FCC 2015). The VDSL2 technology can be used in combination with fiber optic cables to provide faster speeds at locations farther from a service provider's central office (Vanhastel and Van Daele ND).


Detail Area
Los Angeles
San Diego
Tijuana
Mexicali
MEXICO
San Luis Rio Colorado
Lake Havasu City
Palmdale
Victorville
Riverside
Anaheim
Long Beach
Santa Ana
Cathedral City
Palm Desert
Indio
Murrieta
Oceanside
Salton Sea
CALIFORNIA
ARIZONA
SAN BERNARDINO MOUNTAINS
0 25 50 100
Miles
Fort Yuma-Quechan Reservation
All American Canal
Ross Rd
Jackson Rd
Haughtelin Rd
Arnold Rd
Foster Rd
1st Ave
Picacho Rd
Perez Rd
Fisher Rd
Cocopah Rd
Baseline Rd
Bard Rd
Flood Rd
W Stalnacker Rd
W Parkman Rd
Colby Rd
Whitmore Rd
Hoppe Rd
White Rd
Wilkins Rd
Levee Rd
W Levee Rd
Winterhaven
CALIFORNIA
ARIZONA
Colorado River
S24
0 0.5 1 2
Miles
Existing Copper Line
Proposed Fiber Line
Fort Yuma-Quechan Reservation
Existing DSA
Proposed DSA
Figure 1.5-1
Winterhaven Broadband Project

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### *Project Components*

The proposed project would consist of the following components:

- Installation of approximately 80,860 feet of 96-count, shielded fiber-optic telecommunications cable within protective 1.25-inch-diameter, high-density polyethylene (HDPE), standard dimension ratio (SDR)–11 conduits.
- Installation of 10 equipment cabinets on top of buried epoxy composite vaults at digital loop carrier (DLC) sites that would serve as telecommunications nodes.[4]
- Installation of splice boxes and line markers.
- Connection of existing copper lines on Arnold Road to proposed node (DLC) sites and the proposed fiber-optic network.
- Clean-up and site restoration following construction.

Figure 1.5-1 provides an overview of the proposed network, including the locations of the proposed fiber-optic cable and nodes, and existing nodes and copper line. A summary of the associated cable lengths to be installed on and off the Fort Yuma Indian Reservation can be found in Table 1.5-1.

The equipment cabinets would be approximately 2.0 by 3.0 by 4.0 feet in size and would be installed on top of buried vaults within an approximately 20-foot-square area. Splice boxes are small, rectangular metal enclosures that would be installed between lengths of cable. Line markers, which would be installed at intervals of approximately five per mile, are approximately 4.0 feet tall and made of flexible fiberglass. Electrical power for the new digital loop carrier sites would be provided by existing aerial distribution lines located immediately adjacent to each site. Project plans are included in Appendix B.

**Table 1.5-1. Cable Installation Lengths**

| Installation | Length (m) | Length (km) | Length (feet) | Length (miles) |
|---|---|---|---|---|
| On-Reservation | 10,139 | 10.14 | 33,264 | 6.30 |
| Off-Reservation | 14,507 | 14.51 | 47,595 | 9.01 |
| **Total** | **24,646** | **24.65** | **80,859** | **15.31** |

*Source: Tierra Right of Way Services 2015c*

### *Right-of-Way Requirements*

The portions of the proposed project located on tribal land are located on allotments that would require right-of-way (ROW) grants from BIA with consent from the associated landowners prior to the telecommunications line installation. The remaining portions of the project located on non-tribal land would require county road ROW encroachment permits from Imperial County. Table 1.5-2 shows the allotments on tribal land that would require ROW grants and the estimated ROW areas on each allotment that would be required for the proposed project.

[4] The proposed project would be a fiber to the node (FTTN) network, which is one option for providing telecommunications services to multiple destinations. These networks provide broadband connection and other data services through a common network box, which is often called a node. The remaining area from the node to an individual destination, often called "last mile" service, can be achieved with copper wires. (Techopedia 2015).

**Table 1.5-2. Allotment Right-of-Way Areas**

| Allotment Name | Right-of-Way Area (acres) | Right-of-Way Area (sq ft) | Right-of-Way Length (ft) |
|---|---|---|---|
| 1 | 0.152 | 6,630 | 673 |
| 8 | 0.152 | 6,631 | 673 |
| 9 | 0.152 | 6,638 | 674 |
| 21 | 0.152 | 6,632 | 673 |
| 25 | 0.152 | 6,632 | 673 |
| 51 | 0.152 | 6,613 | 671 |
| 71 | 0.152 | 6,631 | 673 |
| 72 | 0.201 | 8,772 | 845 |
| 113 | 0.152 | 6,609 | 671 |
| 114 | 0.152 | 6,608 | 671 |
| 115 | 0.152 | 6,608 | 671 |
| 116 | 0.302 | 13,150 | 1326 |
| 117 | 0.152 | 6,641 | 674 |
| 149 | 0.152 | 6,631 | 673 |
| 151 | 0.152 | 6,631 | 673 |
| 157 | 0.151 | 6,597 | 670 |
| 168 | 0.153 | 6,643 | 674 |
| 172 | 0.153 | 6,643 | 674 |
| 183 | 0.167 | 7,271 | 696 |
| 187 | 0.152 | 6,642 | 674 |
| 200 | 0.152 | 6,642 | 674 |
| 202 | 0.152 | 6,642 | 674 |
| 214 | 0.152 | 6,629 | 673 |
| 221 | 0.152 | 6,608 | 671 |
| 254 | 0.148 | 6,442 | 663 |
| 319 | 0.152 | 6,613 | 671 |
| 368 | 0.126 | 5,498 | 671 |
| 371 | 0.152 | 6,614 | 671 |
| 373 | 0.152 | 6,633 | 673 |
| 374 | 0.152 | 6,630 | 673 |
| 395 | 0.152 | 6,641 | 674 |
| 396 | 0.152 | 6,641 | 674 |

| Allotment Name | Right-of-Way Area (acres) | Right-of-Way Area (sq ft) | Right-of-Way Length (ft) |
|---|---|---|---|
| 406 | 0.157 | 6,836 | 694 |
| 414 | 0.096 | 4,181 | 669 |
| 415 | 0.098 | 4,277 | 673 |
| 436 | 0.151 | 6,598 | 670 |
| 446 | 0.138 | 6,005 | 646 |
| 452 | 0.152 | 6,642 | 674 |
| 470 | 0.152 | 6,628 | 673 |
| 478 | 0.152 | 6,611 | 671 |
| 479 | 0.152 | 6,612 | 671 |
| 484 | 0.152 | 6,613 | 671 |
| 538 | 0.151 | 6,597 | 670 |
| 544 | 0.152 | 6,643 | 674 |
| 545 | 0.152 | 6,643 | 674 |
| 570 | 0.152 | 6,630 | 673 |
| 571 | 0.152 | 6,630 | 673 |
| 572 | 0.152 | 6,613 | 672 |
| 573 | 0.152 | 6,608 | 671 |
| 615 | 0.165 | 7,208 | 691 |
| 629 | 0.152 | 6,632 | 673 |
| 630 | 0.051 | 2,241 | 196 |
| 703 | 0.152 | 6,608 | 671 |
| 736 | 0.151 | 6,597 | 670 |
| 751 | 0.152 | 6,608 | 671 |
| 752 | 0.152 | 6,609 | 671 |
| 829 | 0.152 | 6,613 | 671 |
| 853 | 0.152 | 6,631 | 673 |

### *Construction*

This section provides details on the project's construction activities and incorporates the following construction-related project design element into the project:

**Project Design Element CON-1:** If a situation warrants open trenching, TDS will adhere to California Department of Transportation's (DOT) construction manual and the appropriate local municipality's utility guidelines for trenching restoration (CPUC Resolution T-17410).

### *Staging Areas*

All equipment and material staging would take place either at the TDS Winterhaven Central Office, located at 512 2nd Street, Winterhaven, California, or at individual contractors' off-site yards. No staging areas would be required in the project area during construction of the proposed project.

### *Communications Line Installation*

The line installation would be performed in three steps. First, protective conduit for the fiber-optic cable would be installed by either plowing or directional boring construction methods. Second, the conduit would be prepared for receiving the fiber-optic cable by "pigging." This process involves forcing a cleaning sponge, or "pig," through the conduit using compressed air to clean and lightly lubricate the inside of the conduit. Third, the fiber-optic cable would be "blown" through the conduit using compressed air. The total combined ground disturbance associated with the project, including both the plowed and bored installations, would not exceed an area approximately 12.5 acres in size.

#### Plowed Installations

Approximately 68,101 feet of the proposed installations would be performed using plowing construction techniques. Plowed conduit is installed using a track-type bulldozer equipped with a specialized single ripper that loosens the soil along the installation path. Conduit is fed either from the plow bulldozer or from a separate truck-mounted reel through a plow chute attached to the ripper and laid directly at a nominal depth of 3.3 feet. A compaction machine follows directly behind the plow bulldozer and restores the ground surface to its original contour. The installation path may be "pre-ripped" by a second bulldozer, if necessary, to loosen the soil in areas where subsurface rock or other buried obstructions may be present. This second bulldozer may also, in some cases, be attached to the plow bulldozer to provide additional pulling power for the plowing operation. Ground disturbance associated with the plowed installation would be limited to an approximately 8.0-foot-wide corridor.

#### Directional Bore Installation

Approximately 12,758 feet of the proposed installations would be performed using directional boring construction techniques. Directional boring is a method used to install utility lines under waterways, roads, and other areas where the avoidance of surface disturbance is desirable (Figure 3). Directional boring machines are essentially horizontal drilling rigs with a steerable drill bit. Each bore begins with creating a pilot hole, where the drill bit is guided by the operator as it progresses along the desired boring path. After boring the pilot hole, conduit is attached to the end of the drill string and the conduit is pulled back through the bore.

Two boring pits for bore ingress and egress would be required for each canal and road crossing installation, one on each side of the canal or road. These bore pits would be approximately 8.0 feet square and would be located at varying distances from the canals or roads. The depth of the bore would be a minimum of 5.0 feet below the bottom of the canals and roads, and the bore lengths would be variable. The bores would be of sufficient diameter to accommodate the 1.25-inch-diameter conduit and would be drilled using drilling fluid "mud" consisting of sodium bentonite and water. The drilling mud serves two purposes: first, it lubricates the drill bit; second, it seals the bore with an impermeable layer of sodium bentonite, keeping the bore from collapsing. As drilling mud accumulates in the bore pits, it would be evacuated using a trailer-mounted "mud-sucker" pump for reuse and/or appropriate disposal. In some cases, such as directional bores located beneath earthen canals, the entire bore would be grouted after conduit installation with a drilling mud/concrete mixture to provide a solid barrier that would prevent seepage flow from the canal in accordance with Bureau of Reclamation guidelines.

Following the installation of the conduit beneath the canal or road, the bore pits would be filled in, compacted, and the ground surface restored to its original contour. The locations of all canal bores associated with the project are summarized in Table 1.5-3. Ground disturbance associated with the bored conduit installations would occur within the same 8.0-foot-wide corridor as the plowed installations.

**Table 1.5-3. Canal Bore Locations**

| Map No. | Canal Name | Location of crossing | Canal Width |
|---|---|---|---|
| 1 | Reservation Main Drain | Stalnacker Road | 20.5 m (67 feet) |
| 2 | Unnamed canal | Fisher and Parkman Roads | 3.6 m (12 feet) |
| 3 | 3 Reservation Main Drain | Fisher Road | 19.6 m (64 feet) |
| 4 | Hopi Canal | Bard and Whitmore Roads | 6.3 m (21 feet) |
| 5 | Cocopah Canal | Ross Road | 9.0 m (30 feet) |
| 6 | Unnamed canal | Fisher and Ross Roads | 5.3 m (17 feet) |
| 7 | Papago Canal | Perez Road | 4.5 m (15 feet) |
| 8 | Pima Canal | Haughtelin and Perez Roads | 4.5 m (15 feet) |
| 9 | Cocopah Canal | Flood and Arnold Roads | 7.0 m (23 feet) |
| 10 | Navajo Canal | Picacho and Jackson Roads | 7.3 m (24 feet) |
| 11 | Reservation Main Drain | Picacho Road | 27.3 m (90 feet) |
| 12 | Pima Canal | Picacho and Haughtelin Roads | 3.7 m (12 feet) |
| 13 | Pueblo Canal | Picacho and Indian Rock Roads | 3.6 m (12 feet) |
| 14 | Cocopah Canal | Picacho Road | 8.3 m (27 feet) |
| 15 | Reservation Main Drain | Arnold Road | 27.3 m (90 feet) |
| 16 | Yuma Main Canal | Arnold Road | 46.0 m (151 feet) |
| 17 | Walapai Canal | Arnold Road | 2.4 m (8 feet) |

*Source: Tierra Right of Way Services 2015d*

### *Node Installation*

Communications node (DLC) installation would begin with excavating a hole measuring 3 feet long by 6 feet wide by 4 feet deep using a backhoe. An epoxy composite vault would then be placed, backfilled, and covered with gravel after the subsurface connections to the associated telecommunications lines are made. The vault cover would then be installed, onto which an equipment cabinet would be bolted to serve as the connecting point between the new fiber-optic lines and customers' copper service drops.

### *Surface Restoration*

Following the telecommunications line and digital loop carrier installations, TDS and/or their contractors would promptly perform site clean-up and surface restoration. Clean-up would include removing all construction debris, and surface restoration would involve returning the surface contours of disturbed areas to their pre-construction condition.

### *Construction Workforce and Equipment*

Preliminary construction workforce estimates indicate that one plow crew, two directional-boring crews, one splice crew, and one clean-up crew would be required to install the telecommunications lines associated with the project; each of these crews would consist of three to four workers. An additional two-person crew would be needed to construct the node sites. All work crews are anticipated to work standard eight-hour days, five days a week. Construction equipment necessary to complete the installations is anticipated to consist of:

- Two D5-class bulldozers for the plowed installations.
- Two directional boring machines (Vermeer D20x22 S3 or equivalent).
- Two trailer-mounted mud-sucker pumps for drilling mud evacuation and recovery.
- Two backhoes (Case 580x or equivalent).
- One medium-duty (5-ton), spray-bar-equipped water truck for dust control.
- One medium-duty (2.5–5.0-ton) flatbed truck for reel and underground vault delivery.
- Two trailer-mounted air compressors for conduit pigging and blowing fiber-optic line.
- Three to four light-duty pickups (0.5- and 0.75-ton) for crew transport.

### *Construction Schedule*

The anticipated construction start date for the proposed project would occur in winter 2016. Construction activities would take approximately two months.

It was assumed the approximate construction schedule for each construction phase would be as indicated in Table 1.5-4.

**Table 1.5-4. Estimated Construction Schedule**

| Construction Phase | Days of Construction |
|---|---|
| Plowed Conduit Installation | 7 |
| Bored Conduit Installation | 32 |
| Node Installations | 5 |
| Total | 44 |

## ***Operation and Maintenance***

Operation and maintenance (O&M) activities associated with the new telecommunications network are expected to be minimal because, once installed, fiber-optic cable is essentially maintenance-free. Occasional visits by TDS technicians to the digital loop carrier sites would be required to disconnect and connect customers, and air filters in the digital loop carrier equipment cabinets would require periodic inspections and cleaning. None of these O&M activities would involve ground disturbance.

### 1.5.2 No Project Alternative

No construction would occur under the No Project Alternative. In addition, BIA would not grant any ROW/easements and the Bureau of Reclamation would not grant any encroachment permits. The same speeds of internet service would continue to be provided to the proposed project area. The physical changes that would result from the proposed project would not occur. TDS's existing land-based telecommunications system, as described below, would continue to operate.

TDS's existing land-based telecommunications system in the project area consists of direct-buried copper lines and is able to provide basic telephone and 911 services. The copper lines in the project area are connected to one of four digital loop carriers, the first of which is located at the TDS Central Office in Winterhaven and serves the 35100 Digital Serving Area (DSA). The second digital loop carrier, located just north of the Paradise Casino on Picacho Road, serves the 35109 Digital Serving Area, and the third digital loop carrier, located in Bard, serves the 35102 Digital Serving Area. The fourth digital loop carrier is located just east of the intersection of Arnold and Flood Roads and serves the 35103 Digital Serving Area. Dial-up Internet services are available in all four DSAs, but the data transfer rate is limited to a non-broadband speed of 56 kilobits per second (Kbps) under the International Telecommunications Union V92 standard.

None of the Project Design Elements or Mitigation Measures identified in this IS/EA would apply to the No Project Alternative.

## 1.6 Location, General Plan Designation, Zoning, and Surrounding Land Uses

The proposed project would be constructed in Winterhaven, California and other areas of unincorporated Imperial County, California including the Fort Yuma Indian Reservation (see Figure 1.5-1). Winterhaven is a Census Designated Place with a population of 394 located in the southeast corner of Imperial County near the Colorado River, which is adjacent to and forms the border between California and Arizona (United States Census Bureau 2010).

The Imperial County General Plan defines Winterhaven as an urban, unincorporated area with an agriculture land use designation. Urban unincorporated areas are further characterized as providing a full level of urban services, in particular public water and sewer systems, and contain or propose a broad range of residential, commercial, and industrial uses (Imperial County 2007, 2008c)

As defined by the Imperial County General Plan, the larger, Winterhaven area is approximately 200 acres and includes both the Townsite of Winterhaven and surrounding areas. The Fort Yuma Indian Reservation forms the Winterhaven area's northern, eastern, and western boundaries (Imperial County 2008c).

Zoning designations along the alignment of the proposed project within the Townsite of Winterhaven include Low Density Residential (R-1), Medium-Density Residential (R-2), High Density Residential (R-4), and Medium Commercial (C-2). Zoning designations along the alignment outside of the Townsite of Winterhaven are primarily Agriculture –General (A-2) and Indian Reservation (Imperial County 2015b).

The project has been designed to place new fiber-optic cable underneath existing roadways, in order to reduce impacts to private property.

Refer to Section 1.10, "Land Use and Planning," for further information about general plan designations and zoning, and refer to each of the individual resource area sections in Section 2.0, Initial Study/Environmental Assessment," for further information about the setting in the proposed project area.

## 1.7 Public Involvement Process

Public disclosure and dialogue are priorities under NEPA and CEQA. Both NEPA and CEQA require a period during the EA and IS/MND preparation process when interested stakeholders, interested public agencies, or the general public can provide comments on the impacts of the proposed project. Pursuant to NEPA, the BIA circulated this IS/EA for a 30-day public review period.

Pursuant to Sections 15073.5 and 15105[b] of the CEQA Guidelines, the CPUC circulated the Draft IS/EA MND for a 30-day public and agency review on January 13, 2016. All comments received prior to 5:00 p.m. on February 15, 2016 as specified in the Notice of Intent to Adopt are considered. Input, questions, or comments on this project can be sent to the contacts identified in Section 1.2.

Please see Section 3.0, "Consultation, Coordination, Public Review, and List of Preparers," for further details regarding public review.

## 1.8 Required Permits, Approvals, and Consultations

The proposed project requires the following permits and approvals:

- CPUC: Construction authorization (CEQA lead agency)
- BIA: ROW authorization (NEPA lead agency)
- Bureau of Reclamation encroachment permit
- State Historic Preservation Officer (SHPO): Section 106 consultation pursuant to the National Historic Preservation Act
- Imperial County Air Pollution Control District (ICAPCD): Prepare Dust Control Plan and notify ICAPCD pursuant to ICAPCD Rule 801, Construction and Earthmoving Activities
- Imperial County Planning and Development Services Department: Building Permit,
- Imperial County Public Works Department: Encroachment Permit

## 1.9 Environmental Determination

An IS/EA was prepared to identify potential effects on the environment from the construction and operation of a second-generation, very-high-bit-rate digital subscriber line (VDSL2) fiber-optic network and to evaluate the significance of these effects pursuant to CEQA. The findings documented in the IS/EA are based on project information presented in the applicant's PEA filed with the CPUC on April 21, 2015 and subsequent applicant responses to data requests by the CPUC.

It is determined that the proposed project WOULD NOT HAVE a significant effect on the environment with incorporation of the mitigation measures identified in the IS/EA and listed in the Mitigation Monitoring, Reporting, and Compliance Plan (IS/EA Section 5.0). The BIA's environmental determination will be documented under separate cover.

1/12/2016

Rob Peterson, Project Manager
Energy Division, Infrastructure Permitting and CEQA
California Public Utilities Commission

Date

1/12/2016

Mary Jo Borak, Supervisor
Energy Division, Infrastructure Permitting and CEQA
California Public Utilities Commission

Date

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# 2.0 Draft Initial Study/Environmental Assessment

The environmental resources checked below would be potentially significantly affected by this project, as defined by CEQA and as indicated by the checklists presented in this IS/EA. All impacts to these environmental resources would be reduced to a less-than-significant and minor level with implementation of mitigation measures. In addition to the environmental factors identified in Appendix G of the CEQA Guidelines, Socioeconomics and Environmental Justice and Indian Trust Assets were added to the following list to satisfy NEPA requirements:

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agriculture Resources | ☒ Air Quality |
| ☒ Biological Resources | ☒ Cultural Resources | ☒ Geology and Soils |
| ☐ Greenhouse Gas Emissions | ☒ Hazards and Hazardous Materials | ☒ Hydrology and Water Quality |
| ☐ Land Use and Planning | ☐ Mineral Resources | ☒ Noise |
| ☐ Population and Housing | ☐ Public Services | ☐ Recreation |
| ☒ Transportation and Traffic | ☐ Utilities and Service Systems | ☒ Mandatory Findings of Significance |
| ☐ Socioeconomics and Environmental Justice | ☐ Indian Trust Assets | |

On the basis of this initial evaluation and pursuant to CEQA requirements:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



1/12/2016

Rob Peterson, Project Manager
Energy Division, Infrastructure Permitting and CEQA
California Public Utilities Commission

Date

### 2.0.1 CEQA/NEPA Approach, Terminology, and Impact Analysis Methodology

The approach taken in this IS/EA for complying with CEQA and NEPA is described in Appendix A. Appendix A describes the terminology used in this IS/EA and how the terminology relates to CEQA and NEPA. In addition, Appendix A describes the approaches taken for defining baseline conditions, determining significance of impacts (including socioeconomic and cumulative), developing mitigation measures, and developing alternatives. A further discussion of impact terminology is provided below.

The purpose of both an IS and an EA is to determine whether the proposed project may cause a significant impact to the environment. If a significant impact may occur that cannot be reduced to a less-than-significant level, an Environmental Impact Report or Environmental Impact Statement, respectively, must be prepared.

Pursuant to CEQA, this IS/EA evaluates potential impacts with respect to the series of checklist items for each environmental factor identified in Appendix G of the CEQA Guidelines. This IS/EA uses the following terminology to describe environmental effects of the proposed project:

A finding of *no impact* is made when the analysis concludes that the project would not affect the particular environmental resource or issue.

- An impact is considered *less than significant* if the analysis concludes that there would be no substantial adverse change in the environment and that no mitigation is needed.

- An impact is considered *significant* if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by using specific significance criteria as a basis of evaluation. Mitigation measures and/or alternatives are identified to reduce these potential effects on the environment.

- This IS/EA identifies particular mitigation measures that are intended to lessen project impacts. The state CEQA Guidelines (14 CCR 15370) define mitigation as:

    - Avoiding the impact altogether by not taking a certain action or parts of an action;

    - Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

    - Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;

    - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

Pursuant to NEPA, this IS/EA also evaluates potential impacts in terms of *context*[5] and *intensity*[6] and defines direct and indirect effects (40 Code of Federal Regulations (CFR) 1508.8, 40 CFR 1508.27). The following terms are applied as appropriate to the impact analyses presented in this IS/EA:

[5] With respect to the term *context*, 40 CFR 1508.27 states that significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

[6] CFR Title 40, Section 1508.27 states that the term *intensity* refers to the severity of impact.

- Context Terminology
  - *Short term*: Effects that occur during construction.
  - *Long term*: Effects caused during either construction and/or operations and remain after construction is completed.
  - *Localized*: Effect remains at the construction site, within the proposed project area, or in proximity to the proposed project area.
  - *Widespread*: Effect extends well beyond the proposed project area and may impact a regional area.
- Intensity Terminology
  - *Adverse*: A negative effect on a particular resource or resource use.
  - *Beneficial*: A positive effect on a particular resource or resource use.
  - *None/Negligible*: No change/no measurable change in current conditions.
  - *Minor*: Effect is slight but detectable; there would be a small change.
  - *Moderate*: Effect is readily apparent and measurable;
  - *Major*: Effect is large; there would be a highly noticeable and easily measurable change. This intensity level equates to the term "significant impact" in the Council on Environmental Quality regulations.
- Additional Terminology
  - *Direct*: Caused by the proposed project and occurs at the same time and place.
  - *Indirect*: Caused by the proposed project but later in time or farther removed in distance although still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.
  - *Cumulative*: Impact on the environment that results from the incremental impact of the proposed project when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts are discussed in Section 2.18, "Mandatory Findings of Significance of this IS/EA."

All determinations regarding the adequacy of this IS/EA with respect to NEPA will be made by the BIA under separate cover.

# 2.1 Aesthetics

| Would the project | Potentially Significant Impact | Less than Significant with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☒ | ☐ |
| b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☐ | ☐ | ☐ | ☒ |
| c. Substantially degrade the existing visual character or quality of the site and its surroundings? | ☐ | ☐ | ☒ | ☐ |
| d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☐ | ☐ | ☒ | ☐ |

## 2.1.1 Setting

### *Environmental Setting*

#### *Visual Character and Quality*

The proposed project alignment is located along existing roads in an area used primarily for agriculture. The dominant visual features are agricultural fields, scattered rural residences with associated landscaping, and irrigation canals. Within the community of Winterhaven, buildings are generally located close to the roadways and are small in scale, ranging from one to two stories. Landscaping within Winterhaven and in the vicinity of rural homes includes some planted trees, although generally with the exception of some planted orchards, vegetation is low in profile, with substantial amounts of exposed earth, consistent with the surrounding desert environment. Along some irrigation canals there are areas of dense vegetation. The roadways and the project area consist primarily of paved two-lane roads, although some roads along agricultural land are unpaved. Along the roadways, there are some existing utility cabinets. In addition to roads, other linear features in the project area include aerial electrical distribution lines that parallel most of the roads in the project area. Overall, the various visual features described above contribute to a cohesive rural and agricultural character. The Paradise Casino, which includes larger-scale modern buildings and surface parking, and Interstate 8 are land uses that do not contribute to the overall rural character. Both of these land uses are located at outer edges of the project area.

#### *Scenic Highways and Visual Resources*

The Imperial County General Plan identifies important visual resources within the county, including desert areas, sand hills, and mountains (Imperial County 2008b). The topography of the project area is relatively flat, allowing for mostly unobstructed views of distant mountains on the horizon, located primarily to the north and northwest. Where there are large trees, views of the distant mountains are partially obstructed. Within the community of Winterhaven, views of the mountains are partially obstructed by buildings. A reconnaissance-level survey of the project area confirmed that desert areas within the project area are limited to small areas of desert scrub vegetation surrounding residences or between agricultural fields.

Four highways within the county have been identified as eligible for state-designated scenic highway status, but they are not located within or near the project area. There are no officially designated scenic highways in Imperial County. The nearest eligible scenic highway to the project area is a segment of Interstate 8,

between the San Diego County line and its junction with State Route 98, which is approximately 80 miles west of the project area.

### *Viewer Groups*

The primary viewers of the proposed telecommunications facilities that would be aboveground include local residents, agricultural workers, and employees of existing businesses. In general, residents would have a heightened sensitivity to the surrounding viewshed because they have high frequency and duration of views, as well as an expectation of a consistent setting. Workers and motorists would have reduced sensitivity to the surrounding viewshed because their views would be more temporary and their expectations of the setting would generally be more limited.

## ***Regulatory Setting***

### *Federal*

No federal regulations are applicable to aesthetics in relation to the proposed project.

### *State*

#### California Scenic Highway Program

In 1963, the California Legislature created the Scenic Highway Program to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. The state regulations and guidelines governing the Scenic Highway Program are found in Section 260 through 263 of the Streets and Highways Code. A highway may be designated as scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view (Caltrans 2015a).

### *Local*

#### Imperial County General Plan

The Imperial County General Plan has goals and objectives related to visual resources. These goals and objectives are listed below.

> **Conservation and Open Space Element Goal 7:** The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.
>
> > **Objective 7.1**—Encourage the preservation and enhancement of the natural beauty of the desert and mountain landscape (Imperial County 2008b).
>
> **GP Circulation and Scenic Highways Goal 4:** The County shall make every effort to develop a circulation system that highlights and preserves the environmental and scenic amenities of the area (Imperial County 2008a).

## 2.1.2 Environmental Impacts

### *Proposed Project*

***a. Would the project have a substantial adverse effect on a scenic vista? (Less than Significant; Short term/Localized and Minor)***

The lack of topographic relief in the project area and presence of large areas dominated by agriculture allows mostly unobstructed views of distant mountains, which are considered a scenic visual resource in Imperial County. Construction of the proposed project would result in temporary visual changes to the project area, including the presence of equipment and work crews during the installations. The equipment used would be similar in character to the agricultural equipment that is currently used in the fields adjacent to the project corridors and could result in incidental obstruction of views of the distant mountains temporarily in some locations. Following construction, aboveground facilities, including 10 new equipment cabinets and several splice pedestals painted in neutral colors, would be visible along the roads in the project area. These new facilities would be in character with the existing utility cabinets found along the roads and would be sufficiently small in scale to avoid blocking views of the mountains. Impacts to scenic vistas would be less than significant, short term and/or localized, and minor.

***b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact; None)***

There are no state-designated scenic highways nor highways eligible for scenic highway listing in the project area (Caltrans 2015b and 2015c), and the project would not require removal of trees, rock outcroppings, historic buildings or other scenic resources. Therefore, there would be no impact to scenic resources.

***c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings (Less than Significant)? (Less than Significant; Short term/Localized and Minor)***

The nature of the project site's visual character is rural, represented primarily by agricultural activities, with residences scattered along the project alignment, and small-scale urbanization in the community of Winterhaven.

Construction activities associated with the proposed project could result in temporary changes to the visual character of the area due to the presence of construction crews and equipment during the installations. However, the duration of construction would be temporary, the scale of changes in views would be limited to the surrounding land uses and passerby motorists on local roads, and the equipment used would be similar in character to the agricultural equipment that is currently used in the fields adjacent to the project alignment.

Limited aboveground facilities, including 10 new equipment cabinets and several splice pedestals painted in neutral colors, would be visible during project operations along the roads in the project area. These new facilities would be in character with the existing utility cabinets found along the roads. These impacts to the visual character of the area would be less than significant, short term and/or localized, and minor.

***d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (Less than Significant; Short term and Localized)***

Construction and installation activities for the proposed project would occur during daylight hours and would not require lighting for the work area. In addition, construction equipment would not be a substantial source of light and glare.

Following construction, the majority of the proposed project's components would be located underground and would not be new sources of light or glare. The limited aboveground project facilities (i.e., line markers, utility cabinets, and splice pedestals) would be up to 4 feet high and would not be made of materials that would cause glare. Therefore, impacts related to light or glare would be less than significant, short term and/or localized.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no effect on visual resources.

# 2.2 Agriculture and Forestry Resources

| In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☒ | ☐ |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☒ | ☐ |
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? | ☐ | ☐ | ☐ | ☒ |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ☒ | ☐ |

## 2.2.1 Setting

### *Environmental Setting*

The agricultural areas within Imperial County are recognized as among the finest agricultural areas in the world due to several environmental and cultural factors, including good soils, a year-round growing season, the availability of adequate water transported from the Colorado River, extensive areas committed to agricultural production, a gently sloping topography, and a climate that is well-suited for growing crops and raising livestock (Imperial County 1996a). The proposed project is located in an agricultural area that, with the exception of the Winterhaven community, is classified as Prime Farmland (CDOC 2015b).

The proposed project would be located within and adjacent to existing roadways. Outside of the Fort Yuma Indian Reservation, the proposed project would be located within the public right of way (ROW). Land

owners on the reservation may cultivate the land immediately adjacent to roadways. Outside of the reservation, the public right-of-way typically extends beyond the roadway, and landowners typically do not cultivate land immediately adjacent to the roadway.

## *Regulatory Setting*

### *Federal*

The Farmland Protection Policy Act (FPPA) of 1981 (Public Law 97-98, Subtitle I of Title XV, Section 1539-1549) was approved by Congress with the intent of minimizing the impact that federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. This law assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. For the purpose of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to these requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. Projects are subject to these requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency.

Assistance from a federal agency includes:

- Acquiring or disposing of land.
- Providing financing or loans.
- Managing property.
- Providing technical assistance

Activities not subject to FPPA include:

- Federal permitting and licensing
- Projects planned and completed without the assistance of a federal agency
- Projects on land already in urban development or used for water storage
- Construction within an existing right-of-way purchased on or before August 4, 1984
- Construction for national defense purposes
- Construction of on-farm structures needed for farm operations
- Surface mining, where restoration to agricultural use is planned
- Construction of new minor secondary structures such as a garage or storage shed.

To meet the requirements of the FPPA, a representative of the federal agency must complete the Natural Resources Conservation Service's Farmland Conversion Impact Rating form (form AD 1006) and submit the completed form to the Natural Resources Conservation Service, which uses a land evaluation and site assessment system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level.

### *State*

#### Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP), administered by the California Department of Conservation, produces maps and statistical data for use in analyzing impacts on California's agricultural resources. The FMMP is a non-regulatory program intended to aid in assessing the location, quality, and quantity of agricultural lands and the conversion of such lands over time (CDOC 2015c). FMMP rates and

classifies agricultural land according to soil quality, irrigation status, and other criteria. Important Farmland categories are as follows (CDOC 2015a):

- **Prime Farmland:** Prime farmland is land that has the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Farmland of Statewide Importance:** Farmland of Statewide Importance is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Unique Farmland:** Unique farmland is farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

- **Farmland of Local Importance:** Farmland of local importance is land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

### Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is a state policy administered at the local government level. The Williamson Act is intended to preserve agricultural and open-space lands through contracts with private landowners. By entering into a Williamson Act contract, the landowner foregoes the possibility of converting agricultural land to nonagricultural use for a rolling period of 10 years in return for lower property taxes. The Open Space Subvention Act of 1971 provided for local governments to receive an annual subvention of foregone property tax revenues from the state's General Fund (CDOC 2015d, 2015e).

Of California's 58 Counties, 53 have adopted the Williamson Act program, including Imperial County. However, in Fiscal Year 2009, California drastically reduced subvention reimbursements to Counties, and paid only a total of $1,000 in subvention payment statewide. There have been no subvention payments in Fiscal Years 2010 through 2013 (CDOC 2015e).

In response to these funding cuts, in 2010 Imperial County filed non-renewal on all Williamson Act contracts, effective January 2011 and covering approximately 1,200 contracts. State law calls for the assessments—and taxes—for the non-renewed Williamson Act parcels to ramp back up to their Proposition 13-factored base level during the 9-year contract run out period. Landowners of about half of the Williamson Act parcels in Imperial County protested the non-renewal, which had the effect of continuing the calculation of the contracts as if they had not been non-renewed for the first four years of the 9-year run-out period. The protest period ended in 2015, and the protesters' assessments and taxes have increased to the level where they would have been if no protest had been filed (Imperial County Assessor's Office 2015).

*Local*

### Imperial County General Plan

The Agricultural Element of the General Plan serves as the primary policy statement by the Board of Supervisors for implementing development policies for agricultural land use in Imperial County, excluding areas within the Fort Yuma Indian Reservation. The Goals, Objectives, Implementation Programs, and Policies found in the Agricultural Element provide direction for private development as well as government actions and programs. The Agricultural Element's Goals and Objectives are intended to serve as long-term principles and policy statements representing the community's ideals and guiding agricultural land use decision making. In order to implement the Goals and Objectives, the Agricultural Element includes a number of Policies, identifying Implementation Programs for various Policies, including the Policies and Programs that relate to the use of agricultural land for nonagricultural purposes, as listed below (Imperial County 1996a):

- **Policy 1: Preservation of Important Farmland.** The overall economy of the County is expected to be dependent upon the agricultural industry for the foreseeable future. As such, all agricultural land in the County is considered Important Farmland, as defined by federal and state agencies, and should be reserved for agricultural uses. Agricultural land may be converted to nonagricultural uses only where a clear and immediate need can be demonstrated, such as requirements for urban housing, commercial facilities, or employment opportunities. All existing agricultural land will be preserved for irrigation agriculture, livestock production, aquaculture, and other agriculture-related uses except for nonagricultural uses identified in this General Plan or in previously adopted City General Plans.

- **Implementation Program for Policy 1:** No agricultural land designated except as provided in Exhibit C shall be removed from the Agriculture category except where needed for use by a public agency, for geothermal purposes, where a mapping error may have occurred, or where a clear long term economic benefit to the County can be demonstrated through the planning and environmental review process. The Board (or Planning Commission) shall be required to prepare and make specific findings and circulate same for 60 days (30 days for parcels considered under Exhibit C of this element) before granting final approval of any proposal which removes land from the Agriculture category.

- **Policy 2: Development Patterns and Locations on Agricultural Land.** "Leapfrogging" or "checkerboard" patterns of development have intensified recently and result in significant impacts to the efficient and economic production of adjacent agricultural land. It is a policy of the County that leapfrogging will not be allowed in the future. All new nonagricultural development will be confined to areas identified in this plan for such purposes or in Cities' adopted Spheres of Influence, where new development must adjoin existing urban uses. Nonagricultural residential, commercial, or industrial uses will only be permitted if they adjoin at least one side of an existing urban use, and only if they do not significantly impact the ability to economically and conveniently farm adjacent agricultural land.

- **Implementation Program for Policy 2:** All nonagricultural uses in any land use category shall be analyzed during the subdivision, zoning, and environmental impact review process for their potential impact on the movement of agricultural equipment and products on roads located in the Agriculture category, and for other existing agricultural conditions which might impact the projects, such as noise, dust, or odors. Implementation Program for Policy 2: The Planning and Development Services Department shall review all proposed development projects to assure that any new residential or nonagricultural commercial uses located on agriculturally zoned land, except

land designated as a Specific Plan Area, be adjoined on at least one entire property line to an area of existing urban uses. Developments that do not meet these criteria should not be approved.

## 2.2.2 Environmental Impacts

### *Proposed Project*

***a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (Less than Significant; Minor)***

Outside of the Fort Yuma Indian Reservation, the proposed project would not result in the conversion of farmland to a nonagricultural use because all of the proposed installations would occur within existing public right-of-way, and the agricultural land on parcels adjacent to the public right-of-way would be avoided. Within the Fort Yuma Indian Reservation, the installation of fiber-optic cable under existing roads would not be subject to protection under the Federal Farmland Protection Policy Act, because the requirements do not apply to land in urban use (NRCS 2015). The installation of five utility cabinets within the reservation, adjacent to existing roadways, would each only affect an approximate 20-square-foot area. Due to the small disturbance area associated with each utility cabinet and their locations adjacent to roads, these installations would negligibly affect or convert Prime Farmland (agricultural fields) to a non-agricultural use. Therefore, this impact would be less than significant and minor.

***b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? (Less than Significant; Minor)***

There would be no conflicts with existing zoning regulations for agricultural areas or Williamson Act contracts, because outside of the Fort Yuma Indian Reservation, the installations and construction activity would be within existing public right-of-way. Imperial County's Zoning Ordinance is not applicable within the reservation, and reservation land is not subject to any other zoning requirements. Within the Fort Yuma Indian Reservation, installation of the five utility cabinets would affect a small disturbance area in locations immediately adjacent to roads; therefore, these installations would not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, this impact would be less than significant and minor.

***c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220 (g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined in Government Code Section 51104(g))? (No Impact; None)***

There is no forested land or timberland in the project area; therefore, the proposed project would have no effect on forested land nor any zoning regulations designating forested land, timberland, or timberland zoned for Timberland Production. There would be no impact.

***d. Would the project result in the loss of forest land or conversion of forest land to non-forest use? (No Impact; None)***

There is no forested land or timberland in the project area; therefore, the proposed project would have no impact.

***e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? (Less than Significant; Minor)***

The potential for the project to result in the conversion of farmland to nonagricultural use is fully addressed in section "a" above. There is no forested land in the project area. Other than the impact described above in section "a," there would be no impact to farmland or forest land. Therefore, this impact would be less than significant and minor.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no effect on agriculture and forestry resources.

# 2.3 Air Quality

| Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project: | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ |
| b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☒ | ☐ | ☐ |
| c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | ☐ | ☐ | ☒ | ☐ |
| d. Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| e. Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |
| | ☐ | ☐ | ☒ | ☐ |

## 2.3.1 Setting

### *Environmental Setting*

The Western Regional Climate Center (WRCC) recorded seasonal climatic data from 1993–2013 at the Yuma Quartermaster Depot, located just south of the project area (WRCC 2014). These data include average maximum temperature, average minimum temperature, average total precipitation, and average snowfall. The average annual maximum temperature within the project area is 90.1° F (32.2° C), with the hottest month of the year being July with an average maximum temperature of 109.4° F (43.0° C). The average annual minimum temperature within the project area is 59.0° F (15.0° C), with December having the coldest average temperature of 43.4° F (6.3° C). The project area receives an average of 2.67 inches of precipitation annually, with February having the highest average precipitation at 0.48 inches. The project area receives no snowfall in the average year.

The proposed project area is located within the Salton Sea air basin. The Salton Sea air basin is comprised of the central portion of Riverside County (the Coachella Valley), within the jurisdiction of the South Coast Air Quality Management District, and Imperial County, which is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). The air basin primarily includes valleys with elevations relatively near sea level but is bordered on the east by mountains with higher elevations (approximately 1,400-2,500 feet). Attainment status designations for the basin related to state and federal air quality standards are provided in Table 2.3-1 below.

### *Regulatory Setting*

#### *Federal Laws, Regulations, and Policies*

The Clean Air Act (CAA) is implemented by the U.S. Environmental Protection Agency (USEPA) and sets ambient air limits, the National Ambient Air Quality Standards (NAAQS), for six criteria pollutants:

particulate matter of aerodynamic radius of 10 micrometers or less ($PM_{10}$), particulate matter of aerodynamic radius of 2.5 micrometers or less ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide ($NO_2$), ground-level ozone, and lead. Of these criteria pollutants, particulate matter and ground-level ozone pose the greatest threats to human health. Table 2.3-1 shows the current attainment status for the federal and state ambient air quality standards.

#### General Conformity Rule

Section 176I of the CAA provides that federal agencies cannot engage, support, or provide financial assistance for licensing, permitting, or approving any project unless the project conforms to the applicable State Implementation Plan (SIP). Under CAA Section 176(c) requirements, USEPA promulgated 40 CFR Part 51, Subpart W, and 40 CFR Part 93, Subpart B, "Determining Conformity of General Federal Actions to State or Federal Implementation Plans" (see 58 FR 63214 [November 30, 1993], as amended; 75 FR 17253 [April 5, 2010]). These regulations, commonly referred to as the General Conformity Rule, apply to all federal actions, including those by the BIA, except for those federal actions that are specifically excluded from review (e.g., stationary-source emissions) or are related to transportation plans, programs, and projects under Title 23 of the United States Code (USC) or the Federal Transit Act, which are subject to Transportation Conformity.

The General Conformity Rule is used to determine if federal actions meet the requirements of the CAA and the applicable SIP by ensuring that air emissions related to the action do not:

- Cause or contribute to new violations of a NAAQS;
- Increase the frequency or severity of any existing violation of a NAAQS; or
- Delay timely attainment of a NAAQS or interim emission reduction.

A conformity determination under the General Conformity Rule is required if the federal agency determines that the action would occur in a nonattainment or maintenance area; no specific exemptions apply to the action; the action is not included in the federal agency's "presumed to conform" list; emissions from the proposed action are not within the approved emissions budget for an applicable facility; and the total direct and indirect emissions of a pollutant (or its precursors) are at or above the *de minimis* levels established in the General Conformity Rule (75 FR 17255). Applicable *de minimis* levels are provided in Table 2.3-2 below.

### *State Laws, Regulations, and Policies*

The California Air Resources Board (CARB) sets standards for criteria pollutants in California that are more stringent than the NAAQS and include the following additional contaminants: visibility-reducing particles, hydrogen sulfide, sulfates, and vinyl chloride.

**Table 2.3-1. Attainment Status of the State and Federal Ambient Air Quality Standards for Project Area within the Salton Sea Air Basin**

| Contaminant | Averaging Time | Concentration | State Standards Attainment Status[1] | Federal Standards Attainment Status[2] |
|---|---|---|---|---|
| Ozone | 1-hour | 0.09 ppm | Nonattainment | See footnote 3 |
| | 8-hour | 0.070 ppm | Nonattainment | |
| | | 0.075 ppm | | Nonattainment (marginal) |
| Carbon Monoxide | 1-hour | 20 ppm | Attainment | |
| | | 35 ppm | | Unclassified/ Attainment |
| | 8-hour | 9.0 ppm | Attainment | Unclassified/ Attainment |
| Nitrogen Dioxide | 1-hour | 0.18 ppm | Attainment | |
| | | 0.100 ppm[5] | | Unclassified/ Attainment |
| | Annual arithmetic mean | 0.030 ppm | Attainment | |
| | | 0.053 ppm | | Unclassified/ Attainment |
| Sulfur Dioxide ($SO_2$) | 1-hour | 0.25 ppm | Attainment | |
| | | 0.075 ppm | | Attainment |
| | 24-hour | 0.04 ppm | Attainment | |
| | | 0.14 ppm | | Attainment |
| | Annual arithmetic mean | 0.030 ppm | | Attainment |
| Particulate Matter ($PM_{10}$) | 24-hour | 50 µg/m$^3$ | Nonattainment | |
| | | 150 µg/m$^3$ | | Unclassified |
| | Annual arithmetic mean | 20 µg/m$^3$ | Nonattainment | |
| Fine Particulate Matter ($PM_{2.5}$) | 24-hour | 35 µg/m$^3$ | | Unclassified/ Attainment |
| | Annual arithmetic mean | 12 µg/m$^3$ | Attainment | Unclassified/ Attainment |
| Sulfates | 24-hour | 25 µg/m$^3$ | Attainment | |
| Lead[6] | 30-day average | 1.5 µg/m$^3$ | Attainment | -- |
| | Calendar quarter | 1.5 µg/m$^3$ | | Unclassified |
| | Rolling 3-month average | 0.15 µg/m$^3$ | | Unclassified |
| Hydrogen Sulfide | 1-hour | 0.03 ppm | Unclassified | |
| Visibility Reducing Particles | 8 hour (10:00 to 18:00 PST) | See footnote 4 | Unclassified | |

*Abbreviations:* ppm – parts per million; µg/m3 – micrograms per cubic meter; marginal – the lowest of 5 nonattainment classifications for federal air quality standards.

**Notes:**

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - $PM_{10}$, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the $PM_{10}$ annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe carbon monoxide standard is 6.0 ppm, one-half the national standard and two-thirds the state standard.
2. National standards shown are the "primary standards" designed to protect public health. National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once per year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 parts per billion) or less. The 24-hour $PM_{10}$ standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 $\mu g/m^3$. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for $PM_{10}$ is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially averaged across officially designed clusters of sites falls below the standard.
3. The national 1-hour ozone standard was revoked by USEPA on June 15, 2005. On October 1, 2015, the EPA issued a final ruling to change the federal ozone (8-hour) standard from 0.075 ppm to 0.070 ppm. The attainment status provided in this table for the NAAQS ozone standard is based on the 2008 8-hour NAAQS standard of 0.075 ppm since there are not yet available attainment status determinations for the 2015 standard.
4. Statewide Visibility-Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
5. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitoring station within an area must not exceed 0.100 ppm (effective January 22, 2010).
6. CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure below which there are no adverse health effects determined.

*Source: CARB 2015a, USEPA 2015a*

The USEPA and CARB regulate various stationary sources, area sources, and mobile sources. USEPA has regulations involving performance standards for specific sources that may release toxic air contaminants (TACs), known as hazardous air pollutants (HAPs) at the federal level. In addition, USEPA has regulations involving emission criteria for off-road sources such as construction equipment and vehicles. The CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications. Airborne Toxic Control Measures (ATCMs), including the following relevant measures, are implemented to address sources of TACs:

- ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- ATCM to Reduce Particulate Emissions from Diesel-Fueled Engines Standards for Non-vehicular Diesel Fuel
- ATCM for Stationary Compression Ignition Engines

### *Local Regulations and Policies*

The local air districts develop air quality and air pollutant regulations and prepare air quality plans that set goals and measures for achieving attainment with NAAQS and CAAQS. The districts also develop emissions inventories, collect air-monitoring data, and perform dispersion modeling simulations to

establish strategies that will reduce emissions and improve air quality. The ICAPCD has local jurisdiction over the proposed project area.

### Significance Thresholds

As part of an effort to attain and maintain NAAQS and CAAQS, the ICAPCD has established and adopted thresholds of significance for criteria pollutants of greatest concern within the district (ICAPCD 2007). The thresholds for ozone precursors (reactive organic gas [ROG] and nitrogen oxides [$NO_x$]), $PM_{10}$, and CO emissions from construction and operational activities are shown in Table 2.3-2. Other applicable significance thresholds (i.e., the general conformity *de minimis* thresholds) are also provided.

**Table 2.3-2. ICAPCD and General Conformity De Minimis Significance Thresholds for Construction- and Operation-Related Emissions of Criteria Pollutants**

| Pollutant | ICAPCD Construction Threshold | ICAPCD Operational Threshold | General Conformity de minimis Thresholds |
|---|---|---|---|
| $PM_{10}$ | 150 pounds (lbs)/day | < 150 lbs/day | N/A |
| $PM_{2.5}$ | | | N/A |
| ROG | 75 lbs/day | < 55 lbs/day | 100 tons/year |
| $NO_x$ | 100 lbs/day | < 55 lbs/day | 100 tons/year |
| CO | 550 lbs/day | < 550 lbs/day | N/A |

N/A = not applicable since air basin at project area is in attainment or unclassified. Although portions of Imperial County (and the Salton Sea air basin) are designated as federal nonattainment for particulate matter (PM) pollutants, the Winterhaven area is outside of these designated areas for $PM_{2.5}$ and $PM_{10}$.

*Source: USEPA 2015a, CARB 2015a, ICAPCD 2007*

### Fugitive Dust

In Imperial County, all construction activities must be in compliance with Regulation VIII (ICAPCD 2007). The main purpose of this regulation is to reduce the amount of $PM_{10}$ released into the atmosphere as a result of manmade fugitive dust sources. Compliance with the regulation does not constitute mitigation and it is presumed that all projects occurring in Imperial County will be implemented in compliance with Regulation VIII. Standard measures for fugitive $PM_{10}$ control outlined in Regulation VIII include:

- All disturbed areas, including bulk material storage that is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material such as vegetative ground cover.

- All on- and off-site unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- All unpaved traffic areas 1 acre or more in size with 75 or more average vehicle trips per day will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- The transport of bulk materials shall be completely covered, unless 15 cm (6 inches) of freeboard space from the top of the container is maintained with no spillage or loss of bulk material. In

addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material.

- All track-out and carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 15 linear m (50 linear feet) or more onto a paved road within an urban area.

- Bulk material shall be stabilized prior to movement or at points of transfer with the application of sufficient water, the application of chemical stabilizers, or by sheltering or enclosing the operation and transfer line.

- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

In order to provide a greater degree of $PM_{10}$ reductions, above that required by Regulation VIII, the ICAPCD recommends the following discretionary mitigation measures for fugitive $PM_{10}$ control:

- Watering of exposed soil with adequate frequency for continued moist soil.

- Replacing ground cover in disturbed areas as quickly as possible.

- Installing an automatic sprinkler system on all soil piles.

- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

- Develop a trip reduction plan to achieve a 1.5 average vehicle ridership (AVR) for construction employees.

- Implement a shuttle service to and from retail services and food establishments during lunch hours.

## 2.3.2 Environmental Impacts

### *Proposed Project*

***a. Would the project conflict with or obstruct implementation of the applicable air quality plan? (Less than Significant; Minor)***

The project area is located in the Salton Sea air basin, which is currently in non-attainment for the CAAQS for $PM_{10}$ and ozone, and for the NAAQS 8-hour ozone. The ICAPCD adopted an Air Quality Management Plan for ozone on July 13, 2010, and a SIP for $PM_{10}$ on August 11, 2009. The ICAPCD plans estimate future emissions and describe strategies necessary for emissions reductions through regulatory controls. Emissions projections in the plans are based on population, vehicle, and land-use trends developed by the ICAPCD and CARB.

A proposed project would be considered inconsistent with air quality plans if it would result in population and/or employment growth that exceeds estimates used to develop applicable air quality plans. Projects that propose development that is consistent with the growth anticipated by the relevant land use plans would be consistent with the current ICAPCD air quality plans. Similarly, projects that propose development that is

less dense than anticipated within a General Plan or other applicable land use plan would be consistent with the air quality plans because emissions would be less than estimated for the region.

The purpose of the proposed project is to make affordable broadband Internet services available to currently underserved areas in Imperial County, including a portion of the Fort Yuma Indian Reservation. It would not induce population or employment growth and would not conflict or obstruct the implementation of the applicable air quality plans. The proposed project would generate minor amounts of emissions during construction; however, negligible emissions would be generated during operation from periodic worker trips, and the emissions generated are not anticipated to impede attainment or maintenance of the NAAQS or CAAQS by the ICAPCD. Therefore, this impact would be considered less than significant and minor.

***b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Less than Significant with Mitigation; Short term and/or Minor with Implementation of Mitigation Measures)***

Potential impacts from the proposed project on the air quality of the project area were modeled using the California Emissions Estimator Model (CalEEMod) version 2013.2.2 (Appendix C). Construction equipment indicated in the Construction Workforce and Equipment section of the above project description operating during three assumed construction phases (shown in Table 1.5-3) were used as inputs for the model, which provided estimates for the ICAPCD criteria pollutants that would be released during construction of the proposed project. Additional modeling input details can be found in Appendix C.

Reactive Organic Gas (ROG), $NO_x$, CO, and $PM_{10}$ and $PM_{2.5}$ (exhaust) estimates for all construction phases include unmitigated on- and off-site emissions (Table 2.3-3). $PM_{10}$ and $PM_{2.5}$ estimates show unmitigated emission estimates from both fugitive dust and equipment exhaust. These estimates are conservative because the proposed project would be required to implement the standard fugitive dust control measures of Imperial County Regulation VIII. Table 2.3-4 provides annual estimated emissions and compares these values to the General Conformity *de minimis* thresholds.

**Table 2.3-3. Estimated Daily Construction Emissions – Criteria Pollutants**

| Construction Phase | Criteria Pollutant Emissions (lbs/day) | | | | | | |
|---|---|---|---|---|---|---|---|
| | ROG On+Off-Site | NOx | CO | $PM_{10}$ | | $PM_{2.5}$ | |
| | | | | Dust[a] | Exhaust | Dust | Exhaust |
| Plowed Conduit Installation | 1.76+0.16<br>**1.92** | 14.40+0.89<br>**15.29** | 9.34+1.90<br>**11.24** | 21.33 | 1.06+0.02<br>**22.41** | 2.15 | 1.00+0.02<br>**3.17** |
| Bored Conduit Installation | 2.75+0.18<br>**2.93** | 30.62+0.75<br>**31.37** | 14.90+2.12<br>**17.02** | 29.49 | 1.37+0.01<br>**30.87** | 2.97 | 1.30+0.01<br>**4.28** |
| Node Installation | 0.34+0.11<br>**0.45** | 3.26+0.66<br>**3.92** | 2.41+1.34<br>**3.75** | 14.38 | 0.25+0.01<br>**14.64** | 1.45 | 0.23+0.01<br>**1.69** |
| Maximum Daily Emission | 2.93 | 31.37 | 17.02 | 30.87 | | 4.28 | |
| ICAPCD Thresholds | 75 | 100 | 500 | 150 | | None | |

| Construction Phase | Criteria Pollutant Emissions (lbs/day) | | | | | | |
|---|---|---|---|---|---|---|---|
| | ROG On+Off-Site | NOx | CO | $PM_{10}$ | | $PM_{2.5}$ | |
| | | | | Dust[a] | Exhaust | Dust | Exhaust |
| Exceeds ICAPCD Threshold? | No | No | No | No | | N/A | |

[a] Off-site fugitive dust only, all on-site fugitive dust will be controlled per Regulation VIII.

**Table 2.3-4. Estimated Annual Emissions for all Construction Phases Combined – Criteria Pollutants**

| Construction Year and Threshold Type | Criteria Pollutant Emissions (tons/year) | | | | | | |
|---|---|---|---|---|---|---|---|
| | ROG | $NO_x$ | CO | $PM_{10}$ | | $PM_{2.5}$ | |
| | | | | Dust[a] | Exhaust | Dust | Exhaust |
| 2016 | 0.055 | 0.57 | 0.32 | 0.56 | 0.027<br>0.59 | 0.057 | 0.025<br>0.082 |
| General Conformity *de minimis* Thresholds | 100 | 100 | N/A | N/A | | | |
| Exceeds Conformity Threshold? | No | No | N/A | N/A | | | |

As shown in Tables 2.3-3 and 2.3-4, the proposed project's estimated construction-related emissions would be below the ICAPCD maximum daily emission thresholds and the General Conformity *de minimis* thresholds for all criteria pollutants. To ensure compliance with Imperial County Regulation VIII, **Mitigation Measure AQ-1** would be implemented to control on-site fugitive dust. Therefore, with implementation of mitigation, the criteria pollutant emissions impacts associated with the proposed project's construction would be less than significant, short term, and minor.

Operational-related emissions would only be generated by occasional TDS technician visits and maintenance repairs, and therefore would be anticipated to be negligible. Thus, operation-related impacts would be less than significant.

**Mitigation Measure AQ-1: Implement Fugitive Dust Control Measures**

TDS will require all construction contractors to implement the following ICAPCD standard measures for fugitive $PM_{10}$ control:

- All disturbed areas, including bulk material storage that is not being actively utilized, shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative ground cover.

- All on- and off-site unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- All unpaved traffic areas 1 acre or more in size with 75 or more average vehicle trips per day will be effectively stabilized, and visible emissions shall be limited to no

greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- The transport of bulk materials shall be completely covered unless 15 cm (6 inches) of freeboard space from the top of the container is maintained with no spillage or loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material.

- All track-out and carry-out shall be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 15 linear m (50 linear feet) or more onto a paved road within an urban area.

- Bulk material shall be stabilized prior to movement or at points of transfer with the application of sufficient water, the application of chemical stabilizers, or by sheltering or enclosing the operation and transfer line.

- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

In addition, the following ICAPCD-recommended discretionary measures will be implemented:

- Watering of exposed soil with adequate frequency for continued moist soil.

- Replacing ground cover in disturbed areas as quickly as possible.

- Installing an automatic sprinkler system on all soil piles.

- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

***c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (Less than Significant; Minor)***

The project area is currently in state and/or federal non-attainment for the criteria pollutants $PM_{10}$ and ozone; however, the proposed project's construction-related estimated emissions levels for both $PM_{10}$ and ozone precursors (ROG and $NO_x$) would both be well below the ICAPCD thresholds. In addition, estimated ozone emissions from the proposed project would be substantially below the General Conformity thresholds. Consequently, because the proposed project's anticipated emissions of these two criteria pollutants that are in non-attainment are below what ICAPCD would consider significant, any cumulative impacts would be considered less than significant and minor.

***d. Would the project expose sensitive receptors to substantial pollutant concentrations? (Less than Significant; Minor)***

Sensitive receptors located along the project corridors include residences and schoolchildren. Equipment used for the proposed installations would release diesel exhaust as the installations proceed; however, this equipment would not remain in any one location for a prolonged period of time. Therefore, substantial pollutant concentrations would not occur in the vicinity of the sensitive receptors along the project corridors, and construction-related impacts would be less than significant and minor.

Operation-related emissions from occasional TDS technician vehicle trips and maintenance repairs in the project area would be negligible and would not expose sensitive receptors to substantial pollutant concentrations. Therefore, impacts during project operation would be less than significant and minor.

***e. Would the project create objectionable odors affecting a substantial number of people? (Less than Significant; Minor)***

None of the facilities to be installed during construction of the proposed project are known to have odor impacts; however, equipment used for the proposed installations would release diesel exhaust, which some people may consider to have an objectionable odor, as the installations proceed. Because the proposed project area is primarily located in an open, rural area with relatively few people, and the construction equipment would not remain in any one location for a long period of time, odor impacts would be less than significant and minor.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no effect on air quality.

# 2.4 Biological Resources

| Would the project | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☒ | ☐ | ☐ |
| d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☒ | ☐ | ☐ |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☐ | ☒ |
| f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☒ | ☐ | ☐ |

## 2.4.1 Setting

### *Environmental Setting*

The following description of the environmental setting is based on information presented in the Biological Resources Evaluation, prepared for the project (Tierra Right of Way Services 2015a), unless otherwise indicated. The project area is located in southeastern California on the lower Colorado River in an area primarily used for agricultural cultivation. A number of irrigation canals operated by either the Bureau of Reclamation's Imperial Irrigation District or the Bard Water District either cross or run parallel to the project corridors. Elevations in the project area range from approximately 126–140 feet above mean sea level.

#### *Terrestrial Habitat*

While the study area is located within the Colorado Desert, the dominant type of terrestrial habitat present in the project area consists of agricultural land that is being actively cultivated to produce Sudangrass, wheat, cotton, alfalfa, dates, citrus, and other crops. The areas immediately adjacent to the roadways within

the project alignment are mostly devoid of vegetation due to blading activities associated with road maintenance and agricultural activities. Due to this previous disturbance, little to no native vegetation remains in the project area. Complete lists of plants and wildlife species identified in the study area at the time of the surveys can be found in Appendix D, "Biological Resources Evaluation."

### *Aquatic Habitat*

Aquatic habitat in the study area is limited to that associated with agricultural canals. There are 11 canals in the project area, and 17 crossings of canals, as shown in Table 1.5-3 in Section 1.5.1, "Proposed Project." There are no ponds or ephemeral or perennial waterways within the study area. Grass carp *(Ctenopharyngodon idella)*, a fish species native to southeastern Russia and northwestern China, has been stocked in the Yuma Main Canal by the Yuma County Water User's Association (YCWUA) since October 2013 for vegetation control purposes.

### *Sensitive Natural Communities*

#### Riparian Areas

No sensitive natural communities, as defined by the California Department of Fish and Wildlife (CDFW), are present in the study area. However, the margins of unlined canals in the study area, especially the Reservation Main Drain, contain limited riparian vegetation consisting mostly of dense common reed *(Phragmites australis)* and invasive species such as salt cedar *(Tamarix ramosissima)*. This vegetation is mostly low-growing, not structurally complex, and does not have a tree overstory.

#### Wetlands and Other Waters of the U.S.

Riverine wetlands may be present along the unlined canals that are crossed by the project corridors. These potential wetlands were not delineated during the field surveys because they would not be disturbed by the proposed project.

It was assumed that the canals and drains in the project area flow at least intermittently and in some cases, perennially. Examples of the latter would be the Yuma Main Canal and the Reservation Main Drain, two of the largest canals in the project area. Based on these assumed flow regimes, the canals identified in Table 2.4-1 would be considered relatively perennial waters. The presence of relatively perennial water would indicate the presence of jurisdictional other waters of the U.S., although it does not indicate the presence of federally-jurisdictional wetlands.

**Table 2.4-1. Potentially Jurisdictional "Other Waters" of the U.S.**

| Map No. | Canal Name | Location of Crossing |
|---|---|---|
| 1 | Reservation Main Drain | Stalnacker Road |
| 2 | Unnamed canal | Fisher and Parkman Roads |
| 3 | 3 Reservation Main Drain | Fisher Road |
| 4 | Hopi Canal | Bard and Whitmore Roads |
| 5 | Cocopah Canal | Ross Road |
| 6 | Unnamed canal | Fisher and Ross Roads |
| 7 | Papago Canal | Perez Road |
| 9 | Cocopah Canal | Flood and Arnold Roads |

| Map No. | Canal Name | Location of Crossing |
|---|---|---|
| 11 | Reservation Main Drain | Picacho Road |
| 12 | Pima Canal | Picacho and Haughtelin Roads |
| 14 | Cocopah Canal | Picacho Road |
| 15 | Reservation Main Drain | Arnold Road |
| 16 | Yuma Main Canal | Arnold Road |

*Source: Tierra Right of Way Services (2015d)*

### Waters of the State

The flowing canals and drains in the project area all have varying capacities to provide habitat for terrestrial and/or aquatic species; therefore, they would be considered streams by the CDFW. Because only one of the three Army Corps of Engineers' wetland indicators needs to be present for CDFW to consider an area a wetland, several of the unlined canals crossed by the project corridors would also be considered state-jurisdictional wetlands (Table 2.4-2).

**Table 2.4-2. Potential Waters of the State**

| Map No. | Canal Name | Location of crossing | Waters of the State | |
|---|---|---|---|---|
| | | | Wetlands | Streams |
| 1 | Reservation Main Drain | Stalnacker Road | Yes | Yes |
| 2 | Unnamed canal and I and were in in | There are containers Sears Fisher and Parkman Roads | Yes | Yes |
| 3 | 3 Reservation Main Drain | Fisher Road | Yes | Yes |
| 4 | Hopi Canal | Bard and Whitmore Roads | Yes | Yes |
| 5 | Cocopah Canal | Ross Road | No | Yes |
| 6 | Unnamed canal | Fisher and Ross Roads | No | Yes |
| 7 | Papago Canal | Perez Road | Yes | Yes |
| 8 | Pima Canal | Haughtelin and Perez Roads | No | Yes |
| 9 | Cocopah Canal | Flood and Arnold Roads | No | Yes |
| 10 | Navajo Canal | Picacho and Jackson Roads | No | Yes |
| 11 | Reservation Main Drain | Picacho Road | Yes | Yes |
| 12 | Pima Canal | Picacho and Haughtelin Roads | No | Yes |
| 13 | Pueblo Canal | Picacho and Indian Rock Roads | No | Yes |
| 14 | Cocopah Canal | Picacho Road | Yes | Yes |
| 15 | Reservation Main Drain | Arnold Road | Yes | Yes |
| 16 | Yuma Main Canal | Arnold Road | Yes | Yes |
| 17 | Walapai Canal | Arnold Road | No | Yes |

*Source: Tierra Right of Way Services (2015d)*

### Special Status Species

A reconnaissance survey was conducted by Tierra Right-of-Way Services on July 15 and 16, 2014, to identify areas of potential habitat for special status species. Prior to the survey, a review of reported occurrences in the project vicinity was conducted using the information from CDFW's California Natural Diversity Database (CNDDB) and a list of Natural Resources of Concern that includes federally listed special-status species for Imperial County that was obtained from the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPAC) system. The CNDDB and USFWS lists are included in the Biological Resources Evaluation. The results of the database review and reconnaissance survey indicate that seven special status wildlife species are either known to occur or have the potential to occur in the study area (Table 2.4-3). Because of the previously disturbed nature of the study area and its lack of native vegetation, no special status plant species were expected to be found during the surveys, and none were identified.

**Table 2.4-3. Special Status Species with the Potential to Occur in the Study Area**

| Scientific Name | Common Name | Status (USFWS/State/CNPS) |
|---|---|---|
| **Amphibians** | | |
| *Incilius alvarius* | Sonoran desert toad | -/SSC/- |
| *Lithobates yavapaiensis* | Lowland leopard frog | -/SSC/- |
| **Birds** | | |
| *Lanius ludovicianus* | Loggerhead shrike | -/SSC/- |
| *Pyrocephalus rubinus* | Vermilion flycatcher | -/SSC/- |
| *Xanthocephalus xanthocephalus* | Yellow-headed blackbird | -/SSC/- |
| **Mammals** | | |
| *Corynorhinus townsendii* | Townsend's big-eared bat | -/CT, SSC/- |
| *Sigmoden hispidus eremicus* | Yuma hispid cotton rat | -/SSC/- |

*Key:* SSC = Species of Special Concern, C = Candidate, T = Threatened

### Migratory Birds

The study area and/or areas adjacent to it were determined to contain suitable habitat for two migratory birds appearing on the American Bird Conservancy's U.S. Watchlist of Birds of Conservation Concern, prairie falcon (*Falco mexicanus*) and white-faced ibis (*Plegadis chihi*). No bird nests were observed in the project corridors at the time of the surveys; this lack of nests was due to the project corridors being essentially devoid of vegetation large enough to support bird nests. However, areas adjacent to the project corridors and the study area contain trees and other vegetation that may be utilized by migratory birds.

### Invasive Species

Three invasive plant species appearing on the California Department of Food and Agriculture (CDFA) Noxious Weed Species List and/or on the California Invasive Plant Council (CIPC) Invasive Plant Inventory list were identified in the study area. These invasive species are Russian thistle *(Salsola kali),* kariba weed *(Salvinia molesta)*, and salt cedar *(Tamarix ramosissima)*. With the exception of Russian thistle and a few scattered dryland infestations of salt cedar, all of these invasive species were associated with the irrigation canals crossed by the project corridors. The only aquatic invasive species identified, kariba weed, was found in the Reservation Main Drain at the proposed corridor crossings on Fisher, Picacho, and Stalnacker, Roads (Crossings 1, 3, and 11, indicated in Figure 2). Two of the invasive species, kariba weed

and salt cedar, have a "High" rating assigned by the CIPC, indicating that these species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. The remaining species, Russian thistle, has a "Limited" rating, indicating that it is an invasive species, but its ecological impacts are minor on a statewide level or there was not enough information to justify a higher score.

## *Regulatory Setting*

### *Federal*

#### Endangered Species Act

The Endangered Species Act (ESA) (16 USC Section 1531 et seq.; 50 CFR Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The USFWS and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, the USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species.

Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC Section 1532). Section 7 of the ESA (16 USC Section 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats. Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from the USFWS or NMFS for otherwise lawful activities that incidentally may result in "take" of endangered or threatened species, subject to specific conditions. A habitat conservation plan (HCP) must accompany an application for an incidental take permit.

#### Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC, Chapter 7, Subchapter II) implements international treaties which protect migratory birds. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The act encompasses whole birds, parts of birds, occupied bird nests, and eggs. Disturbance during the breeding season that could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to abandonment, would violate the MBTA. The Migratory Bird Permit Memorandum dated April 15, 2003, clarifies that destruction of most unoccupied bird nests (without eggs or nestlings) is permissible under MBTA; exceptions include nests of federally threatened or endangered migratory birds, bald eagles (*Haliaeetus leucocephalus*), or golden eagles (*Aquila chrysaetos*), which have specific protection measures beyond the MBTA (see below). USFWS is responsible for overseeing compliance with MBTA.

#### Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Section 668; 50 CFR Part 22) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald and golden eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." USFWS administers the Bald and Golden Eagle Protection Act.

#### Clean Water Act

Clean Water Act (CWA) Section 404 regulates the discharge of dredged and fill materials into waters of the U.S., which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to

be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, vernal pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of U.S. Army Corps of Engineers (USACE) under the provisions of CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of CWA.

Section 401 of the CWA requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the U.S. In California, the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan). Applicants for a federal license or permit to conduct activities that may result in the discharge to waters of the U.S. (including wetlands or vernal pools) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA

#### Executive Order 11990 (1977): Protection of Wetlands

EO 11990 provides for protection of wetlands from federal or federally approved projects when a practicable alternative is available. If impacts on wetlands cannot be avoided, all practicable measures to minimize harm must be included. USACE is the administering agency.

#### Executive Order 13112 (1999): Invasive Species

EO 13112 directs all federal agencies to prevent and control introductions of invasive non-native species in a cost-effective and environmentally sound manner to minimize their impacts on economics, ecology, and human health. As directed by this EO, a national invasive species management plan guides federal actions to prevent, control, and minimize invasive species and their impacts (National Invasive Species Council 2008). To support implementation of this plan, USACE released a memorandum describing the U.S. Army Corps of Engineers Invasive Species Policy (USACE 2009). This policy includes addressing invasive species effects in the impact analyses for civil works projects.

### *State*

#### California Environmental Quality Act

Section 15065 of the CEQA Guidelines (14 CCR) requires that a lead agency determine whether a project has the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, and/or substantially reduce the number or restrict the range of an endangered, rare, or threatened species. Such impacts would be considered significant under CEQA.

CEQA Guidelines Section 15380 defines the terms “species,” “endangered,” “rare,” and “threatened” as they pertain to CEQA. Section 15380 also provides a greater level of consideration for state-listed or federally listed species, and for any species that can be shown to meet the criteria for listing, but that has not yet been listed. In summary, the criteria for considering a species endangered, rare, or threatened under CEQA are as follows:

- when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or

- although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or

- the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as defined in the ESA.

Species that meet the criteria listed above are often considered "Species of Special Concern" by CDFW. Species of Special Concern is an administrative designation and carries no formal legal status. Generally, Species of Special Concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined in Section 15380 of the CEQA Guidelines; however, some older lists of Species of Special Concern were not developed using criteria relevant to CEQA, and the information used in generating those lists is out of date. Therefore, the current circumstances of each unlisted Species of Special Concern must be considered in the context of Section 15380 criteria and not automatically presumed to be rare, threatened, or endangered.

### California Fish and Game Code

*Sections 700 and Others—Species Protection*

The Fish and Game Code established CDFW (Fish & Game Code Section 700) and states that the fish and wildlife resources of the state are held in trust for the people of the state by and through CDFW (Fish & Game Code Section 711.7[a]). Fish & Game Code Section 1802 states that CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. All licenses, permits, tag reservations, and other entitlements for the take of fish and game authorized by the Fish and Game Code are prepared and issued by CDFW (Fish & Game Code Section 1050[a]). Provisions of the Fish and Game Code establish special protection to certain enumerated species, such as Section 5515, which lists fully protected fish species.

*Section 1602—Lake or Streambed Alteration*

Fish & Game Code Section 1602 states that "an entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" unless CDFW receives written notification regarding the activity and the entity pays the applicable fee. If CDFW determines that the activity may substantially adversely affect an existing fish or wildlife resource, an agreement is issued to the entity that includes reasonable measures necessary to protect the resource.

*Sections 1900–1913 (Native Plant Protection Act)*

The Native Plant Protection Act (NPPA) of 1977 (California Fish & Game Code Sections 1900–1913) directs CDFW to carry out the California State Legislature's intent to "preserve, protect and enhance rare and endangered plants in this state." NPPA authorizes CDFW to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances.

CDFW and the California Native Plant Society (CNPS), a non-governmental organization, jointly maintain CRPR lists. These lists include plant species of concern in California. Vascular plants included on these lists are defined as follows:

**List 1A:** Plants considered extinct or extirpated in California.

**List 1B:** Plants that are rare, threatened, or endangered in California and elsewhere.

**List 2:** Plants that are rare, threatened, or endangered in California, but more common elsewhere.

**List 3:** Plants about which more information is needed—review list.

**List 4:** Plants of limited distribution—watch list.

Plants appearing on Lists 1 and 2 are, in general, considered to meet CEQA Guidelines Section 15380(b) criteria, and adverse effects to these species may be considered significant. Impacts to plants that are on Lists 3 and 4 are also considered during CEQA review, although because these species are typically not as rare as those on Lists 1 and 2, impacts on them are less frequently considered potentially significant.

*Sections 2050-2098 (California Endangered Species Act)*

The California Endangered Species Act (CESA) (Fish & Game Code Sections 2050–2098) prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under the CESA as endangered or threatened, or would result in the destruction or adverse modification of habitat essential to the continued existence of those species, if reasonable and prudent alternatives are available that would avoid a jeopardy finding.

Section 2080 of the Fish & Game Code prohibits the take of any species that is state listed as endangered or threatened, or designated as a candidate for such listing. "take" is defined by Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" an individual of a listed species. Under the CESA, CDFW may issue an incidental take permit authorizing the take of listed and candidate species that is incidental to an otherwise lawful activity, subject to specified conditions.

*Sections 3503, 3513, and 3800 (Nesting Bird Protections)*

Fish & Game Code Sections 3503, 3513, and 3800 protect native and migratory birds, including their active or inactive nests and eggs, from all forms of take. Section 3503 states the following: "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Section 3503.3 specifically protects raptors (i.e., eagles, falcons, hawks, and owls) (i.e., birds in the orders Falconiformes or Strigiformes) and their nests. Section 3513 protects migratory birds, as it states the following: "It is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act." Section 3800 of the California Fish and Game Code protects from take all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds or nongame birds, except when take is related to mining operations, and when a mitigation plan has been prepared and approved by CDFW.

*Sections 3511, 4700, 5050, and 5515 (Fully Protected Species)*

Sections 3511, 4700, 5050, and 5515 of the Fish & Game Code identify species that are fully protected from all forms of take. Section 3511 lists fully protected birds, Section 5515 lists fully protected fish, Section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians.

**Porter–Cologne Water Quality Control Act**

See Section 2.9, "Hydrology and Water Quality."

#### National Pollutant Discharge Elimination System Permits

See Section 2.9, "Hydrology and Water Quality."

### *Local*

#### Lower Colorado River Multi-Species Conservation Program

The Lower Colorado River Multi-Species Conservation Program (LCR MSCP) was created to balance the use of the Colorado River water resources with the conservation of native species and their habitats. The program works toward the recovery of species currently listed under ESA. It also reduces the likelihood of additional species listings. Implemented over a 50-year period, the program accommodates current water diversions and power production and will optimize opportunities for future water and power development by providing ESA compliance through the implementation of a Habitat Conservation Plan (HCP) that was finalized in December 2004.

The program area extends over 400 miles of the lower Colorado River from Lake Mead to the southernmost border with Mexico and includes Lakes Mead, Mohave, and Havasu, as well as the historic 100-year floodplain where the proposed project is located, along the main stem of the lower Colorado River. The HCP calls for the creation of over 8,100 acres of habitat for fish and wildlife species and the production of over 1.2 million native fish to augment existing populations. The plan will benefit at least 26 species, most of which are state- or federally listed Endangered, Threatened, or sensitive species.

The Bureau of Reclamation is the implementing agency for the LCR MSCP. Partnership involvement occurs primarily through the LCR MSCP Steering Committee (currently representing 57 entities including state and federal agencies, water and power users, municipalities, Native American tribes, conservation organizations, and other interested parties), which provides input and oversight functions in support of LCR MSCP implementation. Program costs are evenly divided between the federal government and non-federal partners.

#### Imperial County General Plan

The Imperial County General Plan, which applies to all public and private projects in unincorporated Imperial County, consists of 10 Elements: Land Use, Housing, Circulation and Scenic Highways, Noise, Seismic and Public Safety, Agricultural, Conservation and Open Space, Geothermal/Alternative Energy and Transmission, Water, and Parks & Recreation.

The Conservation and Open Space Element of the General Plan provides detailed plans and measures for the preservation and management of biological and cultural resources, soils, minerals, energy, regional aesthetics, air quality, and open space. The purpose of the Conservation and Open Space Element is to promote the protection, maintenance, and use of the county's natural resources, with particular emphasis on scarce resources, and to prevent wasteful exploitation, destruction, and neglect of the state's natural resources. Additionally, the purpose of this Element is to recognize that natural resources must be maintained for their ecological value for the direct benefit to the public, open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety (Imperial County 2008b).

Figure 1 in the Conservation and Open Space Element identifies the project area and surrounding area as "Disturbed (Agriculture/Urban)." Figure 4 in the Conservation and Open Space Element shows that the Yuma Riverbend Significance Natural Area is in the general vicinity of the project area.

## 2.4.2 Environmental Impacts

***a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? (Less than Significant with Mitigation; Minor with Implementation of Mitigation)***

The project area is highly disturbed and contains little to no native vegetation. No special status plant species were identified during field surveys, and none are expected to occur. Impacts to special status plant species, if any, are anticipated to be less than significant and minor.

The proposed project would involve plowing and direction boring construction activities that could adversely affect habitat potentially used by one or more of the species listed in Table 2.4-3. The Sonoran desert toad and lowland leopard frog have the potential to occur along irrigation canals in the project area. Implementation of the proposed project could impact these two species if individuals came into contact with construction equipment or personnel, or if individuals attempted to flee the construction area and are subjected to increased chances of predation or other harm. Implementation of **Mitigation Measures BIO-1** and **BIO-2** would reduce these potential impacts to a less-than-significant and minor level.

The loggerhead shrike and yellow-headed blackbird have the potential to occur in the agricultural fields adjacent to the project area. Townsend's big-eared bat has the potential to forage in agricultural fields and other vegetated areas adjacent to the project area, such as residential landscaping. Implementation of **Mitigation Measures BIO-2** and **BIO-3** would reduce any such potential impacts to a less-than-significant and minor level.

The vermilion flycatcher and Yuma hispid cotton rat have the potential to occur in the agricultural fields adjacent to the project area and along the vegetated irrigation canals within the project area. Implementation of **Mitigation Measures BIO-1** through **BIO-3** would reduce such impacts, should they occur, to a less-than significant and minor level.

**Mitigation Measure BIO-1: Avoidance of Irrigation Canals and Banks**

All irrigation canals in the project area shall be bored beneath and avoided during construction. Bore pits shall be placed a minimum distance of 16 feet beyond either the top of the canal bank or the maximum extent of any vegetation present along the canal's margin.

**Mitigation Measure BIO-2: Avoidance of Agricultural Fields**

All agricultural fields shall be avoided during construction activities.

**Mitigation Measure BIO-3: Avoidance of Trees and Minimization of Vegetation Clearing**

No trees shall be removed during project construction. If vegetation trimming is required to complete the installations, trimming shall be limited to the absolute minimum necessary.

***b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service? (Less than Significant with Mitigation; Minor with Implementation of Mitigation)***

No sensitive natural communities, as defined by CDFW, are present in the study area. Figure 4 of the Conservation and Open Space Element of the Imperial County General Plan shows that the Yuma

Riverbend Significant Natural Area is in the general vicinity of the project area; however, due to the absence of sensitive natural communities in the project area, it does not appear to meet the CDFW criteria for Significant Natural Area, listed below:

- Areas supporting extremely rare species or natural communities;
- Supporting associations or concentrations of rare species or communities;
- Areas exhibiting representative examples of common or rare communities;
- Areas of high species-richness or habitat-richness.

Nevertheless, the margins of unlined canals in the study area, especially the Reservation Main Drain, contain limited riparian vegetation, consisting mostly of dense common reed (*Phragmites australis*) and invasive species such as salt cedar, which may provide suitable habitat for wildlife species. The canals themselves may provide suitable habitat for fish. With implementation of **Mitigation Measure BIO-1**, boring would occur beneath all canals in the project area and vegetation along the banks of the canals would be avoided. Therefore, project impacts on riparian or other sensitive natural communities would be less than significant and minor with mitigation.

***c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (Less than Significant with Mitigation; Minor with Implementation of Mitigation)***

Potentially jurisdictional riverine wetlands or other waters of the U.S. may be present along some of the canals in the project area. With implementation of **Mitigation Measure BIO-1**, boring would occur beneath all canals in the project area, and vegetation along the banks of the canals would be avoided. Therefore, project impacts on federally protected wetlands would be less than significant and minor with mitigation.

***d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (Less than Significant with Mitigation; Minor with Implementation of Mitigation)***

The proposed project would not create any new barriers to the movement of any native resident or migratory species given that the proposed alignment is located along existing roadways and the proposed installation would consist of buried cables and the installation of 10 equipment cabinets. No evidence of wildlife corridors was observed during the surveys. Migratory birds may be present in the areas surrounding the project corridors. With implementation of **Mitigation Measures BIO-2** and **BIO-3**, impacts to migratory birds are expected to be less than significant and minor.

***e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact; None)***

The proposed project would be consistent with the Imperial County General Plan's Conservation and Open Space Element because all construction activities would occur in previously disturbed areas along existing roads and no new removal of undisturbed habitat would occur. There would be no impact related to local biological resource–related policies and ordinances.

***f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (Less than Significant with Mitigation; Minor with Implementation of Mitigation)***

Due to the presence of invasive plant species in the study area, implementation of the proposed project has the potential to result in the further spread of existing noxious weeds. Invasive plant species could also be introduced into the study area by construction equipment, vehicles, personnel, or imported fill or other material. Further introduction of invasive plant species could adversely impact the irrigation canals in the project area and their associated riparian areas, where present. However, with implementation of **Mitigation Measures BIO-1, BIO-2,** and **BIO-4**, the proposed project would be consistent with the conservation objectives of the Imperial County General Plan and the LCR MSCP because impacts are expected to be reduced to a less-than significant and minor level.

**Mitigation Measure BIO-4: Invasive Plant Species Best Management Practices**

Prior to the transport of any construction vehicles or equipment to the project area, these vehicles and equipment shall be thoroughly cleaned to remove any potential dirt or plant material (i.e., seeds).

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no effect on biological resources.

# 2.5 Cultural Resources

| Would the project | Potentially Significant Impact | Less than Significant with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Cause a substantial adverse change in the significance of a historical resource as defined in Section15064.5? | ☐ | ☒ | ☐ | ☐ |
| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section15064.5? | ☐ | ☒ | ☐ | ☐ |
| c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☐ | ☒ |
| d. Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☒ | ☐ | ☐ |

## 2.5.1 Setting

### *Environmental Setting*

The following descriptions of the environmental setting are based on information presented in the Class III Cultural Resources Survey Report, prepared for the project (Tierra Right of Way Services 2015b), unless otherwise indicated.

#### *Ethnography*

The Quechan are a Native American people inhabiting the region around the confluence of the Gila and Colorado Rivers. The name "Quechan" literally means "those who descended." The name "Yuma" is the Spanish name for the Quechan and likely derives from the Akimel O'odham/Tohono O'odham name for them, *yumi*. They are one of the several Yuman-speaking groups in southern California and western Arizona. For convenience, ethnologists, beginning with Kroeber in 1943 (Stewart 1983), have placed the Yuman people into four broad geographical groups. The Delta Yumans include such people as the Cocopah in the Colorado delta area; the Upland Arizona Yumans include the Walapai, Havasupai, and Yavapai; and the California Yuman speakers consist of southern Californian groups such as the Kumeyaay (or Kamia) and Tipai-Ipai (or Diegueño). The fourth group, the River Yumans, comprise two closely related peoples, the Mohave and the Quechan. The Mohave and Quechan were culturally similar and, traditionally, were allied in opposition to several other groups in the area, including the Halchidhoma, the Maricopa, and the Cocopah.

The following brief ethnographic account attempts to form a model of Quechan culture in pre-reservation times (i.e., prior to 1884) while tracing the impacts from Euroamerican interaction with the Quechan people historically.

##### History and Early Sources

The early records of contact between the Spanish and the Yuman tribes that lived along the Lower Colorado are sparse. The earliest records, those of the Hernando de Alarcón and Melchior Diaz expeditions in the 1540s, do not mention the Quechan at all. The first substantial records of the Quechan made by Europeans were during Juan de Oñate's 1604 expedition of the Colorado River via the Bill Williams Fork. The next contact with the Spanish occurred during Father Eusebio Kino's expeditions to ascertain whether California was an island or peninsula beginning in 1698. Kino was apparently well-received by the different Yuman

groups on the Colorado and Gila Rivers. Kino's last visit to the Quechan was in 1702, during his final expedition to determine California's geographical status.

The next visit from the Spanish did not occur until 1748, when the Jesuit missionary Father Jacobo Sedelmayr visited the area. However, unlike Kino, he was greeted with hostility by the Quechan. Part of the reason for this hostility was likely related to widespread epidemics among the Lower Colorado tribes from diseases that had been introduced by Europeans. In addition, the Spanish slave trade (a practice later adopted by the Quechan) was also causing increasing hostilities elsewhere in the region. In 1771, the Spanish had become fixated on establishing a permanent route between Sonora and Alta California via the Colorado River and Gila River confluence region, or what would eventually come to be known as the Yuma Route or Yuma Crossing. Spanish presence in the area accordingly intensified. The explorations for this route were led by General de Anza. At the same time, Father Franciso Garcés was busy trying find a route through Yuma country to the Hopi region for missionizing purposes, and was also conducting vigorous missionary activity among the Quechan.

Over the next 10 years, Spanish influence on the Quechan and other Lower Colorado tribes was great due to these activities, but also because of the introduction of wheat as a winter crop and domesticated livestock (particularly poultry). The Spanish established two settlements near the crossing, the pueblos of Yuma and Xuksi'l, consisting of farmers, priests, and soldiers; these settlers allowed their cattle to graze in the Quechan fields, effectively destroying their crops. This would occur again in 1849 during the California Gold Rush, when vast numbers of people traveled through the crossing. Warfare related to the ongoing slave trade continued, as did epidemics; syphilis was introduced to the area during the 1774 De Anza expedition.

In the summer of 1781, the Quechan successfully revolted against the Spanish, destroying both settlements and killing 95 settlers, soldiers, and missionaries (including Garcés) and taking 76 people captive. The route from Sonora to Alta California via the Colorado-Gila confluence area was effectively closed off, and the Quechan remained relatively isolated until 1827, when the Quechan opened the crossing to Mexican travelers taking the slave trade road between Caborca, Sonora, and southern California.

Because of the sporadic contacts between the Spanish and the Quechan, and because of the success of the revolt of 1781, the Quechan retained many of their cultural traditions and lifeways despite the Spanish enculturation of the 1770s. Nevertheless, during the course of the nineteenth century, the Quechan became increasingly subjected to Euroamerican political, religious, and economic impacts. These included the influx of would-be miners following the discovery of gold in California in 1848, the establishment of Fort Yuma in 1852, the arrival of the railroad in 1877, the establishment of the reservation and Catholic school in the 1880s, the 1893 introduction of the federal government's land allotment system (resulting from a local application of the Dawes Act of 1887), and irrigation projects.

### Territory and Settlement

The Quechan account of their origin states that they, like most of the other Lower Colorado tribes and other tribes farther to the west (such as the Kumeyaay in the San Diego area), came from the sacred mountain of Avikame (Newberry Mountain, near Needles, California). It is here that they were created by a creator being known as *Kwikumat* or *Kukumat*. From here, they migrated south. The lands regarded as traditional by the Quechan encompass an area extending from Needles to the Gulf of California. An anthropological model hypothesizes that the Quechan, as a tribal identity, formed between the thirteenth and eighteenth centuries when several patrilineal bands formed into a tribal affinity. Group proximity during horticultural activities, linguistic affiliation, and warfare may account for this formation.

Geographically, the Quechan were organized into a number of rancherias, each consisting of several hundred people, organized into extended family groups. These rancherias were distributed along the Colorado River north and south of the Gila confluence and along the Gila (according to some Spanish accounts, as far as 42 km [26 miles] east of the confluence). The internal structure of each rancheria changed throughout the year, with each extended family moving to their river bottomlands during the summer farming season and returning to high ground in the winter and during spring flooding. The rancherias also shifted up and down the rivers in response to food shortages and warfare. Because of the warm climate, substantial housing was uncommon. Families dwelt in dome-shaped arrowweed houses and ramadas both on high ground and near their fields during the growing season. In each rancheria, one or two larger and more substantial houses were occupied by the leading families. These houses could accommodate other rancheria members in extreme cold.

### Subsistence

Throughout their history (and presumably prehistory), the Quechan were primarily gatherers and horticulturalists, something attested to by the early Spanish chroniclers. Wild game was not a primary source of nutrition, as the harsh desert conditions beyond the Colorado River's floodplains limited the viability of hunting. Cultivated foods included maize, tepary beans, various melons, pumpkins, and wild grass seed; other foods, such as watermelons, black-eyed beans, and wheat, were introduced by Euroamerican immigrants. Interestingly, watermelons, a crop that spread extremely rapidly among North American Native populations upon its introduction, had been adopted by the Quechan prior to Kino's visit in the late seventeenth century.

The Quechan practiced a diversified horticultural strategy, and planting of several food crops occurred at different times of year. Maize and melons were planted in February and were not dependent on floodwater farming. Other crops were planted after the spring flooding of the Colorado River. Winter wheat was sowed in the autumn and harvested just before the floods. The wild grasses, which provided seeds to be ground into meal, were sown in less fertile soils. The other main wild foods were mesquite and screw bean pods, which were probably the primary source of nutrition during years of crop failure (Bee 1983:86–87).

As discussed earlier, both cultivated and wild foods were affected by the arrival of Euroamericans, who would allow (or could not prevent) cattle to graze in Quechan fields. In 1893, a long-term impact was made on Quechan horticulture by an agreement (based on the Dawes Severalty Act of 1877) that persuaded Quechan farmers to limit their land holdings to 5 acres per person. All remaining land was then sold at public auction. This was a direct move by non-Natives to acquire the fertile bottomlands of the Colorado River that the Quechan had farmed for centuries. The allotments were increased to 10 acres in 1912. Meanwhile, the Yuma Project had been initiated by the U.S. Reclamation Service (later the Bureau of Reclamation) in 1904 and had the effect of disrupting the annual flooding and silt deposition of the Colorado River. By the 1920s and 1930s, farming was no longer a viable occupation, with many Quechans becoming wage workers in Yuma. After years of claiming that agreement was signed under duress and that the U.S government had not fulfilled its terms, 25,000 acres of land that had belonged to the original 1884 reservation were restored to the Quechan tribe in 1978. Today, most of the farmland is leased to non-Native farmers.

### Kinship and Polity

Socially, the Quechan were organized into patrilineal clans. The clans were exogamous units, with clan names borne exclusively by women. Some clan names may have originated from other tribes, such as the Mohave, Maricopa, or the Kumayaay. The rancherias were agamous; that is, anyone could marry outside their rancheria, but men most frequently married women from their own rancheria. Consequently, settlement was in practice bilocal, an important factor for the extended family as the primary economic

unit. Clan membership did not necessarily correspond with rancheria affiliation. Clan functions were largely disregarded by the 1960s, and many Quechans had forgotten their affiliation by that time.

In general, the clan and rancheria were the basic social units among the Quechan, with the extended family the economic unit, as mentioned above. Tribal consciousness, when all the people identified as "Quechan" rather than as members of the smaller-scale social units of clan and rancheria, occurred during warfare, harvest gatherings, and annual mourning ceremonies.

Early European sources described two main leadership positions among the Quechan, one leading civil affairs and one in charge of warfare. However, it seems that these roles may have been largely traditional rather than consisting of any real political power. In practice, decisions were made by the leaders of individual rancherias, who probably consulted in council for matters of concern on the tribal level. Although some degree of inheritance may have been a factor in determining leaders, competence was a more powerful attribute. Competence depended upon public approval, but also upon personal power bestowed by special dreams. The dreams of a leader or candidate for leadership were evaluated by a group of elders, and the individual was required to experience dreams appropriate to his office, although he was also required to be an effective leader.

#### Warfare

Warfare was a cornerstone of Quechan culture. Two types of warfare were distinguished: the war party and the small raiding party. The raiding party was focused on creating havoc and capturing horses or captives. Conflicts involving the war party consisted of a village raid followed by an arranged battle in which the opposing parties faced one another in two lines, ending in a hand-to-hand melee. It has been pointed out that this had greater resemblance to a brutal team sport, where the two sides would agree upon weapons to be used and wait to attack until both sides had fallen into formation. The arsenal consisted a "potato masher" war club of mesquite wood (typically a tapered cylinder mounted on a handle), wooden spears with firehardened tips, and bows. Because of their distinctive war club, the Quechan are referred to by the Spanish word "Garroteros"— literally, "clubbers."

Warfare among all the Yuman tribes was closely intertwined with myth and ceremony, although casualties were real and occasionally heavy. An account of the first war party is given in the central creation myth. Traditionally, the function of warfare among the Lower Colorado tribes was connected to tribal prestige and ritual, rather than conflict over resources or similar, comparatively mundane concerns. For example, when a sorcerer was killed, this was an act that often precipitated group conflict. This is again connected to the importance of dreams in Yuman culture: dreams of success in battle were highly valued and became incorporated into song cycles. In addition, like the rancheria leaders, war leaders, ceremonial managers, and shamans obtained their position through dreams.

The Quechan and Mohave (to whom they are closely related culturally and linguistically) did not usually fight one another, but both engaged in conflicts with the Maricopa and Cocopah, who were sometimes allied with the Pima. There was likely a long history of warfare among the Yuman tribes that predated the arrival of Europeans. However, warfare may have increased in scale and intensity during the eighteenth and early nineteenth centuries for economic reasons—a departure from the tradition of "ritual" warfare. The motivation for waging war appears to have been related to the taking of captives to trade to the Spanish and other tribes for horses and other goods. It appears, however, that land acquisition was still not a motivation for war.

#### Death and Mourning

Mourning, along with dreaming and warfare, was one of the three most important aspects of the Quechan lifeway. Upon an individual's death, all of his or her belongings, including the family home, were destroyed

or given away. This sometimes left the deceased's family destitute, and they would be provided for by friends or the rancheria leaders. Inheritance was therefore never an important factor in pre-reservation life. Individual family garden plots were also abandoned, to be used later by non-family members. The *keruk* ceremony, the central mourning ceremony of the Yuman tribes, including the Quechan, was held after the death of an important leader or after an accumulation of deaths to be honored by the families of the deceased. The *keruk* is alternatively known in older literature as *nyimits* or *nimíts*.

A central component of the *keruk* ceremony was a mock battle, prepared for and carried out in the same way as an actual conflict. It also was a reenactment of the battle that was fought following the death of the creator deity Kwikumat. The ceremony also involved the singing of songs commemorating the creation of the world, public mourning, and the destruction of the deceased's property. The ceremony was intertribal and lasted several days, forming an occasion for large-scale social interaction wherein goods were exchanged, marriages were arranged, and enmities were resolved.

The *keruk* appears to have been associated with a pilgrimage trail between Pilot Knob (approximately 10.86 km [6.75 miles] west of modern Winterhaven) and Newberry Mountain (the sacred mountain *Avikame*). It has been noted that the practice of the *keruk* seems to have intensified during the eighteenth and nineteenth centuries, contemporaneous with the intensified conflicts resulting from the horses-for-slaves trade introduced by the Spanish and with an influx of people migrating from the desiccating Lake Cahuilla. They suggest that the *keruk* and the associated pilgrimage was a unifying force transcending conflicts between inimical tribes. Altschul and Ezzo likewise suggest that the intaglios along the trail, which are executed in different styles, were the locations of *keruk* rites unique to and performed by different tribes. The *keruk* has continued into modern times in modified form.

### *Historic Context*

#### Spanish Period

The first entry into what is now Arizona by people of European descent came in the late 1530s. A group of four men, including Álvar Nuñez Cabeza de Vaca, who survived a 1528 shipwreck on the coast of the Gulf of Mexico and then wandered across the Southwest before finally reaching Spanish-held territory in Sonora in 1536, may have passed through the state, although this has been questioned in recent years. Marcos de Niza, a priest dispatched as an advance scout for an expedition into the lands through which the Cabeza de Vaca party supposedly passed, likely explored the eastern part of the state in 1539, although his activities, too, have been called into question by modern researchers. The first European to unequivocally enter Arizona was Francisco Vasquéz de Coronado, who passed through the state on his way to the Pueblo area in New Mexico in 1540. As an adjunct to Coronado's expedition, Hernando de Alarcón was sent by sea up the west coast of Mexico with the intention of linking up with Coronado at some unspecified place. Alarcón discovered the mouth of the Colorado River and a crossing spot at Yuma, but his visit would not lead to any permanent Spanish presence in western Arizona. A few months later, the spot was visited by a second Spanish expedition led by Melchior Díaz, who traveled overland from Sonora via a trail that he would name the Camino del Diablo in order to meet up with Alarcón. Díaz was too late to meet up with Alarcón, but found a message left by his countryman. Alarcón and Díaz described the lower Colorado River area as a war-torn region and mentioned native groups they identified as the Quiquima or Quicoma and Koxwan or Ciana (*koxkha'n*). It is not clear who these people were, but they are thought to be the Quechan or Kouanas.

Over the course of the sixteenth and seventeenth centuries, the Spanish pushed their northern frontier inexorably northward from central Mexico. While they penetrated into present-day New Mexico in the late sixteenth century, establishing a colony along the Rio Grande north of present day Albuquerque in 1598, no comparable presence was established in Arizona until roughly a century later, and this settlement (at least initially) took on a very different form. In the 1680s, Jesuit missionaries, led by the Austrian Eusebio

Francisco Kino, began to establish missions in Baja California and northern Sonora, the Sonoran missions ultimately extending north of the modern International Border into Arizona. Most of the Sonoran missions were located along a north-south axis, which, north of the border, corresponds to the Santa Cruz River Valley. One exception, the most remote of the Sonoran missions, was Nuestra Señora de Loreto y San Marcelo de Sonoyta, located about 50.0 miles southeast of Dateland. This community was (and is) located on the Camino del Diablo pioneered by Díaz 150 years earlier. The Camino del Diablo never became a heavily traveled route, but it was periodically used by missionaries to move overland between the Sonoran and Baja California missions. In 1774, military officer Juan Batista de Anza used the trail to lead a party of 200 colonists overland to California. The colonists settled at Monterrey while Anza himself and a small scouting party proceeded north and reconnoitered the sites for what would become the Presidio of San Francisco and the Mission San Francisco de Asís.

Kino had visited the confluence of the Gila and Colorado Rivers during expeditions in 1700 and 1701. Kino was the first to refer to the people inhabiting the region, who called themselves the Kwichyana or Kuchiana, as the Yuma or Yuman. The misnomer "Yuma" derived from the missionaries' misunderstanding of the word "*yah-may-o*," meaning "son of a captain" or chief. Following these visits, interaction between the Spanish and the Quechan increased significantly. Nearly a century later, two missions and accompanying settlements were established north of the confluence. The Spanish recognized the strategic importance of the Colorado River crossing at Yuma and consequently desired to remain on good relations with the Quechan. However, disputes over resources between settlers and natives led to a native uprising in 1801. Following the uprising, interactions between Europeans and the Quechan were minimal until the American period.

### American Period

Following a relatively short interval (A.D. 1821−1848) during which California and the Southwest was controlled by newly independent Mexico, the United States gained possession of most of Arizona with the Treaty of Guadalupe Hidalgo; they gained the remainder with the Gadsden Purchase of 1853. California attained statehood in 1850, becoming the 31st state. The 1850s were particularly tumultuous for the Yuman speaking peoples along the lower Colorado River. With the onset of the California Gold Rush following the discovery of gold at Sutter's Mill in 1848, hostilities erupted as increasing numbers of Euroamerican fortune hunters headed west into California. In the lower Colorado River region, the conflicts between Native Americans and would-be miners resulted in the development of Camp Yuma in 1852, after which time the Quechan lost control of the lands around the Yuma Crossing. In 1858, the Mohave War began following a Mohave attack on the Beale's Road immigrant trail (the Battle of Beale's Crossing). This led to the establishment of Fort Mohave near Topoc, the second major U.S. military outpost on the Colorado River, in 1859. In 1860, the U.S. Army defeated the Mohave in the last major conflict in the lower Colorado River region.

The military post of Fort Yuma had originally been established in 1849 as Camp Calhoun, later becoming known as Camp Independence and then Camp Yuma. The initial purpose of the camp was to protect the nascent settlement of Colorado City (which would eventually become Yuma) and its strategically located river crossing from the Quechan, who were hostile to the incursion of the settlers. The cost of maintaining the post led to a brief period of abandonment in 1851, but it was re-established in 1852 as thousands of gold seekers began passing through the Yuma Crossing. While the California Gold Rush was the primary impetus for the growth of Colorado City, the settlement expanded when it was recognized that bringing goods via ship to the mouth of the Colorado River and distributing them from the fort was an effective means of getting supplies to other military outposts across the Southwest. This led to the establishment of the U.S. Army Quartermaster Depot, which was in operation from the 1860s until the 1880s.

Colorado City burgeoned as the result of being both a seaport and a major crossing point on the river for travelers and immigrants heading west. After virtual destruction resulting from major flooding in 1862, Colorado City was rebuilt and renamed Arizona City. Following the Civil War, rather elaborate plans were made for the city's continued development as a commercial center. Arizona City was formally incorporated in 1871 and renamed once again as Yuma in 1873. In 1876, the Yuma Territorial Prison was constructed on a hill across from the fort, where it operated for 33 years until it was relocated to Florence, Arizona, because of overcrowding (Arizona State Parks 2015). In 1877, the first locomotive to cross the Colorado River entered Arizona at Yuma, inaugurating the long-anticipated establishment of the railroad in the state. Four years later, the Southern Pacific Railroad connected with the Texas Pacific Railroad east of El Paso.

In 1884, the Fort Yuma Indian Reservation was established for the Quechan on the western (California) side of the river. Prior to this time, the Quechan occupied six rancherias situated above the Colorado floodplain, moving to family farm plots on the floodplain during the growing season after the spring floods and until autumn. It is estimated that the Quechan derived 30–50 percent of their subsistence from agriculture, supplementing a mixed foraging and hunting economy. Quechan families gradually abandoned this lifeway following the establishment of the reservation, where they were allocated 10-acre plots of farmland under the Dawes Severalty Act of 1887, which in turn opened up the remainder of the traditional lands for settlement by non-natives. In 1893, the extent of the reservation was drastically reduced by the U.S. government, which limited reservation lands to 5 acres per living person. Much of the original reservation land was returned to the Quechan in the 1970s.

Fort Yuma itself continued as a military installation until 1883, when its management was transferred to the U.S. Department of the Interior. The end of the Civil War and the declining conflicts with Native Americans further rendered the fort unnecessary. In addition, the arrival of the railroad in 1877 had obviated the need for the military's use of the quartermaster's as a supply distribution hub. Military operations in the Yuma region would remain dormant until the establishment of the Yuma Proving Grounds during World War II.

Much of the subsequent history of Yuma pertains to agriculture and the management of the Colorado River. The Yuma Project, an ambitious endeavor to irrigate the lower Colorado River valley, was initiated by the U.S. Reclamation Service (later the Bureau of Reclamation) in 1904. The Reclamation Service took over the abandoned Fort Yuma facilities as its headquarters. The first project was the Laguna Dam, which was constructed from 1905–1909. Laguna Dam, located about 13 miles northeast of Yuma, gave rise to the construction of several canals, including the Yuma Main Canal and its laterals and the East Main and West Main Canals , both of which split from the Yuma Main in the town of Yuma after diversion beneath the river via the Colorado River Siphon. Construction on the Colorado River Siphon began in 1909 and was completed three years later. A 14.0-foot-diameter tunnel was excavated through the sandstone underlying the river for a distance of nearly 1,000 feet. The tunnel was lined with concrete and was connected to two 74.0-foot-deep vertical shafts on either side of the waterway. The Laguna Dam successfully weathered the severe flooding of 1912 and continued diverting water until 1948, when it was superseded by the Imperial Dam (completed 5 miles upstream from the Laguna Dam in 1938) and the All-American Canal. The All-American Canal replaced the Alamo Canal, a significant segment of which flowed through Mexico. In order to establish a canal that was located exclusively on U.S. lands, the All-American Canal was constructed by the Bureau of Reclamation beginning in the 1930s. By 1942, it became the sole water source for Imperial Valley. The All-American Canal feeds the Bard Water District, which was established in 1927 by water users from the Reservation Division of the Yuma Project. The Bard Water District maintains the Reservation Division, which consists 7,556 acres of land on the Fort Yuma Indian Reservation, and the Bard Division, which consists of 7,120 acres of private land.

To encourage travel along the proposed Ocean-to-Ocean Highway (U.S. Highway 80) that would connect southern California with the rest of the United States, the Ocean-to-Ocean Bridge was constructed across

the Colorado River at Yuma in 1915. Construction of the bridge was a joint effort of the Office of Indian Affairs and the states of California and Arizona, and it was fervently promoted by Yuma's business community. When completed, it was the only highway bridge crossing the Colorado River for some 1,200 miles. For a time during the Great Depression, a checkpoint was established by the state police on the California side of the bridge to prevent the massive influx of people migrating west in search of employment. If the "Okies" or "Arkies" had no money or lacked proof of a job waiting in California, they were not allowed to enter the state. Many of those who were turned away set up camp in Yuma, and a neighborhood still bears the unofficial designation "Okietown." The bridge continued as a crossing point for vehicular traffic until 1988, when it was determined to have become structurally unsound. However, at some point, the bridge was reopened to vehicles, as it currently serves as an access point to the Fort Yuma Indian Reservation. The bridge is now listed on the National Register of Historic Places (NRHP).

Following the United States' entry into World War II, combat training centers were established across the desert Southwest. The harsh desert conditions were considered ideal to prepare soldiers for combat overseas, particularly in North Africa. Camp Young, located in the Mojave Desert between Indio and Desert Center, California, served as headquarters of the Desert Training Center (DTC). Major General George S. Patton was Camp Young's first commanding officer and was assigned the task of selecting other desert locations for additional training areas. Ten other camps were established across the California and Arizona deserts. After Patton went to North Africa, the DTC was renamed the California-Arizona Maneuver Area (CAMA). Over a million men trained at the DTC/CAMA from 1942–1944, when the camps were closed. Camp Pilot Knob (in California) and Camp Laguna (in Arizona) were located in the Yuma vicinity. In 1943, the Yuma Test Branch was established downriver from the Laguna Dam for the purpose of testing portable combat bridges. The Yuma Test Branch closed briefly in 1950 and reopened in 1951 as the Yuma Test Station. The Yuma Test Station became the main artillery and armament testing range in the United States. It was later renamed the Yuma Proving Ground and remains an important military installation today.

### *Paleontology*

The geology of the project area consists of alluvial deposits dating from the late Holocene to historic times. Holocene deposits are generally considered too young to contain fossilized remains.

### *Research Methods*

Prior to fieldwork, a Class I records search was performed by Tierra Right-of-Way Services. The Class I search examined all previously conducted surveys and previously recorded sites and historic properties within a 1.0-mile-radius buffer zone extending from the project footprint. Although the project's area of potential effects (APE) is located only on the California side of the state line, the buffer zone extends into Arizona as well. The Class I research was completed through consultation with the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS) for the California portion of the buffer and via the Arizona State Museum's (ASM's) AZSITE online database for the Arizona portion. In addition, a Sacred Lands File (SLF) request was filed with the California Native American Heritage Commission (NAHC), and U.S. General Land Office (GLO) maps for the relevant Township and Range designations within both California and Arizona were also checked for indications of historic properties in the vicinity of the APE.

### *Records Search*

#### California

The Class I records search found that 43 surveys have been previously conducted and nine sites have been previously recorded within the California portion of the 1.0-mile buffer zone surrounding the project area. In addition, one historic address (the Fort Yuma Train Depot) is present within the buffer zone.

Three linear, non-canal sites are present within the buffer. One of these sites, CA-IMP-7158, the historic Pilot Knob-Tap Drop 4 161kV Transmission Line, crosses the APE at two points. The line is supported, at least in the vicinity of the APE, by wooden towers and is currently in use. The line has been upgraded and maintained since its construction in the 1940s. Another site, CA-IMP-3456, is described as a "road course NE and SW" and is apparently based on a GLO surveyor's notes from 1856. According to the site card, this site is now in Arizona because of a change in the course of the Colorado River. However, no indications of the site exist in the AZSITE database. Finally, a portion of the historic Southern Pacific Railroad (SPRR) passes through the buffer and crosses the APE. The SPRR (which was purchased by the UPRR in the 1990s) was constructed beginning in the 1870s and ran from the Los Angeles area to Yuma and subsequently further into Arizona. The line has been in active use since its original construction. Over the past several decades, a number of surveys in southern California have recorded segments of the SPRR and various features related to it. One such feature is the railroad bridge over the Colorado River, located adjacent to the Ocean-To-Ocean Bridge. This and several other railroad bridges in the vicinity (such as the bridges that cross the Yuma Main Canal and the All-American Canal) are subsumed under site number CA-IMP-3424.

Four sites are historic canals, each presently in active use. The canals consist of the Yuma Main Canal (CA-IMP-6830), the Reservation Main/Cocopah Canal (CA-IMP-6832), the Reservation Main Drain Canal (CA-IMP-6824), and the All-American Canal (CA-IMP-7158).

The last two sites identified by the CHRIS record search within the buffer area appear to be archaeological sites, but little information was provided about these resources.

Of the nine previously recorded sites, five cross the proposed project's APE. These resources are the Pilot Knob-Tap Drop 4 161kV Transmission Line, the SPRR, the Yuma Main Canal, the Reservation Main/Cocopah Canal, and the Reservation Main Drain Canal,

#### Arizona

The Class I records search found that 18 surveys were previously conducted and 22 sites were previously recorded within the Arizona portion of the 1.0-mile buffer zone surrounding the project area. There are also 22 historic properties and 3 historic districts listed on the NRHP within the buffer zone. At least two of the properties, the Ocean-to-Ocean Bridge and the Gandolfo Theater, are cross-listed as archaeological sites and historic properties. These properties lie within Yuma or along the Colorado River.

#### General Land Office Maps

All General Land Office (GLO) maps for the relevant Township and Range designations within both California and Arizona were checked for indications of historic properties in the vicinity of the APE. The maps were accessed via the Bureau of Land Management (BLM) GLO Records website. All maps on which the APE is located were dated February 6, 1857. The APE itself crosses few properties: a "Cottonwood" and an "Indian Field." Within the 1.0-mile buffer, historic properties include Fort Yuma; the "Settlement of Captain Ankrum," which corresponds approximately to the location of modern Winterhaven; and "Western's House." Several sections note that "there are some Indian villages in this Section."

### *Native American Consultation*

A Sacred Lands File and Native American Contacts List request was submitted by Tierra Right-of-Way Services to the California Native American Heritage Association (NAHC) on September 15, 2014. NAHC responded on September 21, 2014, stating that their records search failed to indicate the presence of Native American cultural resources in the immediate project area. Furthermore, the Fort Yuma Quechan Tribal Historic Preservation Officer was contacted by the BIA on May 16, 2014 regarding knowledge of sites of

religious or cultural significance to the tribe in the project area. No such properties were identified through the consultation efforts.

### *Field Survey*

Archaeologists, accompanied by a Quechan tribal monitor, performed a Class III cultural resources survey of the proposed project area on July 15 and 16, 2014, and returned to the project area on March 12, 2015, to survey the minor alterations made to the project route in February of 2015.

No new prehistoric archaeological sites were observed during the surveys. One property, the Walapai Canal (Primary Site Number P-13-014813), was newly recorded as a historic site. The site records on file at the SCIC for the Yuma Main Canal, the Reservation Main/Cocopah Canal, and the Reservation Main Drain Canal were updated to reflect observations made where the canals cross the current APE. All of these properties are described below.

#### Walapai Canal (P-13-014813)

The Walapai Canal (assigned primary site number P-13-014813) was constructed between 1908 and 1910. The Walapai branched from the Yuma Main Canal at the Siphon Drop Power Plant, near the point where the Yuma Main splits from the All-American Canal. From there, it flows 1.93 miles to its southern terminus. Today, the Walapai Canal appears on maps as the Walapai Lateral.

The APE crosses the Walapai Canal along Arnold Road. At the crossing point, the canal is of earthen construction, but there is a concrete distribution box at this location. The canal south of this point was not explored or recorded, but this distribution box appears to form the southern terminal end of the canal, except for an extension to its south measuring a few hundred feet in length paralleling First Avenue. The box measures approximately 30 feet long by 6 feet wide. It is not clear when the box was constructed, but it uses modern metal gates for its distribution openings; slots remain from the wooden gates that it once used. The canal itself is trapezoidal in cross-section (and close to triangular) and measures approximately 18 feet at its top width with an estimated depth of about 5 feet.

#### The Yuma Main Canal (CA-IMP-6830)

The APE crosses the Yuma Main Canal (also known as the California Main Canal) at a point along Arnold Road to the west of the Arnold Road/Picacho Road intersection. Arnold Road is bridged at the canal crossing. Today, the Yuma Main Canal continues to convey a large volume of water from the All-American Canal to the south. The Yuma Main Canal is a large earthen canal. It was constructed as a diversion canal originating from the Laguna Dam. Construction of the canal began in 1909 and was completed by 1912. The Yuma Main originally diverted water from the Laguna Dam, but this diversion was discontinued in 1941 following the construction of an earthen dike across the canal. After this time, the canal began to divert water from the Siphon Drop Spillway along the All-American canal. The Yuma Main continued through the Reservation Division to the Colorado River Siphon, where it passed beneath the river into Yuma and the Arizona side, and to the Valley Division of the Reclamation Service's (later the Bureau of Reclamation) Yuma Project. In Yuma, the Yuma Main was split into the East and West Main Canals.

In Arizona, the Yuma Main Canal, the Colorado River Siphon, the East Main Canal, and the West Main Canal have all been recorded as archaeological. The canals (but not the siphon) have all been determined individually eligible for inclusion on the NRHP by the Arizona State Historic Preservation Officer (SHPO). However, it does not appear that the California reach of the Yuma Main Canal has been officially recorded as a historic site or been evaluated for its NRHP status.

At the crossing at Arnold Road, the canal measures roughly 125 feet in width. Because the canal currently conveys a large volume of water, it was not possible to determine the canal's other dimensions or its shape in cross-section. However, according to the existing Historic Resources Inventory Record for this property, the canal bottom averages 50 feet in width, and the sides slope 1.25:1 with a water depth of about 9 feet.

### Reservation Main/Cocopah Canal (CA-IMP-6832)

Construction on the Reservation Main/Cocopah Canal began in 1907; construction on an extensive system of laterals from the Reservation Main commenced the following year. The Reservation Main originally split from the Yuma Main Canal at Indian Heading. The Mojave and Cocopah Canals were split from the Reservation Main. The canal continues to convey a moderate volume of water. Today, the Reservation Main flows westward along Heyser Road and turns south at the interchange of Heyser Road, Stalnacker Road, and Avenue E, where it joins the Cocopah Canal.

The APE does not cross the Reservation Main Canal proper, but it does come within close proximity of it at the road interchange. However, the APE does cross the Cocopah Canal along Ross Road and it parallels the canal along Cocopah Road. The APE also crosses the Cocopah Canal at Picacho Road, Ross Road, and the intersections of Flood Road and Haughtelin and Arnold Roads. Because the Cocopah Canal (along with the Mojave Canal, which is not crossed by the APE) was historically a diversion of the Reservation Main, it is considered a component of the same system and was not recorded as a separate site. Much of the Cocopah Canal has been lined with concrete, but portions of it remain earthen, such as at its crossing at Picacho Road.

### Reservation Main Drain Canal (CA-IMP-6824)

The Reservation Main Drain Canal spans the Fort Yuma Indian Reservation and serves as a drainage for field runoff. It empties into the Colorado River about 0.5 miles downstream from the SPRR Bridge. It was constructed between 1912 and 1914 and was designed to drain excess water from the very flat lands in the river valley, which have a high water table. This waterway may also be indicated as a "Ditch" in Sections 23 and 26 on a BLM plat of Township 16 South, Range 22 East, SBB&M, dated September 7, 1951. However, only a segment of the ditch appears on the map. The APE crosses the Reservation Main Drain along Picacho Road, Arnold Road, Fisher Road, and Stalnacker Road. At each location, the canal is of earthen construction with a top width of approximately 25 feet. The canal is in active use and it was not possible to estimate its bottom width, but the Historic Resources Inventory Record indicates that its bottom width is 14 feet and its average water depth is 3 feet.

### Isolated Occurrences

In addition to the canals, ten isolated occurrences were recorded. Six lithic artifacts were observed and could only be tentatively identified as flaked stone. The fact that these isolated occurrences were in each case discovered on road shoulders or near the margins of cultivated fields (that is, highly disturbed areas) raises two issues. First, it is possible that in some cases an item may have been produced by machinery (such as road grading equipment or tractors) impacting naturally occurring rocks. Second, in all cases, it is highly unlikely that the artifacts are in their original locations or contexts. One artifact, a possible quartzite tool, is the item most likely to be an actual artifact. Three artifacts were identified as historic or possibly historic glass; at one location, the glass was accompanied by a white earthenware plate fragment. One isolated occurrence consists of a roadside memorial shrine (IO 10) located at the southwest corner of the intersection of Picacho Road and Arnold Road. It does not appear to be historic, but it was recorded with the intent of documenting its location for avoidance.

#### Cemetery

Although not considered an archaeological site, the Fort Yuma Indian Reservation Cemetery was also noted as an important cultural landmark in close proximity to the APE. The APE passes near the Fort Yuma Indian Reservation Cemetery located at the intersection of Quechan Drive, Picacho Road, and Sapphire Lane. The APE does not encroach upon the cemetery; however, the cemetery was noted to allow for the recommendation of monitoring in the vicinity during the construction work.

## *Regulatory Setting*

### *Federal*

#### National Historic Preservation Act

Projects with a federal nexus, such as passing through federally administered lands, must comply with 54 USC Section 306108, commonly cited as Section 106 of the National Historic Preservation Act, and referred to as such in this document. To comply with Section 106 of the NHPA, the project proponent must "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." Resources found eligible for inclusion in the NRHP are referred to as "historic properties." The implementing regulations for Section 106 are found under 36 CFR Section 800, as amended (2001).

The implementing regulations of the NHPA require that cultural resources be evaluated for NRHP eligibility if they cannot be avoided by an undertaking (project). To determine site significance through application of NRHP criteria, several levels of potential significance that reflect different (although not necessarily mutually exclusive) values must be considered. As provided in 36 CFR Section 60.4, the quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of national, state, and local importance that must be considered within its historic context and possess integrity of location, design, setting, materials, workmanship, feeling, and association. Resources must also be at least 50 years old, except in rare cases, and meet one of the following criteria to be considered eligible for the NRHP:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That has yielded, or may be likely to yield, information important in prehistory or history.

For archaeological sites evaluated under Criterion D, integrity requires that the site remain sufficiently intact to convey the expected information to address specific important research questions.

Locations of cultural value that are historic properties are known as Traditional Cultural Properties (TCPs). A place of cultural value is eligible as a TCP "because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1990, rev. 1998). A TCP must be a tangible property, meaning that it must be a place with a referenced location, and it must have been continually a part of the community's cultural practices and beliefs for the past 50 years or more.

Under Section 106, a project's impacts on historic properties that affect the characteristics that qualify a property for NRHP inclusion are considered an adverse effect on the environment. Examples of adverse effects on historic properties are listed under 36 CFR Section 800.5(a)(2) and include, but are not limited to, physical destruction or damage to all or part of a property, change of the character or the use of the property or physical feature within the setting of the property that contributes to its significance, or introduction of visual, atmospheric, or audible elements that diminish the integrity of significant features of the property. If an adverse effect is identified (36 CFR Section 800.5[d][2]), the agency shall act pursuant to 36 CFR Section 800.6 to resolve the adverse effect by developing and evaluating alternatives or modifications to the undertaking that "could avoid, minimize, or mitigate adverse effects on historic properties" (36 CFR Section 800.6[a]). Cultural resources that have been determined ineligible for the NRHP in consultation with the State Historic Preservation Officer and interested parties require no further consideration unless new discoveries trigger re-evaluations.

Section 106 of the NHPA does not apply to paleontological resources unless they are found in a culturally related context. In addition to the Antiquities Act (16 USC Section 431-433) of 1906, the preservation and salvage of fossils and other paleontological resources can be protected under the National Registry of Natural Landmarks (16 USC Section 461-467) and NEPA, which directs federal agencies to "preserve important historic, cultural, and natural aspects of our national heritage."

### Other Federal Laws

Numerous other federal laws and regulations pertain to the protection and preservation of cultural resources, including Native American religious freedoms and access to sacred sites. Those laws and regulations most pertinent to the proposed project are presented below.

#### *Archaeological and Historic Preservation Act*

The legislative and legal titles of the Archaeological and Historic Preservation Act are: Public Law 93-291 and 16 U.S.C.469-469c. Passed and signed into law in 1974, this act amended and expanded the Reservoir Salvage Act of 1960. The AHPA required that federal agencies provide for "...the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of... any alteration of the terrain caused as a result of any Federal construction project of federally licensed activity or program (Section 1)." However, the National Historic Preservation Act of 1966 (NHPA), eventually came to emphasize the use of planning, the importance of the NRHP for site protection, project review under Section 106 of the NHPA, and the preservation of sites in situ when possible and feasible. The AHPA was subsequently integrated into the NRHP statutory framework yielding the present effective overall archeology and historic preservation program (National Park Service 2015a).

#### *Native American Graves Protection and Repatriation Act*

For activities on federal lands, the Native American Graves Protection and Repatriation Act (NAGPRA, 43 CFR Section 10) requires consultation with "appropriate" Indian tribes (including Alaska Native villages) or Native Hawaiian organizations prior to the intentional excavation, or the removal after inadvertent discovery, of several types of cultural items, such as human remains and objects of cultural patrimony. For activities on Native American or Native Hawaiian lands, which are defined by statute, NAGPRA requires the consent of the Indian tribe or Native Hawaiian organization prior to the removal of cultural items. The law also provides for the repatriation of such items from federal agencies and federally assisted museums and other repositories.

The 1992 amendment to the NHPA strengthened NAGPRA by encouraging "protection of Native American cultural items…and of properties of religious or cultural importance to Indian tribes, Native Hawaiians, or other Native American groups" (Section 112[b][3]) and by stipulating that a federal "…agency's procedures

for compliance with Section 106 …provide for the disposition of Native American cultural items from Federal or Tribal land in a manner consistent with Sec. 3(c) of the Native American Graves Protection and Repatriation Act…"

The final rule of the NAGPRA regulations, effective May 14, 2010, added procedures for the disposition of culturally unidentifiable Native American human remains in the possession or control of museums of federal agencies. The rule also amended sections of NAGPRA related to purpose and applicability of regulations, definitions, inventories of human remains and related funerary objects, civil penalties, and limitations and remedies.

#### *Archaeological Resources Protection Act*

The Archaeological Resources Protection Act (ARPA) of 1979 (43 CFR Section 7) may impose additional requirements on an agency if federal or Native American lands are involved. Specifically, the Act: (1) prohibits unauthorized excavation on federal and Native American lands, (2) establishes standards for permissible excavation, (3) prescribes civil and criminal penalties, (4) requires agencies to identify archaeological sites, and (5) encourages cooperation between federal agencies and private individuals.

#### *Executive Order 11593 (1971): Protection and Enhancement of the Cultural Environment*

Executive Order 11593 was issued by President Nixon on May 13, 1971, directing federal agencies to inventory their cultural resources and establish policies and procedures to ensure the protection, restoration, and maintenance of federally owned sites, structures, and objects of historical, architectural, or archaeological significance.

#### *Paleontological Resources Protection Act*

The Paleontological Resources Protection Act, as provided in Title VI, Subtitle D, Paleontological Resources Preservation of the Omnibus Public Land Management Act of 2009 (Public Law 111- 011), requires the secretaries of the interior and agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise. The law, which applies only to federal lands, reaffirms the authority of federal land managing agencies to implement many of the policies for managing paleontological resources, such as issuing permits for collecting paleontological resources, curating paleontological resources, and maintaining confidentiality of locality data. The law provides authority for the protection of significant paleontological resources on federal lands, including criminal and civil penalties for fossil theft and vandalism.

### *State*

#### California Environmental Quality Act (CEQA)

California cultural resources laws and regulations are located in CEQA and the CEQA Guidelines, as well as the Public Resources Code (PRC). PRC Section 5097.2 requires responsible state agencies to determine whether a project area contains resources that include archaeological or paleontological sites, burial grounds or historical features. CEQA requires that state agencies determine whether the project has a significant effect on a unique archaeological resource or a historical resource, pursuant to Sections 21083.2 and 21084.1, respectively. Section 15064.5 of the CEQA Guidelines states that "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment." Lead agencies must identify potentially feasible measures to mitigate significant adverse changes in the significance of a historical resource. Historical resources are those that:

- Are listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (PRC Section 5024.1(d));

- Are included in a local register of historical resources (PRC Section 5020.1(k)) or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g); or

- Are determined by a lead agency to be historically significant.

Eligibility criteria for CRHR are set forth in PRC Section 5024.1(c). A resource is eligible for CRHR if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. is associated with lives of persons important in our past;

3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. has yielded, or may be likely to yield, information important in prehistory or history.

A resource must retain adequate integrity to be eligible for listing in the CRHR. Integrity is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity must be judged with reference to the particular criteria under which the resource is eligible for listing in the CRHR (14 California Code of Regulations Section 4852[c]). Integrity assessments are generally made with regard to the retention of the following:

- **Location**—Where the historic property was constructed or the place where the historic event occurred.

- **Design**—The combination of elements that create the historic form, plan, space, structure, and style of a property. This includes organization of space, proportion, scale, technology, ornamentation, and materials. This is applicable to larger properties for the historic way in which the buildings, sites, and structures are related.

- **Setting**—The physical environment of a historic property. It refers to the historic character of the property. It includes the historical relationship of the property to surrounding features and open space. These include topographic features, vegetation, simple manmade paths or fencing, and the relationship between buildings, structures, or open space.

- **Materials**—The physical elements that were combined during a particular period of time and in a particular pattern or configuration to form the historic property.

- **Workmanship**—The physical evidence of the crafts of a particular culture or people during a given period in history. It may be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configuration and ornamental detailing.

- **Feeling**—The property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character.

- **Association**—The direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character.

CEQA Guidelines Section 15064.5 also applies to unique archaeological resources, as defined in PRC Section 21083.2(g). A unique archaeological resource is an archaeological artifact, object, or site for which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one of the following criteria:

1. The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information; or

2. The archaeological artifact, object, or site had a special and particular quality, such as being oldest of its type or the best available example of its type; or

3. The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource is an archaeological artifact, object, or site that does not meet the above criteria. Impacts on non-unique archaeological resources and resources are not historical resources, and thus receive no further consideration under CEQA.

Assembly Bill 52, which was approved in September 2014 and which went into effect on July 1, 2015, requires that state lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if so requested by the tribe. The bill, chaptered in CEQA Section 21084.2, also specifies that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource (TCR) is a project that may have a significant effect on the environment.

Defined in Section 21074(a) of the PRC, TCRs are:

(1) Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:

   a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or

   b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under Section 21074 as follows:

(b) A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures than include avoidance and preservation of TCRs and treating TRCs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

Under CEQA Guidelines Section 15064.5, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of one of the following:

1. A historical resource;

2. A unique archaeological resource;

3. Human remains (i.e., where Native American human remains are identified or likely within the project).

PRC Section 21084.1 indicates that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historical resource; the section further defines "historical resource" and describes what constitutes a "significant" historical resource.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98.

No state or local agency has specific jurisdiction over paleontological resources on private lands. A paleontological collecting permit is not required by any state or local agency to allow for the recovery of fossil remains discovered as a result of construction-related activities on state or private land in the project area. However, on state-owned lands, PRC Chapter 1.7, "Archaeological, Paleontological, and Historical Sites," applies. This section of the code specifies that surveys, excavations, or other operations as necessary on state lands may be undertaken to preserve or record paleontological resources.

As noted above, CEQA Section 21083.2 and CEQA Guidelines Section 15064.5 provide specific guidance on historical and unique archaeological resources and, under CEQA, resources called "historical resources" can be of historic or prehistoric age. It is possible that a paleontological resource could be determined to be a historical resource. Although CEQA does not define what constitutes "a unique paleontological resource," the criteria defining a unique archaeological resource could be applied to define a unique paleontological resource.

### *Local*

#### Imperial County General Plan

The Conservation and Open Space Element of the Imperial County General Plan identifies areas of varying sensitivity for cultural resources and establishes policy for promoting the protection of important cultural resources (Imperial County 2008b).

## 2.5.2 Environmental Impacts

### *Proposed Project*

The proposed project involves the use of existing infrastructure in the subject area. The proposed project alignment is located within areas of existing public ROW that have been previously disturbed. The proposed installation involves minimal ground disturbance, as required for installing underground conduit and cables, and excavations associated with the installation of 10 new utility cabinets immediately adjacent to existing roadways. Therefore, there is a low probability for the proposed project to affect cultural resources in the subject area. Nevertheless, cultural resources could be discovered during any ground-disturbing activities conducted for the proposed project.

Paleontologic sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the rock unit in producing significant fossils, and fossil localities that are recorded from that unit. Paleontologic sensitivity is derived from the fossil data collected from the entire geologic unit, not just from a specific survey.

Impacts on cultural resources could potentially occur if the project were to result in any of the following:

- Substantial adverse changes in the significance of a historical resource either listed or eligible for listing on the NRHP, the CRHR, or a local register of historic resources.
- Substantial changes in the significance of a unique archaeological resource, destruction of a unique paleontological resource or site, or disturbance of human remains, including those interred outside of formal cemeteries.
- Directly or indirectly destroy a unique paleontological resource or site or unite geological feature.
- Disturb any human remains, including those interred outside a formal cemetery.

***a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project would cross the historic Pilot Knob-Tap Drop 4 161kV Transmission Line (CA-IMP-7158), the SPRR (today the Union Pacific Railroad) (CA-IMP-3424), the Yuma Main Canal (CA-IMP-6830), the Reservation Main/Cocopah Canal (CA-IMP-6832), the Reservation Main Drain (CA-IMP-6824), and the Walapai Canal (P-13-014813). All six of these sites have been recommended as eligible for inclusion in the NRHP under Criterion A for the purposes of the proposed project. If construction activities for the proposed project occurred within these historic resource areas, it could result in a potentially significant impact. The California SHPO's concurrence with the BIA's recommended "No Adverse Effect" determination, which considered implementation of the proposed **Mitigation Measure CR-1**, has been received regarding the proposed project's potential impacts on these resources (see Appendix E: Letter from California State Historic Preservation Officer). Implementation of **Mitigation Measure CR-1** would minimize potential impacts because all six sites would be avoided during construction thereby resulting in a less than significant and minor impact.

It is possible that undiscovered historical resources may be present in the project area and, if present, these resources could be impacted during the ground-disturbing activities associated with the proposed installations. In order to maintain these potential impacts to a less-than-significant level, **Mitigation Measure CR-2** would be implemented during construction. Therefore, impacts to historical resources would be less than significant and minor with mitigation.

**Mitigation Measure CR-1: Avoid Adverse Effects/Significant Adverse Changes to Resources Determined to be Historic Properties/Historical Resources Through Project Design**

Six linear resources, all assumed to be eligible for inclusion in the NRHP for this project, have been identified crossing the APE. These include the Pilot Knob-Tap Drop 4 161kV Transmission Line, the SPRR, Reservation Main Drain Canal, Yuma Main Canal, Reservation Main/Cocopah Canal, and Walapai Canal. The project will be designed to avoid each of the resources. Project construction will avoid the poles supporting the Pilot Knob-Tap Drop 4 161kV Transmission Line, and installation of the fiber optic line will be conducted by boring underneath the SPRR and all of the canals.

**Mitigation Measure CR-2: Immediately Halt Construction if Cultural Resources are Discovered, Evaluate All Identified Cultural Resources for Eligibility for Inclusion in the NRHP and/or CRHR, and Implement Appropriate Mitigation Measures for Eligible Resources**

Not all cultural resources are visible on the ground surface. As a result, prior to initiation of ground-disturbing activities, construction crews will receive training about the kinds of archaeological materials that could be present within the project area and the protocols to be followed should any such materials be uncovered during construction. Training will be conducted by an archaeologist who meets the U.S. Secretary of Interior's professional standards. Training may be required during different phases of construction to educate new construction staff personnel. Furthermore, all construction activities will be monitored by a qualified archaeologist and/or a member of the Fort Yuma Quechan tribe.

If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains are encountered during any project construction activities, work shall be suspended immediately at the location of the find and within a radius of at least 50 feet and the lead agency will be contacted.

All cultural resources accidentally uncovered during construction within the project site shall be evaluated for eligibility for inclusion in the NRHP or CRHR, depending on whether the discovery is on federal land or state/private land. Resource evaluations will be conducted by individuals who meet the U.S. Secretary of the Interior's professional standards in archaeology, history, or architectural history, as appropriate. If any of the resources meet the eligibility criteria identified in 36 CFR 60.4, or PRC Section 5024.1 or CEQA Section 21083.2(g), mitigation measures will be developed and implemented in accordance with 36 CFR 800.13 or CEQA Guidelines Section 15126.4(b) before construction resumes.

For resources eligible for listing in the CRHR that would be rendered ineligible by the effects of project construction, or a TCR, additional mitigation measures will be implemented. Mitigation measures for archaeological resources may include (but are not limited to) avoidance; incorporation of sites within parks, greenspace, or other open space; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Mitigation measures for archaeological resources shall be developed in consultation with responsible agencies and, as appropriate, interested parties such as Native American tribes. Native American consultation is required if an archaeological site is determined to be a TCR. Implementation of the approved mitigation would be required before resuming any construction resumes in the vicinity of the finds.

***b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

There are no archaeological sites present in the proposed project area, and the isolated occurrences described in the "Field Survey" section above are considered to be "non-unique" archaeological resources, as defined by CEQA Guidelines Section 15064.5(c)(4): "If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process." The documentation of isolated occurrences is considered sufficient treatment of the finds.

It is possible that undiscovered archaeological resources could be present in the project area. If present, these resources could be impacted during the ground-disturbing activities associated with the proposed installations. Depending on the nature of the materials and the extent of the disturbance and/or damage, impacts could be significant. Implementation of **Mitigation Measure CR-2** would maintain these potential construction-related impacts at a less-than-significant and minor level.

***c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (No Impact; None)***

The proposed project would have no impact on paleontological resources because the alluvial deposits present are too geologically young to contain such resources. Likewise, the proposed project would have no impact on unique geologic features because none are present in the project area.

***d. Would the project disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project APE passes in close proximity (about 328 feet) west of the Fort Yuma Indian Reservation Cemetery. Although it would be unlikely for human remains to be disturbed during construction, either near the cemetery or in other portions of the APE, the possibility exists that unmarked burials could be encountered. If human remains are encountered, **Mitigation Measure CR-3** and **Mitigation Measure CR-4** would be implemented during construction to ensure that potential impacts are kept to a less-than-significant and minor level.

**Mitigation Measure CR-3: Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code**

If human remains are accidentally discovered during the project's construction activities on non-federal lands, the requirements of California Health and Human Safety Code Section 7050.5 shall be followed. Potentially damaging excavation shall halt in the project site of the remains, with a minimum radius of 100 feet, and the county coroner shall be notified. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). Pursuant to the provisions of PRC Section 5097.98, the NAHC shall identify a Most Likely Descendent (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any

associated grave goods. The project proponent will work with the MLD to ensure that the remains are removed to a protected location and treated with dignity.

**Mitigation Measure CR-4: Immediately Halt Construction if Human Remains Are Discovered and Implement Protocols Pursuant to the NAGPRA**

If human remains are accidentally discovered during the project's construction activities on federal lands, the contractor will comply with 25 USC Section 3002.3(d) of the NAGPRA. Construction shall cease in the area of discovery to protect the human remains and the county coroner will be notified. The project proponent will then notify, in writing, the BIA and the Fort Yuma Quechan tribe. The project proponent will work with the BIA and the Fort Yuma Quechan tribe to ensure that the remains are removed to a protected location and treated with dignity.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no effect on cultural resources.

# 2.6 Geology and Soils

| Would the project | Potentially significant impact | Less than significant with mitigation incorporation | Less than significant impact | No impact |
|---|---|---|---|---|
| a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist–Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☐ | ☐ | ☐ | ☒ |
| ii) Strong seismic ground shaking? | ☐ | ☐ | ☒ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☒ | ☐ |
| iv) Landslides? | ☐ | ☐ | ☐ | ☒ |
| b. Result in substantial soil erosion or the loss of topsoil? | ☐ | ☒ | ☐ | ☐ |
| c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☐ | ☒ | ☐ | ☐ |
| d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | ☐ | ☐ | ☒ | ☐ |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | ☐ | ☐ | ☐ | ☒ |

## 2.6.1 Setting

### *Environmental Setting*

The project area is located within the Basin and Range physiographic province, which extends from eastern California to central Utah, and from southern Idaho into the state of Sonora in Mexico, and is characterized by a distinctive topographic pattern of steep climbs up elongate mountain ranges that alternate with long treks across flat basins. Within the Basin and Range Province, the Earth's crust (and upper mantle) has been subjected to extension that thinned and cracked the crust as it was pulled apart, creating large faults. Along these roughly north-south-trending faults, mountains were uplifted and valleys fell, producing the province's distinctive alternating pattern of linear mountain ranges and valleys.

### *Geology*

The Basin and Range is divided into five sections: Great Basin Section, Sonoran Desert Section, Salton Trough Section, Mexican Highland Section, and the Sacramento Section. The project area is located in the general vicinity of the interface between the Sonoran Section and the Salton Trough Section (Eaton 1982, National Park Service 2015b). The project area is located primarily on young river terrace and floodplain

deposits associated with the historical Colorado River floodplain; however, these surfaces have been almost completely altered by agricultural activity or urban development. (Youberg et al. 2011).

### *Soils*

Soils in the project area are of the Indio silt loam (13), Holtville clay (12), Gadsden clay (8), Lagunita silt loam (19), Kofa clay (17), Ripley silt loam (24), and Lagunita loamy sand (18) map units (NRCS 2015). These soils are well drained to somewhat excessively drained and formed from mixed alluvium. The surface layer consists mostly of clay and silt loam and occasionally loamy sand (NRCS 1980).

Most of the project corridors are located on clay soils with a relatively high shrink-swell potential. Soils with high shrink-swell potential, also known as expansive soils, are primarily comprised of clay particles. Clay increases in volume when water is absorbed and shrinks when dry. Expansive soils can damage building foundations, concrete slabs, and road pavement as a result of swelling forces that reduce soil strength. In general, much of the near surface soils in the agricultural areas of the Imperial Valley, including the project site, consist of clays that are moderately to highly expansive (NRCS 1980).

The wind erodibility of these soils ranges from moderate to high (NRCS 1980).

### *Alquist-Priolo Fault Zones*

The principal fault system in Imperial County is the San Andreas Fault, located east of the proposed project area in the vicinity of the Salton Sea. The Algodones Fault is the major fault in this system closest to the project area and is approximately 7.0 miles to the west, generally running from the northwest to the southeast roughly parallel to the Pilot Knob Mesa (Olmsted et. al. 1973, California Geologic Survey 2014). There are Alquist-Priolo Special Studies Zones in Imperial County, and the Imperial County General Plan Seismic and Public Safety Element includes a list of earthquakes that have occurred in Imperial County (Imperial County 2008d). However, the project area is not located in a mapped Alquist-Priolo Earthquake Fault Zone or within a Seismic Hazard Zone (California Geologic Survey 2015).

## ***Regulatory Setting***

### *Federal*

#### National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) and creation of the National Earthquake Hazards Reduction Program (NEHRP) established a long-term earthquake risk-reduction program to better understand, predict, and mitigate risks associated with seismic events. The following four federal agencies are responsible for coordinating activities under NEHRP: U.S. Geological Survey (USGS), National Science Foundation (NSF), Federal Emergency Management Agency (FEMA), and National Institute of Standards and Technology (NIST). Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (NEHRP 2009) are to:

1. Develop effective measures to reduce earthquake hazards;

2. Promote the adoption of earthquake hazard reduction activities by federal, state, and local governments; national building standards and model building code organizations; engineers; architects; building owners; and others who play a role in planning and constructing buildings, bridges, structures, and critical infrastructure or “lifelines”;

3. Improve the basic understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research involving engineering; natural sciences; and social, economic, and decision sciences; and

4. Develop and maintain the USGS seismic monitoring system (Advanced National Seismic System); the NSF-funded project aimed at improving materials, designs, and construction techniques (George E. Brown Jr. Network for Earthquake Engineering Simulation); and the global earthquake monitoring network (Global Seismic Network).

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

#### National Pollutant Discharge Elimination System Permits

See Section 2.9, "Hydrology and Water Quality."

### *State*

#### Alquist–Priolo Earthquake Fault Zoning Act

The Alquist–Priolo Earthquake Fault Zoning Act (Public Resources Code Section 2621 et seq.) was passed to reduce the risk to life and property from surface faulting in California. The Alquist–Priolo Act prohibits construction of most types of structures intended for human occupancy on the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist–Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." Before a project can be permitted, cities and counties are required to have a geologic investigation conducted to demonstrate that the proposed buildings would not be constructed across active faults.

#### Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist–Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist–Priolo Act. The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other seismic hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses not only seismically induced hazards but also expansive soils, settlement, and slope stability. Under the Seismic Hazards Mapping Act, cities and counties may withhold the development permits for a site within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

#### California Building Standards Code

Title 24 CCR, also known as the California Building Standards Code (CBC), specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the

California Building Standards Commission. CBC specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California.

*Local*

The Seismic and Public Safety Element of the Imperial County General Plan identifies goals and policies that minimize the risks associated with natural and manmade hazards, and it specifies land use planning procedures that should be implemented to avoid hazardous situations. The purpose of the Seismic and Public Safety Element is directly concerned with reducing the loss of life, injury, and property damage that might result from disaster or accident (Imperial County 2015a).

## 2.6.2 Environmental Impacts

### *Proposed Project*

***a. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:***

***i) Rupture of a known earthquake fault, as delineated on the most recent Alquist–Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42? (No Impact; None)***

The project area is not located within an Alquist-Priolo zone and there are no known faults that traverse the project area. Therefore no rupture of a known earthquake fault would be anticipated to affect the project. There would be no impact.

***ii) Strong seismic ground shaking? (Less than Significant; Minor)***

Although the project area is not located in an Alquist-Priolo earthquake fault zone or seismic hazard zone, numerous earthquakes have occurred in Imperial County and potential seismic activity must be considered. Because the majority of the proposed facilities to be installed would be buried, and above-ground features would be approximately four feet in height and not be human dwelling structures, the proposed project is unlikely to expose people or structures to risks resulting from strong seismic ground shaking. Therefore, impacts would be less than significant and minor.

***iii) Seismic-related ground failure, including liquefaction? (Less than Significant; Minor)***

Although the project area is not located in an Alquist-Priolo earthquake fault zone or seismic hazard zone, numerous earthquakes have occurred in Imperial County and potential seismic activity must be considered. Because the majority of the proposed facilities to be installed would be buried, and above-ground features would be approximately four feet in height, the proposed project is unlikely to expose people or structures to risks resulting from seismic-related ground failure, including liquefaction. Impacts would be less than significant and minor.

***iv) Landslides? (No Impact; None)***

Due to the generally flat topography of the project area, the proposed project would not be anticipated to be susceptible to landslides. Construction activities would not be at risk of causing landslides. There would be no impact.

***b. Would the project result in substantial soil erosion or the loss of topsoil? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project would include ground-disturbing construction activities, including excavation of bore pits, which could loosen soil and increase the risk of erosion or sediment transport. The proposed project is anticipated to result in a disturbance of more than 1 acre of land. As detailed in Section 2.9, "Hydrology and Water Quality," projects that disturb greater than 1 acre would require compliance with the NPDES General Construction Permit and preparation of a stormwater pollution prevention plan (SWPPP). **Mitigation Measure HYD-2** would require preparation and implementation of a SWPPP, including best management practices (BMPs) that would minimize or eliminate the potential soil erosion that could result from construction. Therefore, soil erosion and the loss of topsoil resulting from the proposed project would be less than significant and minor with mitigation.

***c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction or collapse? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project would involve the installation of buried fiber-optic lines and ancillary equipment including digital loop carrier sites consisting of buried vaults and aboveground equipment cabinets. With preparation and implementation of a SWPPP (and implementation of **Mitigation Measure HYD-1**), runoff would be managed. All soils disturbed during construction would be stabilized following construction by compacting to accepted local and/or state engineering standards. Because of this, and the lack of topographical relief in the project area that would be conducive to landslides, there would be no negligible (in any) impacts from on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse resulting from the proposed project.

***d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (Less than Significant; Minor)***

The proposed fiber-optic line installations would be located in an area having expansive soils with a high shrink-swell potential. Because the majority of the project's components would be buried, disturbed soils would be compacted following construction, and none of the aboveground installations would include large structures, impacts resulting in risks to life or property due to the expansive soils present in the project area would be less than significant and minor.

***e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water (No Impact)? (No Impact; None)***

The proposed project does not include the installation of septic tanks or other waste disposal systems; therefore, there would be no impacts related to disposal of wastewater.

### *No Project Alternative*

The No Project Alternative would not result in the granting of ROW or encroachment permits or any construction or operational activities. There would be no impacts relating to geology and soils.

# 2.7 Greenhouse Gas Emissions

| Would the project: | Potentially Significant Impact | Less than Significant with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Generate greenhouse gas emissions either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ |
| b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases? | ☐ | ☐ | ☐ | ☒ |

## 2.7.1 Setting

### *Environmental Setting*

Climate change results from the accumulation in the atmosphere of greenhouse gases (GHGs), which are produced primarily by the burning of fossil fuels for energy. Because GHGs (carbon dioxide [$CO_2$], methane, and nitrous oxide) persist and mix in the atmosphere, emissions anywhere in the world affect the climate everywhere in the world. GHG emissions are typically reported in terms of carbon dioxide equivalents ($CO_2e$) which converts all GHGs to an equivalent basis taking into account their global warming potential compared to $CO_2$.

Anthropogenic (human-caused) emissions of GHGs are widely accepted in the scientific community as contributing to global warming. Temperature increases associated with climate change are expected to adversely affect plant and animal species, cause ocean acidification and sea level rise, affect water supplies, affect agriculture, and harm public health.

Global climate change is already affecting ecosystems and societies throughout the world. Climate change adaptation refers to the efforts undertaken by societies and ecosystems to adjust to and prepare for current and future climate change, thereby reducing vulnerability to those changes. Human adaptation has occurred naturally over history; people move to more suitable living locations, adjust food sources, and more recently, change energy sources. Similarly, plant and animal species also adapt over time to changing conditions; they migrate or alter behaviors in accordance with changing climates, food sources, and predators.

Many national, as well as local and regional, governments are implementing adaptive practices to address changes in climate, as well as planning for expected future impacts from climate change. Some examples of adaptations that are already in practice or under consideration include conserving water and minimizing runoff with climate-appropriate landscaping, capturing excess rainfall to minimize flooding and maintain a constant water supply through dry spells and droughts, protecting valuable resources and infrastructure from flood damage and sea level rise, and using water-efficient appliances.

In 2013, total California GHG emissions were approximately 459 million metric tons (MT) of carbon dioxide equivalents (million MT $CO_2e$). This represents a 0.3-percent decrease in total annual GHG emissions from 2012. From 2000 to 2013, annual GHG emissions decreased by approximately 2.0 percent; the peak year for annual emissions was 2004 (CARB 2015b and 2015c).

In 2013, the transportation sector was the largest source of emissions, accounting for approximately 37 percent of total emissions. On-road vehicles accounted for more than 90 percent of emissions in the transportation sector. The industrial sector accounted for approximately 23 percent of total emissions. Emissions from electricity generation were about 20 percent of total emissions. (CARB 2015c).

## *Regulatory Setting*

### *Federal*

At the federal level, USEPA has developed regulations to reduce GHG emissions from motor vehicles and has developed permitting requirements for large stationary emitters of GHGs. On April 1, 2010, USEPA and the National Highway Traffic Safety Administration (NHTSA) established a program to reduce GHG emissions and improve fuel economy standards for new model year 2012-2016 cars and light trucks. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses.

On December 18, 2014, the CEQ released revised draft guidance on the consideration of GHG emissions and climate change in NEPA review (CEQ 2014). This is an update to guidance issued in draft form in February 2010. The guidance encourages agencies to include a quantitative assessment of GHG emissions for projects expected to have direct GHG emissions of 25,000 metric tons or more on an annual basis. The guidance states that the assessment of direct and indirect climate change effects should account for upstream and downstream emissions and includes guidance on biogenic sources of GHG emissions from land management actions.

### *State*

In recent years, California has enacted a number of policies and plans to address GHG emissions and climate change. In 2006, the California State Legislature enacted AB 32, the Global Warming Solutions Act, which set the overall goals for reducing California's GHG emissions to 1990 levels by 2020. Executive Orders (EOs) S-3-05 and B-16-2012 further extend this goal to 80 percent below 1990 levels by 2050. CARB has completed rulemaking to implement several GHG emission reduction regulations and continues to investigate the feasibility of implementing additional GHG emission reduction regulations. These include the low carbon fuel standard, which reduces GHG emissions associated with fuel usage, and the renewable portfolio standard, which requires electricity suppliers to increase the amount of electricity generated from renewable sources to 33 percent by 2020.

CARB approved the First Update to the AB 32 Scoping Plan on May 22, 2014 (CARB 2015). This update defines climate change priorities for the next 5 years and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The update also highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals and evaluates how to align the State's longer term GHG reduction strategies with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

In April 2015, Governor Brown issued Executive Order B-30-15 which established a GHG reduction target of 40 percent below 1990 levels by 2030. This is a target between previously established targets of achieving 1990 levels by 2020 and 80 percent below 1990 levels by 2050. The executive order also directs the state to incorporate climate change impacts in the Five-Year Infrastructure Plan, updating the state's climate adaptation strategy, and implement measures under existing agency and departmental authority to reduce GHG emissions.

*Local*

The Imperial County Transportation Commission (ICTC) and the Southern California Association of Governments (SCAG) collaborated to develop the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for Imperial County, in accordance with SB 375. The RTP/SCS was adopted in 2012 and shows how the region will meet the state-established greenhouse gas target and provide additional co-benefits, such as reducing land consumption, infrastructure costs, housing costs, and health incidences, as well as improving mobility and creating jobs. The RTP/SCS includes a land-use strategy and growth forecast that focuses growth in High-Quality Transit Areas and along the main streets, downtowns and other infill locations. It shifts development from single-family residences towards multi-family residential development to create neighborhoods that can be served by active transportation and public transit, and to reflect recent market trends. ICTC and SCAG are continuing to collaborate in the implementation of the RTP/SCS under a joint-work program.

## 2.7.2 Environmental Impacts

### *Proposed Project*

***a. Generate greenhouse gas emissions either directly or indirectly, that may have a significant impact on the environment? (Less than Significant; Minor)***

The proposed project's GHG emissions in $CO_2e$ were estimated using CalEEMod in pounds (lbs)/day and metric tons (MT) for each construction phase (Table 2.7-1). The proposed project's operation is not likely to result in a substantial use of energy and the amount of energy required need not be quantified. Potential energy-related emissions from the project's operation (infrequent maintenance or repair-related vehicle trips) would not be substantial; therefore, the only emissions of GHG that require consideration are those from construction.

The proposed project would emit 77.4 MT $CO_2e$ during construction activities, which is equivalent to emissions released by 16.3 average passenger vehicles in a year (USEPA 2015c). Given the 23.8 million registered passenger vehicles in California in 2014 (CDMV 2015), the proposed project's emissions would be in comparison less than significant. In addition, the proposed project's emissions would be substantially below the CEQ's suggested GHG level for quantifying project emissions (25,000 MT) and would be anticipated to result in minor impacts. Therefore, this impact would be less than significant and minor.

**Table 2.7-1. Estimated Greenhouse Gas Emissions**

| Construction Phase | CO2 Equivalent (lbs/day), On+Off-Site | CO2 Equivalent (metric tons) |
|---|---|---|
| Plowed Conduit Installation | 1,367+248, 1,615 | 5.1 |
| Bored Conduit Installation | 4,649+245, 4,894 | 71.1 |
| Node Installation | 326+179 505 | 1.2 |
| **Project Total** | | **77.4** |

***b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases? (No Impact; None)***

The proposed project would not conflict with the RTP/SCS, because the proposed project would provide broadband service to underserved populations, and would not result in the development of any buildings or transportation infrastructure. As described in Section 2.13, "Population and Housing," the proposed project would not affect population growth. In addition, the proposed project would not conflict with any of the policies/goals in the AB 32 Scoping Plan or its update. There would be no impact.

### *No Project Alternative*

The No Project Alternative would not result in the granting of ROW or encroachment permits or any construction or operational activities. There would be no impacts related to greenhouse gas emissions.

# 2.8 Hazards and Hazardous Materials

| Would the project: | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☒ | ☐ | ☐ |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☒ | ☐ | ☐ |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☒ | ☐ | ☐ |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☒ | ☐ |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☒ |
| f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☒ |
| g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☒ | ☐ | ☐ |
| h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | ☐ | ☐ | ☐ | ☒ |

## 2.8.1 Setting

### *Environmental Setting*

*Hazardous Sites*

A regulatory database search was conducted for the project alignment (Allands Data and Research Inc. 2015). Results of the database search indicate that there are three underground storage tanks (USTs) within a 0.25 mile of the project alignment, as described below.

**USA Supersave/Salvador Huerta, 2115 Winterhaven Drive, Winterhaven, CA**

The USA Supersave site is located on Winterhaven Drive between First Street and Railroad Avenue, approximately 300 feet southeast of the project alignment. Contamination was discovered during tank

removal activities conducted at this property in March 1998. Gasoline is the potential contaminant of concern, and the affected media are soil and groundwater. The direction of flow is south and southwest. The State Water Resources Control Board's Geotracker database indicates that the last site assessment was conducted in October 2013. Since August 2014 the case has been identified as "Open – Inactive." The database entry indicates that groundwater monitoring is continuing at the site. (SWRCB 2015a).

#### Ross Corner Store, 1460 W. Ross Road, Bard, CA

Ross Corner Store is adjacent to the project alignment along Ross Road at Avenue H. In December 1989 new tanks were installed, and in July 1999 petroleum hydrocarbon was detected in the groundwater. This resulted in drinking water wells being shut down. Groundwater monitoring started in January 2006. One groundwater monitoring well remains on site and continues to be monitored semiannually. Methyl tertiary butyl ether (MTBE – a gasoline additive) is the major constituent of concern. Remediation was conducted in 2012, and in October 2013 the case was identified as eligible for closure. The SWRCB's Geotracker database indicates that the case is closed (SWRCB 2015b).

#### Bard/Winterhaven Road Yard, 1477 Ross Road, Winterhaven, CA

The Bard/Winterhaven Road Yard is adjacent to the project alignment along Ross Road at Fischer Road. This case was opened in January 1994. Gasoline is identified as the potential contaminant of concern. Remediation was conducted in 1995 in 1997. The case was closed in February 2008 (SWRCB 2015c).

More information on these hazardous sites is provided in Appendix F. The database search did not identify any other known regulated or unregulated hazardous waste generators, leaking tanks, toxic spills, or other sites affecting the environment are located in the proposed project area. There is no listed Superfund or other National Priorities List (NPL) site in the vicinity of the project area (Allands Data and Research Inc. 2015).

### *Sensitive Receptors*

The nearest schools to the project area are Bill M. Manes High, San Pasqual Valley High School, San Pasqual Unified Middle School, San Pasqual Vocational Academy, and the San Pasqual Valley Elementary School, all located near the intersection of Arnold and Baseline Roads at 676 Baseline Road, Winterhaven, California 92283. These schools are located within a 0.25 mile of the project area.

### *Airports*

The nearest public airport is the Yuma International Airport, approximately 5 miles south of the project area. Somerton Airport is the nearest private airport to the project area (approximately 9 miles south) (Tollfreeairline 2015).

### *Wildland Fire Hazards and Responsibilities*

The proposed project alignment is located within areas that are subject to federal responsibility for local responsibility related to fire hazards, and therefore the California Department of Forestry and Fire Protection has not zoned these areas for fire hazard severity (California Department of Forestry and Fire Protection 2007). The potential for a major fire in the unincorporated areas of the county is generally low (Imperial County 2008d).

The fire station nearest to the project alignment is Station 8 of the Imperial County Fire Department. Located at 518 Railroad Ave in the township of Winterhaven, Station 8 began providing services on July 1, 2015, to the Fort Yuma Indian Reservation and the county areas surrounding this township. This station

responds to all emergency incidents throughout the Fort Yuma Indian Reservation (California) and unincorporated areas surrounding Winterhaven (Imperial County 2015).

## *Regulatory Setting*

### *Federal*

#### Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act; 42 USC Section 9601 et seq.) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, USEPA has the authority to seek the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the "Superfund") for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

#### Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (RCRA; 42 USC Section 6901 et seq.), as amended by the Hazardous and Solid Waste Amendments of 1984, is the primary federal law for the regulation of solid waste and hazardous waste in the United States. These laws provide for the "cradle-to-grave" regulation of hazardous wastes, including generation, transportation, treatment, storage, and disposal. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed of.

USEPA has primary responsibility for implementing RCRA, but individual states are encouraged to seek authorization to implement some or all RCRA provisions. California received authority to implement the RCRA program in August 1992. The California Department of Toxic Substances Control (DTSC) is responsible for implementing the RCRA program in addition to California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

#### Occupational Safety and Health Administration

OSHA is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

#### Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 United States Code 2601 et seq.) authorizes the USEPA to track industrial chemicals produced within or imported into the United States. Under this act, the USEPA screens and tests industrial chemicals that pose a potential health hazard to humans or the environment. This act grants the USEPA the authority to control and ban newly developed industrial chemicals and other chemicals that pose a risk in order to protect public and environmental health.

*State*

#### Safe Drinking Water and Toxic Enforcement Act of 1986 – Proposition 65

The Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65, protects the state's drinking water sources from contamination with chemicals known to cause cancer, birth defects, or other reproductive harm. Proposition 65 also requires businesses to inform the public of exposure to such chemicals in the products they purchase, in their homes or workplaces, or that are released into the environment. In accordance with Proposition 65, the California Governor's Office publishes, at least annually, a list of such chemicals. OEHHA, an agency under the California Environmental Protection Agency (CalEPA), is the lead agency for implementation of the Proposition 65 program. Proposition 65 is enforced through the California Attorney General's Office; however, district and city attorneys and any individual acting in the public interest may also file a lawsuit against a business alleged to be in violation of Proposition 65 regulations.

#### The Unified Program

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. CalEPA and other state agencies set the standards for their programs, while local governments (Certified Unified Program Agencies (CUPAs)) implement the standards. For each county, the CUPA regulates/oversees the following:

- Hazardous materials business plans;
- California accidental release prevention plans or federal risk management plans;
- The operation of USTs and ASTs;
- Universal waste and hazardous waste generators and handlers;
- On-site hazardous waste treatment;
- Inspections, permitting, and enforcement;
- Proposition 65 reporting; and
- Emergency response.

#### Hazardous Materials Business Plans

Hazardous materials business plans are required for businesses that handle hazardous materials in quantities greater than or equal to 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet (cf) of compressed gas, or extremely hazardous substances above the threshold planning quantity (40 CFR, Part 355, Appendix A) (Cal OES 2015). Business plans are required to include an inventory of the hazardous materials used/stored by the business, a site map, an emergency plan, and a training program for employees (Cal OES 2015). In addition, business plan information is provided electronically to a statewide information management system, verified by the applicable CUPA, and transmitted to agencies responsible for the protection of public health and safety (i.e., local fire department, hazardous material response team, and local environmental regulatory groups) (Cal OES 2015).

### California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations pertaining to the use of hazardous materials in the workplace (CCR Title 8) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, warnings about exposure to hazardous substances, and preparation of emergency action and fire prevention plans. Hazard communication program regulations that are enforced by Cal/OSHA require workplaces to maintain procedures for identifying and labeling hazardous substances, inform workers about the hazards associated with hazardous substances and their handling, and prepare health and safety plans to protect workers at hazardous waste sites. Employers must also make material safety data sheets available to employees and document employee information and training programs.

### California Department of Forestry and Fire Protection Wildland Fire Management

The Office of the State Fire Marshal and the California Department of Forestry and Fire Protection (Cal FIRE) administer state policies regarding wildland fire safety. Construction contractors must comply with the following requirements in the Public Resources Code during construction activities at any sites with forest-, brush-, or grass-covered land:

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Public Resources Code Section 4442).

- Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (Public Resources Code Section 4428).

- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire-suppression equipment (Public Resources Code Section 4427).

- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (Public Resources Code Section 4431).

### Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Material Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes business facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as raw or unused materials that are part of a process or manufacturing step. They are not considered to be hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

### Hazardous Waste Control Act

The Hazardous Waste Control Act created the State Hazardous Waste Management Program, which is similar to, but more stringent than, the federal RCRA program. The act defines “hazardous wastes” as waste products with properties that make them dangerous or potentially harmful to human health or the environment. Hazardous wastes can be the byproducts of manufacturing processes or simply discarded commercial products, such as cleaning fluids or pesticides. The act is implemented by regulations set forth

in CCR Title 26, which describes the following required parameters for the proper management of hazardous waste:

- Identification and classification.
- Generation and transport.
- Design and permitting of recycling, treatment, storage, and disposal facilities.
- Treatment standards.
- Operation of facilities and staff training.
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of them. Under this act and CCR Title 26, a generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

### *Local*

#### Certified Unified Program Agency

A CUPA is a city or county agency certified by DTSC to conduct the Unified Program established by Senate Bill 1082 (as explained under CEPA). The Imperial County CUPA Department of Toxic Substances Control is the CUPA with jurisdiction in the vicinity of the project area.

#### Imperial County General Plan

The Imperial County General Plan Seismic and Public Safety Element includes goals and objectives related to the control of hazardous materials (Imperial County 2008d). These goals and objectives are listed below.

**Goal 3:** Protect the public from exposure to hazardous materials and wastes.

**Objective 3.1**—Discourage the transporting of hazardous materials/waste near or through residential areas and critical facilities.

**Objective 3.2**—Minimize the possibility of hazardous materials/waste spills.

**Objective 3.3**—Discourage incompatible development adjacent to sites and facilities for the production, storage, disposal, and transport of hazardous materials/waste as identified in the County General Plan and other regulations.

**Objective 3.4**—Adopt and implement ordinances, policies, and guidelines that assure the safety of County ground and surface waters from toxic or hazardous materials and wastes.

#### Winterhaven Urban Area Plan

The Winterhaven Urban Area Plan identifies the goals, policies, and standards that will guide the physical growth of the Winterhaven Urban Area, which consists of the Townsite of Winterhaven and surrounding areas (Imperial County 1996b). The plan includes the following goal and associated objectives related to hazards and hazardous materials:

**Goal 2:** Minimize potential hazards to public health, safety, and welfare and prevent the loss of life and damage to health and property resulting from both natural and human-related phenomena.

**Objective 2.1**—Ensure the adequacy of existing emergency preparedness and evacuation plans to deal with identified hazards and potential emergencies.

**Objective 2.3**—Minimize injury, loss of life, and damage to property by implementing all state codes where applicable.

**Objective 2.4**—Prevent and reduce death, injuries, property damage, and economic and social dislocation resulting from natural hazards, including flooding, land subsidence, earthquakes, other geological phenomena, levee or dam failure, urban and wildland fires, and building collapse by appropriate planning and emergency measures.

## 2.8.2 Environmental Impacts

### *Proposed Project*

***a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

Construction activities for the proposed project would require handling of hazardous materials, such as fuels, lubricating fluids, and solvents for use with construction equipment on-site. Accidental spills or improper use, storage, transport, or disposal of these hazardous materials could result in a public hazard or the transport of hazardous materials (particularly during storm events) to the underlying soils and groundwater.

Although these hazardous materials could pose a hazard as described above, proposed project activities would be required to comply with extensive regulations so that substantial risks would not result. Examples of compliance with these regulations would include preparation of a hazardous materials business plan, which would include a training program for employees, an inventory of hazardous materials, and an emergency plan (Cal OES 2015). All storage, handling, and disposal of these materials would be done in accordance with regulations established by DTSC, USEPA, OSHA, Cal OES, CUPA, and Cal/OSHA. As described in Section 2.9, "Hydrology and Water Quality," the proposed project would prepare a SWPPP in compliance with the statewide Construction General Permit. To ensure the SWPPP includes appropriate spill prevention and other construction BMPs, the applicant would implement **Mitigation Measure HYD-2**. **Mitigation Measure HYD-2** would require the selection and implementation of BMPs that represent the best available technology that is economically achievable to protect the environment (water quality) from hazardous materials, and may include, but not be limited to, developing and implementing a spill prevention and emergency response plan, minimizing use or storage of hazardous materials, and other measures. In addition, implementation of **Mitigation Measures HAZ-1** through **HAZ-5** would ensure the proposed project would not result in significant risks to construction workers, the public, or the environment from the construction-related transport, use, storage, or disposal of hazardous materials. Furthermore, Mitigation **Measure HYD-1** would require the proper handling and storage of construction-related spoils to minimize the potential for spoils to be transported offsite or pose a hazard to the environment. Potential impacts from accidents involving the release of small quantities of hazardous materials would be minimal due to the implementation of the proposed **Mitigation Measures HYD-1**, **HYD-2**, and **Mitigation Measures HAZ-1 through HAZ-5**. Therefore, this impact would be less than significant and minor with mitigation.

**Mitigation Measure HAZ-1: Ensure Appropriate Hazardous Material Use, Handling, and Disposal**

The applicant shall ensure proper labeling, storage, handling, and use of hazardous materials in accordance with best management practices and OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements. Hazardous materials shall be stored as far from schools as possible throughout construction activities.

**Mitigation Measure HAZ-2: Ensure Proper Employee Training for Hazardous Materials**

The applicant shall ensure that employees are properly trained in the use and handling of hazardous materials and that each material is accompanied by a material safety data sheet (MSDS).

**Mitigation Measure HAZ-3: Implement Appropriate Hazardous Materials Storage**

Any small quantities of hazardous materials stored temporarily in staging areas shall be stored on pallets within fenced and secured areas and protected from exposure to weather. Incompatible materials will be stored separately, as appropriate.

**Mitigation Measure HAZ-4: Implement Appropriate Hazardous Materials Handling and Disposal Measures**

All hazardous waste materials removed during construction shall be handled and disposed of by a licensed waste disposal contractor and transported by a licensed hauler to an appropriately licensed and permitted disposal or recycling facility to the extent necessary to ensure the area can be safely traversed.

**Mitigation Measure HAZ-5: Report Releases of Hazardous Materials**

Releases or threatened releases of hazardous materials shall be reported to the appropriate agencies.

***b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

Three schools and numerous residences are located within a 0.25 mile of the project alignment. The nearest sensitive receptors to the site are the schools and residences along the project alignment and as close as approximately 15 feet from the project area.

Construction activities associated with the proposed project would include clearing, grubbing, and soil excavation, which could encounter existing sources of contamination. However, no known hazardous release sites are located on the project alignment, and the three sites identified in the Environmental Setting section above are considered either closed or inactive cases. Therefore, soil excavation activities would have a low potential to expose construction workers or nearby sensitive receptors to existing on-site hazardous materials, and would not create a substantial hazard through upset or accident conditions involving excavated materials. BIA's granting of ROWs is not expected to involve any hazardous materials issues and would not transfer any responsibilities or liabilities.

In addition, as discussed above, the proposed project's construction would require the use, transport, and disposal of hazardous materials; however, as detailed above, compliance with the applicable regulations and implementation of **Mitigation Measures HAZ-1 through HAZ-5**, as well as **Mitigation Measures**

**HYD-1** and **HYD-2**, would ensure that no substantial risks would result to construction workers, the public, or the environment from reasonably foreseeable upset or accident conditions involving the use of hazardous materials for the proposed project's construction activities.

Therefore, this impact would be less than significant and minor with mitigation.

***c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

There are three schools located within a 0.25 mile of the proposed project. Given the types of materials used during construction (fuel, oils) and the minimal quantities that may be used, it is unlikely that any school would be affected by an accidental release of hazardous materials. However, potential impacts from accidents involving the release of small quantities of hazardous materials would be minimal due to the implementation of **Mitigation Measures HYD-1, HYD-2**, and **HAZ-1 through HAZ-5**. Spill clean-up kits would be provided and kept on-site during construction, and equipment would remain in good working order to prevent spills. Therefore, this impact would be less than significant and minor with mitigation.

***d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Less than Significant; Minor)***

Three sites of potential environmental concern are located within a one-quarter-mile radius of the project alignment. Two of the sites are adjacent to the project alignment, remediation has occurred on both of these sites, and the respective cases have been closed, although groundwater monitoring continues on one of the closed sites. The third site is located approximately 300 feet from the project alignment and remains an open case, although it is inactive. Groundwater monitoring continues on the open, inactive site. The direction of flow is away from the project alignment. The project alignment is not located on a Superfund or other NPL site. While the possibility of encountering contamination from these sites cannot be ruled out, due to the closed status of two sites, as well as the inactive status and location of the third site, the proposed project is not expected to result in a substantial hazard to the public or the environment through exposure to such sites. The impact would be less than significant and minor.

***e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (No Impact; None)***

The nearest public airport to the project alignment is the Yuma International Airport, located approximately 6 miles southeast of the proposed project in Yuma, Arizona. The proposed project does not include installation of any new utility poles or increasing the height of the existing aerial distribution lines. Therefore, there would be no impact.

***f. For a project in the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (No Impact; None)***

The project is not in the vicinity of a private airstrip (approximately 9 miles away). There would be no impact.

***g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

Because project construction would occur within public road ROWs, the proposed project would potentially impair or interfere with an adopted emergency response plan and would require that traffic would be controlled and coordinated to minimize the potential for impacts. Typically, traffic control would be set up for the day's work operation. One lane of traffic may need to be closed during work activities. During such periods, flaggers would be used to direct traffic in the construction zone. Delays to motorists would typically average 1–2 minutes. Traffic control measures would be consistent with Caltrans Traffic Management Plan Guidelines (Caltrans 2009). With the implementation of the detour and circulation plans described in **Mitigation Measures TRA-3** and **HAZ-6**, impacts would be less than significant and minor with mitigation.

**Mitigation Measure HAZ-6: Require Emergency Response Plan Measures in Circulation and Detour Plans and Coordinate with Local Agencies**

The circulation and detour plans developed in compliance with Mitigation Measure TRA-3 shall include measures to avoid potential interference with an emergency response plan, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders. Development and implementation of these plans shall be coordinated with the County of Imperial, CPUC, and the BIA.

***h. Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (No Impact; None)***

The project alignment is located in an agricultural area. Adjacent land uses consist of cultivated fields, as well as the Township of Winterhaven. There are no wildlands adjacent to the project area; consequently, there would be no impact related to the risk of loss, injury, or death involving wildland fires as a result of the proposed project.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no impact with respect to hazards and hazardous materials.

# 2.9 Hydrology and Water Quality

| Would the project: | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Violate any water quality standards or waste discharge requirements? | ☐ | ☒ | ☐ | ☐ |
| b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | ☐ | ☐ | ☐ | ☒ |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | ☐ | ☒ | ☐ | ☐ |
| d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | ☐ | ☐ | ☒ | ☐ |
| e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☒ | ☐ | ☐ |
| f. Otherwise substantially degrade water quality? | ☐ | ☒ | ☐ | ☐ |
| g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | ☐ | ☐ | ☐ | ☒ |
| h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | ☐ | ☐ | ☐ | ☒ |
| i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | ☐ | ☐ | ☐ | ☒ |
| j. Inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☐ | ☒ |

## 2.9.1 Setting

### *Environmental Setting*

*Groundwater*

The project area is located within Groundwater Basin No. 7-36, the Yuma Valley Groundwater Basin (California Department of Water Resources [CDWR] 2004). This groundwater basin is part of the Lower Colorado Watershed (Hydrologic Unit Code [HUC] 150301017) (USEPA 2015), which is in turn part of the larger Colorado River hydrologic region. Historical data indicates that groundwater levels east and south of the All-American Canal, which includes the project area, have remained largely unchanged from 1962

through 2002 and range from approximately 5–20 feet below the surface (CDWR 2004). The Yuma Valley Groundwater Basin has designated beneficial uses of municipal and domestic water supplies, and agricultural water supplies (Colorado River RWQCB 2006).

#### *Stormwater*

Annual average precipitation ranges from about 1 to 3 inches. Surface drainage is southeast towards the lower Colorado River (CDWR 2004). There are no curb and gutter systems and no storm drains in the project area. Drainage from roadways flows to the roadside. In some areas, there are defined roadside ditches, and in other areas there are shallow swales along the road. The ditches and swales generally have sparse or no vegetation.

#### *Surface Water Hydrology and Quality*

Surface waters in the project vicinity include the All-American Canal, the lower Colorado River, Haughtelin Lake, and numerous canals. The largest surface waters (All-American Canal, the lower Colorado River, and Haughtelin Lake) are at least 750 feet from the nearest project area locations.

Within the project area, there are no perennial or ephemeral natural streams; however, 11 irrigation canals operated by either the Bureau of Reclamation's Imperial Irrigation District or the Bard Water District are crossed by the project alignment at 17 locations, shown in Table 2.4-1 in Section 2.4, "Biological Resources" (Tierra Right of Way Services 2015d). During a site visit on August 26, 2015, which occurred during a period of dry weather, various agricultural fields along the project alignment were observed to be flooded. This is consistent with the practice of flood irrigation, which is commonly used in the Imperial Valley for crops such as alfalfa (Bali et al. 2010).

The project alignment does not cross any water bodies included on the Section 303(d) list of impaired water bodies. The lower Colorado River (south of the Imperial Dam) is not on the Section 303 (d) list. Designated and potential beneficial uses for the lower Colorado River, Haughtelin Lake, and the Bard Valley Canals vary but generally include at a minimum: municipal and domestic water supply, agricultural supply, and warm freshwater habitat, and wildlife habitat. The Colorado River and its associated lakes and reservoirs support the most beneficial uses, including the additional uses for aquaculture, groundwater recharge, contact or non-contact water recreation, industrial service supply, hydropower generation, and/or preservation of rare, threatened, or endangered species (Colorado River RWQCB 2006).

#### *Floodplains*

Review of FEMA Flood Insurance Rate Map (FIRM) panels 06025C1900C, 06025C1925C, 06025C2250C, and 06025C2275C indicates that all of the project corridors are located in areas mapped as Zone X (FEMA 2015). Zone X areas are located outside the FEMA Special Flood Hazard Area because they are above the elevation of the 0.2 percent annual chance flood (also known as the 500-year flood) and have minimal flood hazard risk.

### ***Regulatory Setting***

#### *Federal*

##### **Clean Water Act**

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation for the proposed project are CWA Sections 303 and 402.

#### Section 303(d) — Listing of Impaired Water Bodies

Under CWA Section 303(d), states are required to identify "impaired water bodies" (those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for the development of control plans to improve water quality. The USEPA then approves the state's recommended list of impaired waters or adds and/or removes water bodies. In Imperial County, multiple surface waters, including portions of the Colorado River, are listed as having Section 303(d) water quality impairments. However, the lower Colorado River is not included on the Section 303(d) list (SWRCB 2012).

#### Section 402—NPDES Permits for Stormwater Discharge

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES), which is officially administered by the USEPA. In California, the USEPA has delegated its authority to the State Water Resources Control Board, which, in turn, delegates implementation responsibility to the nine Regional Water Quality Control Boards, as discussed below in reference to the Porter-Cologne Water Quality Control Act.

The NPDES program provides for both general (those that cover a number of similar or related activities) and individual (activity- or project-specific) permits.

Construction General Permit: Construction projects that disturb 1.0 or more acres of land are required to obtain coverage under SWRCB's General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ). The general permit requires that the applicant file a public Notice of Intent to discharge stormwater and prepare and implement a SWPPP. The SWPPP must include a site map and a description of the proposed construction activities, demonstrate compliance with relevant local ordinances and regulations, and identify BMPs that will be implemented to prevent soil erosion and protect against discharge of sediment and other construction-related pollutants to surface waters. Permittees are further required to monitor construction activities and report compliance to ensure that BMPs are correctly implemented and are effective in controlling the discharge of construction-related pollutants.

### *State*

Acting under the leadership of the State Water Resources Control Board, RWQCBs protect the beneficial uses of surface water and groundwater in California under the Porter-Cologne Water Quality Control Act, with a focus on water quality. The RWQCBs regulate all pollutant or nuisance discharges that may affect either surface waters or ground Waters of the State. In cases where the waters are excluded from regulation under the CWA, the RWQCBs may still exercise jurisdiction over discharges into Waters of the State, pursuant to the Porter-Cologne Act in cases where the waters are excluded from regulation under the federal CWA. In the absence of a legally approved formal protocol for delineating Waters of the State, all potential waters of the U.S. as well as all isolated waters are considered Waters of the State. Stormwater discharges in the project area are regulated by the Colorado River Basin RWQCB.

Water quality in California is governed by the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code Section 13000 et. seq.) This act delegates responsibility to the State Water Resource Control Board for water rights and water quality protection and directs the nine statewide RWQCBs to develop and enforce water quality standards within their jurisdiction. The Porter-Cologne Act requires any entity discharging waste or proposing to discharge waste within any region that could affect the quality of the "Waters of the State" to file a "report of waste discharge" with the appropriate RWQCB. The appropriate RWQCB then must issue a permit, referred to as a waste discharge requirement (WDR). WDRs implement water quality control plans and take into consideration the beneficial uses to be protected,

the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisances (California Water Code Section 13263).

### *Local*

The Conservation/Open Space and Water Elements of the Imperial County General Plan outline goals and objectives for the protection of water quality in the county (Imperial County 2008b). Preservation of water resources in the Conservation/Open Space Element of the General Plan has the goal of conserving, protecting, and enhancing the water resources in the planning area with the following objectives applicable to the proposed project:

> **Objective 8.1**—Protect all bodies of water (e.g., the Salton Sea) and watercourses for their continued use and development.
>
> **Objective 8.4**—Ensure the use and protection of the rivers and other waterways in the County. Ensure proper drainage and provide accommodation for storm runoff from urban and other developed areas in manners compatible with requirements to provide necessary agricultural drainage.
>
> **Objective 8.5**—Protect and improve water quality and quantity for all water bodies in the County.
>
> **Objective 8.6**—Eliminate potential surface and groundwater pollution through regulations as well as educational programs.

Protection of surface waters in the Water Element of the General Plan (Imperial County 2008e) has the goal of maintaining the long-term viability of the Salton Sea, Colorado River, and other surface waters in the county by protecting and sustaining wildlife and a broad range of ecological communities with the following objectives applicable to the proposed project:

> **Objective 2.1**—The continued viability of the agricultural sector as an important source of surface water for the maintenance of valuable wildlife and recreational resources in the County.
>
> **Objective 2.2**—A balanced ecology associated with the riparian and ruderal biological communities important as breeding and foraging habitats for native and migratory birds and animals occurring within the County.
>
> **Objective 2.3**—Preservation of riparian and ruderal habitats as important biological filters as breeding and foraging habitats for native and migratory birds and animals.

## 2.9.2 Environmental Impacts

### *Proposed Project*

***a. Would the project violate any water quality standards or waste discharge requirements? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project's construction would involve ground disturbance that has the potential for increasing sediment erosion or transport in the project area and degrading the water quality of receiving waters. Construction would also include the potential storage, use, transport, and/or disposal of hazardous materials (e.g., fuels, oils, solvents) used for construction equipment. Hazardous materials spills on the project area could affect surface water if they ultimately were transported to local surface waters.

Prior to the installations, TDS would file a Notice of Intent and submit permit registration documents to obtain coverage under the statewide stormwater Construction General Permit. As part of its compliance with this NPDES permit, TDS and/or its contractor would prepare a SWPPP. This impact would be potentially significant if a SWPPP did not include appropriate erosion control, spill prevention, or other construction BMPs. Thus, implementation of **Mitigation Measures HYD-1** and **HYD-2** would be required and would ensure that this impact would be less than significant by requiring the development and implementation of adequate erosion control, spill prevention, and other construction BMPs that would protect surface water quality. This impact would be less than significant and minor with mitigation.

**Mitigation Measure HYD-1: Manage and Control Sediments in Compliance with Applicable Regulations**

The applicant shall manage construction-induced sediment and excavated spoils in accordance with the requirements of the USEPA NPDES permit requirements for stormwater runoff associated with construction activities. To manage and control sediments, TDS and/or its contractor shall implement site-specific BMPs, which may include but are not limited to the following:

- Implement practices to reduce erosion of exposed soil and prevent the transport of sediment from the site or any given stockpile, including stabilization of soil stockpiles, contain excavated or disturbed soils within a controlled area, watering for dust control, establishment of perimeter silt fences, and/or placement of fiber rolls.
- Minimize soil disturbance areas.
- Cover and contain stockpiled soils in such a way that eliminates offsite runoff from occurring.
- Replace excavated soils following construction, grade disturbed areas, and re-vegetate so that post-construction topography and drainage matches pre-construction conditions and meets the site stabilization requirements of the Construction General Permit.
- Transport and dispose of surplus soils appropriately.

As a performance standard, the selected BMPs shall represent the best available technology that is economically achievable. All BMPs shall be regularly monitored for effectiveness using appropriate methods (visual observation, sampling) at appropriate intervals (e.g., daily or weekly) and corrected immediately if determined to not be effective.

**Mitigation Measure HYD-2: Develop and Implement Best Management Practices for Hazardous Materials**

Prior to the onset of construction, TDS or its authorized contractor shall implement site-specific BMPs during construction activities, which may include but are not limited to the following:

- Develop (before initiation of construction activities) and implement (during construction activities) a spill prevention and emergency response plan to handle potential spills of fuel or other pollutants.
- Prevent any construction-related materials, wastes, spills, or residues from being discharged from the project area.

- Install, implement, and maintain BMPs consistent with the California Storm Water Quality Association Best Management Practice Handbook (California Storm Water Quality Association [CASQA] 2015) or equivalent to minimize the discharge of pollutants to local water bodies, consistent with the requirements of the Construction General Permit.

- Implement practices to minimize the contact of construction materials, equipment, and maintenance supplies with stormwater.

- Limit fueling and other activities involving hazardous materials to designated areas only; provide drip pans under equipment and conduct daily checks of vehicle condition.

- Require the proper disposal of trash and any other construction-related waste.

- Locate staging of construction materials, equipment, and excavated spoils outside of drainages.

- TDS shall ensure that, through the enforcement of contractual obligations, all contractors transport, store, handle, and dispose of construction-related hazardous materials consistent with relevant regulations and guidelines, including those recommended and enforced by Caltrans; the Colorado River RWQCB; the applicable Imperial County department; and the applicable local fire department. Recommendations might include minimizing the amount of hazardous materials/waste stored on-site at any one time, transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using the applicable federal, state, and/or local regulatory agency protocols. In addition, all precautions required by RWQCB-issued NPDES Construction General Permit will be taken to ensure that no hazardous materials enter any storm drainages.

As a performance standard, the selected BMPs shall represent the best available technology that is economically achievable. All BMPs shall be regularly monitored for effectiveness using appropriate methods (visual observation, sampling) at appropriate intervals (e.g., daily or weekly) and corrected immediately if determined to not be effective.

***b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? (No Impact; None)***

During the proposed fiber-optic installations, water would be used for construction purposes, such as to control fugitive dust from disturbed areas, saw cutting, concrete mixing and washout, and drinking water for construction workers. The proposed project would not require substantial amounts of water during construction and would require no water during operation. Therefore, there would be no impact to groundwater supplies.

***c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project's construction activities for the installation of buried fiber-optic lines would potentially alter the existing drainage patterns in the project area; however, the proposed project would not affect the drainage patterns of any streams or rivers. Implementation of **Mitigation Measure HYD-1**, including its sediment, erosion control, and stormwater BMPs, during construction activities would prevent substantial erosion or siltation. In addition, **Mitigation Measure HYD-1** would require that following the installations, the ground surface contours would be restored to their pre-construction condition and the site would be stabilized as required by the Construction General Permit. Therefore, drainage patterns would remain as they currently are, and any erosion or siltation impact would be less than significant and minor with mitigation.

***d. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Less than Significant; Minor)***

As described in section "c" above, the proposed project would not alter the existing drainage pattern of the site or area. The project would consist primarily of laying cable beneath existing roads. The only new impervious surfaces would be ten new equipment cabinets that each measure approximately 2 by 3 by 4 feet. The cabinets would be located above buried vaults, each with an area of approximately 20 square feet. There would be minimal effect on the rate or amount of surface runoff, and minimal obstruction to any flood flows. The impact would be less than significant and minor.

***e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

As described in section "d" above, the proposed project would have minimal effect on the rate or amount of surface runoff. During construction the proposed project would potentially contribute polluted runoff sources though its soil disturbance and excavation activities, and use of heavy machinery. However, the potential to discharge sediment and other construction-related pollutants into receiving waters will be addressed by the development and implementation of a SWPPP, as required by the Construction General Permit, and through implementation of **Mitigation Measures HYD-1** and **HYD-2**. During project operations, there would be periodic inspections, involve periodic vehicle trips, and occasional maintenance or repair activities, involving occasional use of equipment or disturbance of soils. The impact would be less than significant and minor with mitigation.

***f. Would the project otherwise substantially degrade water quality? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

As described in section "a" above, the proposed project would involve the use of construction and the potential storage, handling, or use of hazardous materials (i.e., oil, fuel) associated with this equipment. In addition, the proposed project includes directional drilling, which could provide a direct pathway for hazardous materials to enter the groundwater. Accidental spills of these materials or improper material disposal could pose a risk to the groundwater underlying the spill or disposal area if the materials seep into the soil or groundwater. However, **Mitigation Measure HYD-2** would minimize the potential for

hazardous materials to affect or degrade groundwater quality. This impact would be less than significant and minor with mitigation.

***g. Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (No Impact; None)***

The proposed project does not include the placement of housing. In addition, it is not located within a 500-year or 100-year flood hazard area. There would be no impact.

***h. Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows? (No Impact; None)***

As described in section "g" above, the proposed project is not located within a 100-year flood hazard area. There would be no impact.

***i. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (No Impact; None)***

The proposed project does not include the placement of housing. All of the proposed fiber-optic line installations would be buried, and the only aboveground structures to be installed would be digital loop carrier cabinets, splice boxes, and line markers. None of these structures, either above or below ground, would redirect flood flows, and the project area is not located in a flood hazard area. Therefore, there would be no impact.

***j. Inundation by seiche, tsunami, or mudflow? (No Impact; None)***

The proposed project area is located inland (approximately 145 miles from the Pacific Ocean) and in an area with relatively flat topography. In addition, the project area is located at least 750 feet from the nearest large surface water, Haughtelin Lake. Therefore, the proposed project would not contribute to the risk of inundation by seiche, tsunami, or mudflow. There would be no impact.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no impact to hydrology or water quality.

# 2.10 Land Use and Planning

| Would the project | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Physically divide an established community? | ☐ | ☐ | ☐ | ☒ |
| b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☐ | ☒ |
| c. Conflict with any applicable habitat conservation plan or natural community conservation plan? | ☐ | ☐ | ☐ | ☒ |

## 2.10.1 Setting

### *Environmental Setting*

The project area is located within unincorporated Imperial County and includes the communities of Winterhaven, Bard, and Ross Corner as well as portions of the Fort Yuma Indian Reservation. The majority of the project area is used for agriculture, with small areas of residential and commercial properties located in the communities of Winterhaven, Bard, and Ross Corner. The community of Winterhaven also includes governmental offices. Existing development within the project area can be characterized as rural, sparse, and mostly limited to residences and buildings associated with agriculture. The communities of Winterhaven, Bard, and Ross Corner include more dense residential and commercial development.

Within the project area there is a school complex located near the intersection of Arnold and Baseline Roads that includes elementary, middle, high, and vocational schools. There are no public recreational facilities or designated open spaces in the project area; however, the school complex includes sports facilities.

### *Regulatory Setting*

#### *Federal*

No federal plans or policies related to land use or planning apply to the project.

#### *State*

##### California Public Utilities Commission

The CPUC has jurisdiction over the siting and design of the proposed project because the CPUC authorizes the construction and maintenance of investor-owned public utility facilities.

#### *Local/Tribal*

The CPUC has primary jurisdiction over the proposed project because it authorizes the construction, operation, and maintenance of public utility facilities. Although the CPUC has the authority to preempt local agency permitting of the proposed project, it has not issued any decision broadly preempting such permitting. Therefore, the proposed project would have to meet local permitting requirements. Building

permits are issued by the Imperial County Planning and Development Services Department. Encroachment permits are issued by the Imperial County Public Works Department.

The entire project area is located within unincorporated Imperial County, including portions of the project area that are also located within the Fort Yuma Indian Reservation and the Winterhaven Urban Area. The General Plan designates "Urban Areas" within unincorporated Imperial County that provide for a range of permitted land uses within the specified geographic areas (Imperial County 2008c). Both the Imperial County General Plan's Land Use Element and the Winterhaven Urban Area Plan provide planning policy guidance for the Winterhaven Urban Area.

### Imperial County General Plan and Zoning Regulations

The Imperial County General Plan provides policies, objectives, and specific land use designations, to guide the "distribution, general location, and extent of uses of land for housing, business, industry, open space, agriculture, and public facilities" within unincorporated Imperial County (Imperial County 2008c).

The following local land use goals, objectives, and policies apply to the proposed project alignment:

> **Goal 8:** Coordinate local land use planning activities among all local jurisdictions and state and federal agencies.
>
> > **Objective 8.8**—Ensure that the siting of future facilities for the transmission of electricity, gas, and telecommunications is compatible with the environment and County regulation.
> >
> > **Objective 8.9**—Require necessary public utility ROWs when appropriate.

The following local land use goals, objectives, and policies apply to the land surrounding the proposed project alignment:

> **Goal 1:** Preserve commercial agriculture as a prime economic force.
>
> **Goal 2:** Diversify employment and economic opportunities in the County while preserving agricultural activity.
>
> **Goal 3:** Achieve balanced economic and residential growth while preserving the unique natural, scenic, and agricultural resources of Imperial County.
>
> > **Objective 3.8**—Utilize nonagricultural land as a resource to diversify employment opportunities and facilitate regional economic growth. Uses must be consistent with each site's resource constraints, the natural environment, and the County Conservation and Open Space Element.

Division 5 of the Imperial County Land Use Ordinance establishes zoning for the county. The project alignment is located within an existing transportation corridor, adjacent to areas primarily carrying the zoning designations of Indian Reservation and Agriculture–General (A-2) with a small area zoned Light Commercial (C-1) located at the intersection of Perez Road and Ross Road. The portion of the alignment located within the Winterhaven Urban Area is located adjacent to Low-Density Residential, Medium-Density Residential, High-Density Residential, General Commercial, and Government/Special Public.

#### Winterhaven Urban Area Plan

The Winterhaven Urban Area Plan does not include any goals or objectives specifically related to telecommunications facilities.

#### Quechan Tribe Comprehensive Plan

The Quechan Tribe Comprehensive Plan does not include any goals or objectives specifically related to telecommunication facilities.

## 2.10.2 Environmental Impacts

### *Proposed Project*

***a. Would the project physically divide an established community? (No Impact; None)***

The proposed project would be constructed along an existing public transportation corridor. The subject area is currently used as a public roadway, and other utilities are currently installed in corridors. The use of this alignment for telecommunication network facilities is consistent with the current transportation use of the corridor, and with the existing adjacent land uses.

Because the proposed telecommunication facilities would be built entirely within the existing utility corridor, and the only aboveground facilities would be utility cabinets measuring 2.0 by 3.0 by 4.0 feet in size, the proposed project would not result in the physical division of an established community. There would be no impact.

***b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact; None)***

As discussed above, the CPUC has primary jurisdiction over the proposed project but does not preempt local agency permitting of the proposed project. Therefore, the proposed project would have to meet local permitting requirements. The proposed project would be co-located within existing utility ROW, and project construction, design, and operational characteristics would be in compliance with the Imperial County General Plan and the applicable zoning regulations. There would be no conflict with the Quechan Tribe Conservation Plan. Because TDS would be required to acquire all necessary permits and conditions of approval from local jurisdictions, such as a building permit and encroachment permit, and provide CPUC with documentation demonstrating compliance with the required permits, there would be no impact.

***c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan? (No Impact; None)***

The proposed project alignment is located in an area addressed by the Lower Colorado River Multiple Species Conservation Plan; however, there are no conservation lands within or adjacent to the project area, and the proposed project does not conflict with the plan. There would be no impact to any applicable habitat conservation plan or natural community conservation plan.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no impact with respect to land use and planning.

1

# 2.11 Mineral Resources

| Would the project | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☒ | ☐ |
| b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☒ | ☐ |

## 2.11.1 Setting

### *Environmental Setting*

A wide variety of minerals are found throughout Imperial County, including gold, gypsum, sand, gravel, lime, clay, stone, kyanite, salt, potash, calcium chloride, and manganese (Imperial County 2008). Figure 5 in the Open Space and Conservation Element of the Imperial County General Plan shows no major mining resource areas in the proposed project area, but possibly some small areas.

The proposed project area is not mapped by the California Department of Conservation (CDOC) for Surface Mining and Reclamation Act (SMARA) mineral resources (CDOC 2015f). However, given that the project area is located in the historical floodplain of the Colorado River, there are likely some sand and gravel resources in the vicinity.

### *Regulatory Setting*

#### *Federal*

No federal laws, regulations, or policies relate to mineral resources potentially affected by the proposed project.

#### *State*

##### Surface Mining and Reclamation Act of 1975

SMARA requires that the State Mining and Geology Board identify, map, and classify aggregate resources throughout California that contain regionally significant mineral resources. Designations of land/mineral resource areas are assigned by the CDOC and the California Geological Survey (CGS) following analysis of geologic reports and maps, field investigations, and using information about the locations of active sand and gravel mining operations. Local jurisdictions are required to enact planning procedures to guide mineral conservation and extraction at particular sites and to incorporate mineral resource management policies into their general plans.

#### *Local*

##### Imperial County General Plan

The Imperial County General Plan Conservation and Open Space Element contains the following goals and policies related to mineral resources:

**Goal 5:** The County will identify and protect mineral resources for extraction and minimize the effect of mining on surrounding land uses and other environmental resources.

**Objective 5.1—**Encourage the sound extraction of mineral and quarry/aggregate resources while protecting the natural desert environment.

**Objective 5.3—**Require that mineral extraction and reclamation operations be performed in a way that is compatible with surrounding land uses and minimize adverse effects on the environment.

**Objective 5.4—**Safeguard the use and full development of all mineral deposits.

**Objective 5.5—**Regulate the development adjacent to or near all mineral deposits and geothermal operations due to the potential for land subsidence.

## 2.11.2 Environmental Impacts

### *Proposed Project*

***a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (Less than Significant; Minor)***

As described in the Environmental Setting above, there are no known substantial mineral resources in the project area. It is possible there are sand and gravel deposits in the area, given that the proposed project is within the historical floodplain of the Colorado River. Under the proposed project, fiber-optic cable would be installed primarily along existing roads, and, therefore, would not be anticipated to affect future availability of any mineral resources in the area. Likewise, trenching for installation of fiber-optic cable would not be to a depth that would be anticipated to disrupt any existing mineral resources. This impact would be less than significant and minor.

***b. Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (Less than Significant; Minor)***

As described in the Environmental Setting above, the Imperial County General Plan mineral resources map (Figure 5) does not show any large mineral resource areas in the project area. The map is difficult to interpret, and there may be some small mineral resource areas, but no large mineral resource areas are visible. The proposed project would not be anticipated to affect availability of any locally-important mineral resource recovery sites. As described under "a" above, the laying of fiber-optic cable along existing roads and construction of DLC sites would not be anticipated to affect or preclude future development of mineral resources in the area. This impact would be less than significant and minor.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no impact on mineral resources.

# 2.12 Noise

| Would the project | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☒ | ☐ | ☐ |
| b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☒ | ☐ | ☐ |
| c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☐ | ☒ |
| d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☒ | ☐ |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |
| f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |

## 2.12.1 Setting

### *Noise Concepts and Terminology*

*Noise*

In the CEQA context, noise can be defined as unwanted sound. Sound is characterized by various parameters, including the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level, or sound intensity. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive, creating the A-weighted decibel (dBA) scale.

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terminology used in this section.

- **Decibel (dB)** is a measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

- **A-weighted decibel (dBA)** is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Maximum sound level ($L_{max}$)** is the maximum sound level measured during a given measurement period.

- **Minimum sound level ($L_{min}$)** is the minimum sound level measured during a given measurement period.

- **Equivalent sound level ($L_{eq}$)** is the equivalent steady-state sound level that, in a given period, would contain the same acoustical energy as a time-varying sound level during that same period.

- **Percentile-exceeded sound level ($L_{xx}$)** is the sound level exceeded during x percent of a given measurement period. For example, $L_{10}$ is the sound level exceeded 10 percent of the measurement period.

- **Day-night sound level ($L_{dn}$)** is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels during the period from 10:00 p.m. to 7:00 a.m. (typical sleeping hours). This weighting adjustment reflects the elevated sensitivity of individuals to ambient sound during nighttime hours.

- **Community noise equivalent level (CNEL)** is the energy average of the A-weighted sound levels during a 24-hour period, with 5 dB added to the A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. Table 2.12-1 presents approximate noise levels for common noise sources, measured adjacent to the source.

**Table 2.12-1. Common Sound Levels**

| Sound Level (dB) | Community/Outdoor | Industry/Home Indoor | Impression/Effect |
|---|---|---|---|
| 130 | | | |
| | Jet takeoff<br>(at 200 feet) | | Threshold of pain<br>(130-140 dB) |
| 120 | | | |
| 110 | Chainsaw<br>(at 2 feet) | Nightclub | |
| 100 | Pile driver<br>(at 50 feet) | | |
| 90 | Power mower, heavy truck<br>(at 50 feet) | Boiler room | Hearing damage<br>(8-hour exposure) |
| 80 | Concrete mixer | Garbage disposal | Loud/annoying |
| 70 | Freeway<br>(at 100 feet) | Noisy restaurant | Shouting required at 3 feet |
| 60 | Air conditioner unit | Department store | Loud speech required at 3 feet |
| 50 | Light vehicle traffic<br>(at 100 feet) | Quiet office | Normal speech at 3 feet, disturbs sleep |

| Sound Level (dB) | Community/Outdoor | Industry/Home Indoor | Impression/Effect |
|---|---|---|---|
| 40 | Bird calls | Library | Quiet |
| | Soft whisper (at 6 feet) | | |
| 30 | | Quiet bedroom | |
| 20 | North Rim of Grand Canyon | Recording studio | |
| 10 | | | Threshold of hearing |

*Source: Imperial County General Plan, Noise Element (2008f).*

### *Ground-borne Vibration*

Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Most environmental vibrations consist of a composite, or "spectrum," of many frequencies. The normal frequency range of most ground-borne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or of the vibration level measured with respect to root-mean-square vibration velocity in decibels (VdB), with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do those characterized by low frequencies, so that in a far-field zone distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

## ***Environmental Setting***

The majority of the proposed project is located in a rural agricultural area with scattered residences. Concentrated residential areas are present in Winterhaven and Bard, which are located roughly at the southwestern and eastern-northeastern ends of the project area, respectively. Sensitive receptors in the project area would include the San Pasqual Valley school complex located at Arnold and Baseline Roads, the scattered rural residences throughout the project area, and the residential areas in Winterhaven and Bard. The closest residences in relation to the project corridors are located in Winterhaven at a distance of approximately 15 feet. Rural residences in the remaining portions of the project area are no closer than 30 feet to the project corridors.

Existing noise sources in the project area include agricultural equipment, vehicular traffic, and trains on the UPRR. The UPRR railroad tracks run northwest to southeast in general proximity to Arnold Road and First Street in the southwestern portion of the proposed project area. Typical sound levels for the existing noise sources found in the project area, normalized to a reference distance of 50 feet, are shown in Table 2.12-2.

**Table 2.12-2. Existing Noise Sources in the Project Area**

| Noise Source | Sound Level at 50 Feet[a] |
|---|---|
| Agricultural equipment | 67-82 dBA (Bean 2008) |
| Light vehicular traffic | 56 dBA (Imperial County 2008f) |
| Train (horn at road crossings) | 116 dBA maximum (USDOT 2009) |
| Train (locomotive and cars) | 83-91 (USDOT 2009) |

[a] Sound levels were normalized using the equation: $dB_x = dB_{ref} + 20 \log (d_{ref} / d_x)$, where $dB_x$ is the decibel level at distance "x," $dB_{ref}$ is the decibel level at the reference distance, $d_{ref}$ is the reference distance, and $d_x$ is the distance that the desired decibel level, $dB_x$, is to be calculated for.

## *Regulatory Setting*

### *Federal*

No federal laws, regulations, or policies for construction-related noise and vibration apply to the proposed project. However, the Federal Transit Administration's (FTA's) Guidelines for Construction Vibration in Transit Noise and Vibration Impact Assessment contain noise and vibration thresholds for use in noise impact analyses. The FTA Guidelines' thresholds for daytime construction noise impacts in outdoor areas are 90 dBA $L_{eq}$ for residential areas and 100 dBA $L_{eq}$ for commercial/industrial areas (FTA 2006). The FTA Guideline's threshold for construction vibration with respect to potential building damage is 0.2 PPV (in/sec) for non-engineered timber and masonry buildings. The FTA Guideline's vibration threshold for human annoyance is 75 VdB (FTA 2006).

### *State*

No state laws, regulations, or policies related to noise are applicable to this project.

### *Local/Tribal*

#### Imperial County General Plan

The Imperial County General Plan Noise Element contains the following goals and objectives related to noise that are applicable to the proposed project.

**Goal 1:** Provide an acceptable noise environment for existing and future residents in Imperial County.

**Objective 1.3**—Control noise levels at the source where feasible.

**Goal 2:** Review proposed projects for noise impacts and require design which will provide acceptable indoor and outdoor noise environments.

**Objective 2.3—**Work with project proponents to utilize site planning, architectural design, construction, and noise barriers to reduce noise impacts as projects are proposed.

The Noise Element also includes construction noise standards, as follows:

- Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB $L_{eq}$ when averaged over an eight-hour period and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor, of days or weeks. In cases of extended-length construction times, the standard may be tightened so as not to exceed 75 dB $L_{eq}$ when averaged over a one-hour period.

- Construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday. No commercial construction operations are permitted on Sunday or holidays. In cases of a person constructing or modifying a residence for himself/herself, and if the work is not being performed as a business, construction equipment operations may be performed on Sundays and holidays between the hours of 9 a.m. and 5 p.m. Such noncommercial construction activities may be further restricted where disturbing, excessive, or offensive noise causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

#### Quechan Tribe Comprehensive Plan

The Quechan Tribe Comprehensive Plan does not contain any policies pertaining to noise.

## 2.12.2 Environmental Impacts

### *Proposed Project*

***a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measure)***

During the proposed project's construction, operation of construction equipment would generate noise. Section 1.5.1 lists the types of construction equipment anticipated to be used during construction. Table 2.12-3 shows the typical average maximum noise level of the pieces of equipment to be used during project construction at a distance of 50 feet. Noise levels from equipment shown in Table 2.12-3 increase or decrease with distance from the construction site at a rate of approximately 6 dBA per doubling of distance.

**Table 2.12-3. Construction Equipment Noise Levels**

| Equipment | Maximum Noise Level (dBA) at 50 feet |
|---|---|
| Bulldozer | 82 |
| Directional boring machine | 83 |
| Backhoe | 78 |
| Mud sucker | 81 |
| Skid steer loader | 79 |
| Medium-duty truck (5 ton) | 76 |
| Air compressor | 78 |
| Pickup | 75 |

*Source: 2011 FHWA Construction Noise Handbook, actual measured sound levels, samples averaged*

The nearest sensitive receptors along the project corridors include residences in Winterhaven that are as close as 15 feet. Rural residences in the remaining portions of the project area are no closer than 30 feet to the project corridors. The school complex at Arnold and Baseline is approximately 125 feet away from the project corridor at that location. Given that 15 feet is nearly a quarter (i.e., halved twice) of 50 feet, the maximum anticipated noise level at the nearest sensitive receptors would be roughly 12 dBA (2 times 6 dBA) higher than the maximum levels shown in Table 2.12-3, or approximately 96 dBA for the noisiest pieces of equipment. This level of noise, if it were to persist in one sensitive receptor location over a period of 8-hours, would be substantially higher than the county's 75 dB $L_{eq}$ (8-hour) noise standard. As described in the Environmental Setting above, a change of 10 dBA is perceived as doubling or halving the sound level, so 96 dBA would be perceived as roughly twice-double the county's standard.

However, construction equipment would not be used in one location for an extended amount of time. In general, construction equipment would be moving constantly, and laying of fiber-optic cable/construction of DLC sites would progress relatively rapidly along the proposed project alignments over the proposed project's estimated two-month construction period. The period of time a given residence or sensitive receptor may be subjected to maximum possible noise levels would be anticipated to be on the order of hours, not days. As such, noise levels at any one sensitive receptor would not be anticipated to exceed the county's 8-hour standard. **Mitigation Measure NOI-1** would be implemented to require that construction equipment operation be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday, consistent with the county's standard. Additionally, **Mitigation Measure NOI-2** would be implemented to provide advanced notice to landowners in proximity to planned construction activity.

Overall, while project construction could generate substantial noise at nearby residences in Winterhaven and rural residences along the project corridors, this noise would be temporary. This impact would be less than significant and minor with mitigation.

**Mitigation Measure NOI-1: Restrict Construction Work Periods**

All construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday. No construction operations shall occur on Sunday or holidays.

**Mitigation Measure NOI-2: Notify Local Landowners of Construction Activities**

All residences and landowners within 50 feet of proposed project alignments shall be provided written notice of construction activity within at least two days of commencement of said activity. The notice shall state the date of planned construction activity in proximity to that landowner's property and the range of hours during which maximum noise levels may be anticipated. The notices shall also contain a warning that ground-borne vibration from operation of construction equipment can potentially damage buildings and direct property owners to secure loose items, if warranted.

***b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

Most of the proposed project installation would be conducted using plowing construction techniques, which produce limited ground-borne vibration. For the areas where the proposed line would be installed using directional boring, greater amounts of vibration may be generated. Additionally, operation of construction equipment, such as bulldozers and trucks, would generate vibration.

Following the FTA's guidance and thresholds (see Regulatory Setting discussion above), vibration calculations for the proposed project found human annoyance could occur at a distance of 63 feet and building damage could occur at a distance of 15 feet. As described in the preceding impact discussion above, operation of construction equipment generally would be episodic and equipment would not be operated in one location for an extended period of time. As such, human annoyance from vibration would likely not be substantial considering that exposure to maximum vibration levels for any given sensitive receptor would not be anticipated to last longer than a few hours to a day. Additionally, in accordance with Mitigation Measure NOI-1, construction hours would conform to local regulations, and residences or other sensitive receptors would not be exposed to vibration during night/evening hours.

As described in 2.12.2a above, the nearest residences in Winterhaven are 15 feet from the proposed project alignments. As such, based on the FTA's threshold, building damage could be possible at these nearest residences, which would be a potentially significant impact. **Mitigation Measure NOI-2** would reduce potential for impacts to buildings, as the advanced notice to landowners of construction activity would allow opportunities to secure loose items or furniture, if warranted. Additionally, the project would implement **Mitigation Measure NOI-3**, which would require the contractor to operate earth-moving equipment within the construction area as far away from vibration-sensitive sites as possible, and to use construction equipment that causes lower vibration levels, where possible. With implementation of these mitigation measures, vibration-related impacts would be anticipated to be less than significant and minor.

**Mitigation Measure NOI-3: Minimize Vibrations from Construction Activities**

The construction contractor shall operate earth-moving equipment within the construction area as far away from vibration-sensitive sites as possible. Additionally, where possible, the contractor shall use construction equipment that causes lower vibration levels.

***c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (No Impact; None)***

The proposed project would not result in a permanent increase in ambient noise levels in the project vicinity. Construction-related noise from operation of construction equipment would be temporary, lasting no longer than the estimated construction duration of two months. Once installed, the proposed project components, including buried fiber-optic lines, equipment cabinets and vaults, and markers, would produce no noise. No impact would occur.

***d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (Less than Significant; Minor)***

As discussed in 2.12.2a above, operation of construction equipment during project construction would temporarily increase noise levels. While such increases could be substantial at nearby residences (see a. above), increases in overall ambient noise levels in the project vicinity would not likely be substantial. There are existing noise sources in the area, including vehicular traffic, the railroad, and agricultural equipment. Additionally, per Mitigation Measure NOI-1, construction equipment operation would be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday, consistent with the county's standard. Construction equipment would not be operated in one area continuously; rather, it would be moved constantly as fiber-optic cable is installed along the project corridors. As such, this impact would be less than significant and minor.

***e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact; None)***

The proposed project is not located within any airport land use plans. The nearest airport is the Yuma International Airport, which is approximately 5 miles to the south of the proposed project area. No impact would occur.

***f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (No Impact; None)***

No private airstrips were identified in the area of the proposed project. Somerton Airport is the nearest private airport to the project area (approximately 9 miles south). No impact would occur.

### *No Project Alternative*

The No Project Alternative would not result in the granting of ROW or encroachment permits or any construction or operational activities. There would be no impacts relating to noise.

# 2.13 Population and Housing

| Would the project: | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☒ | ☐ |
| b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |
| c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

## 2.13.1 Setting

### *Environmental Setting*

The majority of the project area is located in a rural agricultural area with scattered residences. Concentrated residential areas are present in Winterhaven and Bard. As described in Section 1.5.1, "Proposed Project," and as shown in Figure 1.5-1, the project area encompasses parts of the community of Winterhaven, the Fort Yuma Indian Reservation, and the community of Bard. The most recent data (2010) shows Winterhaven has a population of 394, which represents a decrease of 25 percent since 2000 (City-Data 2015a). Winterhaven's population density is considered low, at 1,641 people per square mile (City-Data 2015a). According to the Inter Tribal Council of Arizona, the Quechan population totals 2,475 members. Population information was not available specifically for the community of Bard. In general, the proposed project area is extremely economically depressed. The estimated median household income in Winterhaven was $11,331 in 2013, compared to $60,190 for the state as a whole (City-Data 2015b).

Information was not available on the number of housing units in the proposed project area specifically. Overall, Imperial County has 56,957 housing units with a vacancy rate of 12.6 percent (California Department of Finance 2015).

### *Regulatory Setting*

#### *Federal*

No federal laws, regulations, or policies related to population and housing are applicable to the proposed project.

#### *State*

No state laws, regulations, or policies related to population and housing are applicable to the proposed project.

*Local*

**Imperial County General Plan**

The Imperial County General Plan Housing Element contains the following goals and policies related to population and housing and the proposed project.

> **Goal 1:** Ensure the availability of a variety of housing types for all income levels throughout the county.
>
> > **Policy 1.1:** Provide for an adequate supply of housing in suitable locations and with adequate services that collectively accommodate a range of housing types, sizes, and prices meeting the needs of all economic segments of the county's population.
>
> **Goal 5:** Encourage the improvement, rehabilitation, and revitalization/reinvestment of the county's existing residential neighborhoods.

## 2.13.2 Environmental Impacts

### *Proposed Project*

***a. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (Less than Significant; Minor)***

The proposed project would not be anticipated to induce population growth. Construction activities would last only a few weeks and would not generate new permanent jobs in the region. Implementation of the project would primarily provide a service to existing rural residents, businesses, and schools. Provision of broadband internet service could potentially make the area more desirable to live; however, not to the extent that substantial population growth would be likely to occur. This impact would be less than significant and minor.

***b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (No Impact; None)***

All proposed project facilities would be installed along existing roads and/or right-of-ways, and, therefore, would not displace any existing housing. As such, no construction of replacement housing would be needed. No impact would occur.

***c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (No Impact; None)***

As described under "b" above, the proposed project would not displace any existing housing, and, consequently, would not displace any people. The new fiber-optic cable would be buried under private property within the Fort Yuma Indian Reservation (there is no public right-of-way within the reservation), but impacts to private property would be temporary and would not result in the displacement of any people. No impact would occur.

### *No Project Alternative*

The No Project Alternative would not result in the granting of ROW or encroachment permits or any construction or operational activities. There would be no impact to population and/or housing.

# 2.14 Public Services

| Would the project | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | ☐ | ☐ | ☒ | ☐ |
| (i) Fire protection? | | | | |
| (ii) Sheriff protection? | | | | |
| (iii) Schools? | | | | |
| (iv) Parks? | | | | |
| (v) Other public facilities? | | | | |

## 2.14.1 Setting

### *Environmental Setting*

#### *Fire Protection*

Fire protection in the project area is provided by the Winterhaven Fire Department and the Imperial County Fire Department. The Winterhaven Fire Department is located at 495 3rd Avenue. The Imperial County Fire Department opened a fire station (Station 8) in Winterhaven in 2015, located at 518 Railroad Avenue (Imperial County Fire Department 2015). The Imperial County Fire Department station houses one Type I Engine, one Water Tender, and on Rescue Squad.

The Imperial County General Plan states that the potential for a major fire in the unincorporated areas of the county is generally low.

#### *Police Protection*

Police protection in the proposed project area is provided by the Quechan Tribal Police Department and the Imperial County Sheriff. The Quechan Police Department is located at 350 Picacho Road. The Imperial County Sheriff's Department has a station in Winterhaven, located at 513 2nd Avenue.

#### *Schools*

The San Pasqual Valley Unified School District (SPVUSD) provides school service to the Fort Yuma Indian Reservation and community of Winterhaven. The SPVUSD complex is located at 676 Baseline Road, near the intersection with Arnold Road. This location includes a pre-school, elementary school, middle school, high school, and alternative school (SPVUSD 2015).

#### *Parks*

Parks in the proposed project vicinity include Sans End RV Park, Sunrise Point Park, Gateway Park, Yuma Territorial Prison State Historic Park, Riverside Park, and West Wetlands Park. Please see Section 2.15,

"Recreation," for a more detailed discussion of parks and recreational facilities in the proposed project vicinity.

### *Other Public Facilities*

Other public facilities in the project vicinity would include the Fort Yuma Indian Hospital, located at roughly the southern end of the proposed Picacho road project corridor, at 1 Indian Pass Road in Winterhaven.

## *Regulatory Setting*

### *Federal*

No federal laws, regulations, or policies related to public services are applicable to the proposed project.

### *State*

#### California Fire Code

The California Fire Code (Title 24 CCR, Part 9) establishes minimum requirements to safeguard public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. Chapter 33 of CCR contains requirements for fire safety during construction and demolition as follows:

> **3304.4 Spontaneous ignition.** Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.
>
> **3304.5 Fire watch.** When required by the fire code official for building demolition, or building construction during working hours that is hazardous in nature, qualified personnel shall be provided with at least one approved means for notification of the fire department and their sole duty shall be to perform constant patrols and watch for the occurrence of fire.
>
> **3308.1 Program superintendent.** The owner shall designate a person to be the fire prevention program superintendent who shall be responsible for the fire prevention program and ensure that it is carried out through completion of the project. The fire prevention program superintendent shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided, the superintendent shall be responsible for the guard service.
>
> **3308.2 Prefire plans.** The fire prevention program superintendent shall develop and maintain an approved prefire plan in cooperation with the fire chief. The fire chief and the fire code official shall be notified of changes affecting the utilization of information contained in such prefire plans.
>
> **3310.1 Required access.** Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of support vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.
>
> **3316.1 Conditions of use.** Internal combustion–powered construction equipment shall be used in accordance with all of the following conditions:

- Equipment shall be located so that exhausts do not discharge against combustible material.
- Exhausts shall be piped to the outside of the building.
- Equipment shall not be refueled while in operation.
- Fuel for equipment shall be stored in an approved area outside of the building.

*Local*

**Imperial County General Plan**

The Imperial County General Plan Seismic and Public Safety Element contains the following goals and objectives related to public services and the proposed project.

**Goal 2:** Minimize potential hazards to public health, safety, and welfare and prevent the loss of life and damage to health and property resulting from both natural and human-related phenomena.

**Objective 2.1**—Ensure the adequacy of existing emergency preparedness and evacuation plans to deal with identified hazards and potential emergencies.

## 2.14.2 Environmental Impacts and Mitigation Measures

### *Proposed Project*

***a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:***

***i) Fire protection? (Less than Significant; Minor)***

Operation of construction equipment during project construction could potentially introduce an ignition source and thereby increase fire risk in the area. Storage, transport, and use of flammable/hazardous materials (e.g., diesel fuel, oil) during construction could likewise present a fire hazard and potentially generate calls for service. However, unincorporated Imperial County is not identified as a high fire risk area. The predominant land use in the project area is irrigated agriculture and there is limited brush and ignitable vegetation. Additionally, TDS and/or the construction contractor would comply with the California Fire Code requirements for fire safety during construction (see Regulatory Setting above), which would reduce the potential increase in fire risk. There are two fire stations (i.e., Winterhaven Fire Protection District and Imperial County Fire Department Station 8) in proximity to the proposed project, suggesting adequate fire protection service exists for this relatively small project. The proposed project would not be anticipated to increase fire risk or otherwise require fire protection service during operation. This impact would be less than significant and minor.

***ii) Sheriff protection? (Less than Significant; Minor)***

Implementation of the proposed project would not be anticipated to substantially affect police or sheriff protection. As described in Section 1.5.1, "Proposed Project," all proposed project facilities would be installed along existing roads and/or right-of-ways, primarily in rural areas with low traffic volumes. Given that construction would take place directly adjacent or in close proximity to roadways, the project could

potentially require traffic control services or generate traffic-related calls for service from local police or the county sheriff. However, TDS and/or the construction contractor will implement a number of measures (see Mitigation Measures TRA-1 through 3) to reduce impacts on roadways and traffic, which would reduce the potential for police or sheriff calls for service. Even without implementation of traffic-related measures, any potential calls for service generated during project construction would not be anticipated to be of a level or volume to adversely affect police response times or require construction of new facilities. No effects on police or sheriff protection would be anticipated during project operation. This impact would be less than significant and minor.

#### *iii) Schools? (Less than Significant; Minor)*

As described in Section 2.13, "Population and Housing," the proposed project is not anticipated to substantially increase population. Some population growth could occur indirectly due to the provision of high-speed internet service making the area more attractive to prospective homebuyers, but not to a degree that would substantially affect school enrollment and service, or require construction of additional facilities. More than any potential adverse effects, the proposed project would benefit schools in the proposed project through the provision of high-speed internet. This impact would be less than significant and minor.

#### *iv) Parks? (Less than Significant; Minor)*

The proposed project is not anticipated to increase population. Therefore, it is not anticipated to increase demand for parks. It is possible that some temporary construction workers could use parks in their time off, but not to a degree such as to result in physical deterioration of park facilities or to require construction of new facilities. This impact would be less than significant and minor.

#### *v) Other public facilities? (Less than Significant; Minor)*

The proposed project would not be anticipated to substantially affect other public facilities. As described in the preceding impact discussions, the proposed project is not anticipated to substantially increase population or demand for public services. Potential impacts on access to the Fort Yuma Indian Hospital from project construction along Picacho Road and associated potential lane closures are discussed in Section 2.16, "Traffic and Transportation." This impact would be less than significant and minor.

### *No Project Alternative*

The No Project Alternative would not result in the granting of ROW or encroachment permits or any construction or operational activities. There would be no impacts to public services.

# 2.15 Recreation

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|---|
| a. | Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☒ | ☐ |
| b. | Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ☒ |

## 2.15.1 Setting

### *Environmental Setting*

Recreational facilities in the project vicinity include the Quechan Pool and Quechan Community Center, both located on Picacho Road at San Pasqual Road; Sans End RV Park, located along Winterhaven Drive; and Sunrise Point Park, located at Quechan Drive and Levee Road. Sunrise Point Park has a small lake for swimming and fishing, two ramadas, a plaza area, an amphitheater, and an area along the river known as the Elder Village (Visiting in Yuma 2014).

Across the Colorado River in Yuma, there are several parks and recreational facilities in relative proximity to the proposed project, including Gateway Park, Yuma Territorial Prison State Historic Park, Riverside Park, and West Wetlands Park.

### *Regulatory Setting*

No federal, state, or local laws, regulations, or policies related to recreation are applicable to the proposed project.

## 2.15.2 Environmental Impacts and Mitigation Measures

### *Proposed Project*

***a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (Less than Significant; Minor)***

As described in Section 2.13, "Population and Housing," the proposed project is not anticipated to substantially increase population. Therefore, it would not be anticipated to substantially increase use of or demand for parks or other recreational facilities. It is possible temporary construction workers could use recreational facilities during their time off, but not to a degree that would result in physical deterioration of the facility. This impact would be less than significant and minor.

***b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? (No Impact; None)***

The proposed project does not include recreational facilities, nor would it require construction or expansion of recreational facilities. No impact would occur.

### *No Project Alternative*

The No Project Alternative would not result in the granting of ROW or encroachment permits or any construction or operational activities. There would be no impact to recreation.

# 2.16 Transportation and Traffic

| Would the project | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | ☐ | ☒ | ☐ | ☐ |
| b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | ☐ | ☐ | ☒ | ☐ |
| c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | ☐ | ☐ | ☐ | ☒ |
| d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☒ | ☐ | ☐ |
| e. Result in inadequate emergency access? | ☐ | ☒ | ☐ | ☐ |
| f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | ☐ | ☒ | ☐ | ☐ |

## 2.16.1 Setting

### *Environmental Setting*

The primary transportation thoroughfare in the region is Interstate-8 (I-8). I-8 is the primary east-west route through Imperial County between San Diego, California, and Yuma, Arizona. Interstate Business 8 (also called Winterhaven Drive) provides business access to the Winterhaven community from I-8. Roads within the project area consist primarily of two-lane minor collector roadways and residential streets. A double-track UPRR runs parallel to and north of Winterhaven Drive in the southern portion of the project area.

#### *Existing Roadway Network*

The proposed project is located in a rural, unincorporated area of Imperial County. According to the county's 2013 Transportation Plan Update, there are currently no roadways in the project area identified as having Level of Service (LOS) D, E, or F (Imperial County 2013).

#### *Transit*

The Quechan tribe, in partnership with the Yuma County Intergovernmental Public Transportation Authority (YCIPTA), provides local fixed-route bus service in Winterhaven and on Fort Yuma Indian

Reservation lands (Yuma County Intergovernmental Public Transportation Authority 2015). In addition, there is a three-day-per-week route operating between eastern Imperial County (Winterhaven) and Downtown El Centro, California. Services are provided under contract to First Transit, Inc. (Imperial Valley Transit 2015).

The San Pasqual Unified School District provides bus services for the local community for the school day and after-school activities. Buses operate in the morning and afternoon.

## *Regulatory Setting*

### *Federal*

Federal laws, regulations, or policies related to transportation and traffic would be applicable for any portion/segment of the project that lies within or crosses a BIA road right-of-way or that interferes with the safe operation of a BIA system road.

### *State*

No state laws, regulations, or policies related to transportation and traffic are applicable to the proposed project.

### *Local*

#### Imperial County General Plan

The Imperial County General Plan Circulation & Scenic Highways Element contains the following goals and objectives related to transportation and traffic and the proposed project:

> **Goal 1:** The County will provide and require an integrated transportation system for the safe and efficient movement of people and goods within and through the County with minimum disruption to the environment.
>
> > **Objective 1.17—**Assure that road systems are adequate to accommodate emergency situations and evacuation plans.

#### Winterhaven Urban Area Plan

The Winterhaven Urban Area Plan contains the following goals and policies related to transportation and traffic and the proposed project:

> **Goal 1:** The County will provide an integrated transportation system for the safe and efficient movement of people and goods within and throughout the Winterhaven Urban Area with minimum disruption to the environment.
>
> > **Objective 1.1—**Maintain and improve the existing road and highway network, while providing for future expansion and improvement based on travel demand and the development of alternative travel modes.
> >
> > **Objective 1.2—**Ensure safe and coordinated traffic patterns, continuous growth, and promote a planned and consistent development around the township area.
> >
> > **Objective 1.3—**Finance or seek funding for circulation system maintenance projects.

## 2.16.2 Environmental Impacts

### *Proposed Project*

***a. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project would not be anticipated to substantially affect the performance of the circulation system. The project would generate some construction trips (e.g., construction workers traveling to and from the work site, deliveries of equipment and materials), and may require temporary lane closures, but the roads along which construction activities would occur are primarily low-volume, rural roads that are not at or near problematic LOS. Delays to motorists would typically average 1–2 minutes. **Mitigation Measures TRA-1** through **TRA-3** would all serve to reduce potential impacts to circulation and system performance. In general, construction traffic would be temporary and similar to ongoing activities occurring in the subject area, including local travel and ranch and farm activities. The proposed project would not generate any trips following construction or increase population such as to increase the number of vehicle trips in the area.

Construction activities could temporarily disrupt existing transit and school bus routes. The Quechan tribe YCIPTA Routes 5 and 10 both go some distance along Picacho Road and Quechan Drive between Quechan Road and San Pasqual Road, which is a proposed project alignment. Temporary lane closures, deliveries of construction equipment and materials, and general construction activity could potentially interfere with these existing transit services. However, as described in **Mitigation Measure TRA-3**, the construction contractor will coordinate with local transit agencies for the temporary relocation of routes or bus stops in work zones as necessary. With implementation of this measure, disruption of existing transit routes is not likely to be substantial.

Construction activities also could adversely impact bicyclists and pedestrians in the proposed project area. The majority of project construction would occur in areas where bicycle lanes or sidewalks are not present; however, construction would occur in some areas where pedestrian or bicycle infrastructure is present and/or where pedestrians or bicyclists are likely to be present. Lane closures, movement/delivery of construction equipment and materials, and general construction activity could disrupt or potentially create a hazard for pedestrian and bicycle traffic. However, as described under **Mitigation Measure TRA-3**, TDS will include detours for bicyclists and pedestrians in all areas potentially affected by project construction. Additionally, **Mitigation Measure TRA-3** would require that TDS install traffic control measures consistent with Caltrans standards. With implementation of this measure, impacts to bicyclists and pedestrians are not likely to be substantial.

Overall, this impact would be less than significant and minor with mitigation.

**Mitigation Measure TRA-1: Obtain and Comply with All Applicable Road Encroachment Permits**

TDS will require the project contractor to obtain all necessary local, state, and BIA road encroachment permits prior to construction and will comply with all the applicable conditions of approval.

**Mitigation Measure TRA-2: Prepare and Implement a Traffic Control Plan, if Required by the Local Permits**

As deemed necessary by the applicable jurisdiction, the road encroachment permits may require the contractor to prepare and implement a traffic control plan in accordance with professional engineering standards prior to construction.

**Mitigation Measure TRA-3: Develop and Implement Traffic Construction Best Management Practices**

TDS and/or its contractor shall develop and implement traffic construction-related best management practices including but not limited to:

- Develop circulation and detour plans to minimize impacts to local street circulation. This shall include the use of signing and flagging to guide vehicles through and/or around the construction zone.
- Schedule truck trips outside of peak morning and evening commute hours.
- Limit lane closures during peak hours to the extent possible.
- Include detours for bicycles and pedestrians in all areas potentially affected by project construction.
- Install traffic control devices as specified in the *California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones* or the Federal Highway Administration's (FAA's) *Manual on Uniform Traffic Control Devices.*
- Coordinate with local transit agencies for the temporary relocation of routes or bus stops in work zones as necessary.

***b. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? (Less than Significant; Minor)***

Implementation of the proposed project would not be anticipated to conflict with the Circulation and Scenic Highways Element of the Imperial County General Plan, which is the applicable congestion management program for the area. As described under "a" above, the proposed project would generate construction-related vehicle trips and may require temporary lane closures during construction, both of which could adversely affect traffic flow and LOS. However, construction traffic associated with the proposed project would not be anticipated to be of a magnitude to significantly affect local roadway performance levels, and there would be no long-term effect on roadway traffic. This impact would be less than significant and minor.

***c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (No Impact; None)***

The proposed project would not affect air traffic patterns. The proposed project would primarily involve installation of buried telecommunications facilities. It would not include installation of any new utility poles or facilities of significant vertical height. The nearest airport is the Yuma International Airport, which is located approximately 5 miles to the southeast. No impact would occur.

***d. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

During construction, use of construction equipment along and/or adjacent to the roadway could potentially increase hazards. As described in Section 1.5.1, "Proposed Project," the proposed buried fiber-optic telecommunications lines would be located almost entirely along existing roads and right-of-ways. While the construction equipment to be used for the proposed installations would be highly maneuverable and would primarily use existing improved areas (e.g., existing roads, field access aprons, driveway aprons, farm roads) for turning around or parking, for some construction activities, it may be necessary to close one traffic lane. Operation of construction equipment on or in close proximity to the roadway and/or temporary closure of a traffic lane could potentially increase hazards for other motorists.

As described in **Mitigation Measure TRA-3**, however, the applicant and/or its contractor would implement traffic control devices in accordance with Caltrans' Traffic Controls for Construction and Maintenance Work Zones and FAA's *Manual on Uniform Traffic Control Devices*, even when not on state or federal highways. As necessary or appropriate, flaggers would direct traffic in the construction zone. In general, any lane or shoulder closures would be short-term and would occur only during construction hours. With implementation of these measures, any potential transportation and traffic hazards associated with project construction would be anticipated to be less than significant and minor.

Following construction, during project operation, there would be no change to existing roadway conditions. The proposed fiber-optic lines would be buried underground and the proposed DLC sites/equipment cabinets would be located off the roadway such that they would not be anticipated to be a hazard to motorists. Overall, this impact would be less than significant and minor with mitigation.

***e. Would the project result in inadequate emergency access? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project would not be anticipated to affect or result in inadequate emergency access. As described in preceding impact discussions, construction of the proposed project may require temporary closures of one lane of traffic. Temporary lane closures could potentially cause vehicle delays and/or increase travel times, potentially including for emergency vehicles. The Fort Yuma Indian Hospital is located at 1 Indian Pass Road, just south of the proposed project alignment along Picacho Road/Quechan Road. Temporary lane closures for the proposed project could potentially adversely affect access of emergency vehicles to and from the hospital.

As described in **Mitigation Measure TRA-3**, however, TDS and/or its contractor would install traffic control devices in accordance with Caltrans' standards. Additionally, per **Mitigation Measures TRA-1** and **TRA-2**, TDS and/or its contractor would obtain road encroachment permits from applicable jurisdictions as necessary and comply with all permit terms, including potentially preparation of a traffic control plan. Implementation of these measures would reduce potential for effects on emergency access during project construction. Following construction, during project operation, the proposed project would have no effect on emergency access, as all project facilities would be buried underground and/or located off the roadway. With implementation of mitigation measures, and given the relatively low volume of traffic on proposed project alignment roads, this impact would be less than significant. Thus, this impact would be less than significant and minor with mitigation.

***f. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

The proposed project would not be anticipated to conflict with any adopted alternative transportation policies, plans, or programs. As described in preceding impact discussions, the proposed project may require temporary closure of traffic lanes during construction, and could therefore temporarily affect the performance of public transit, bicycle, or pedestrian facilities. Likewise, the proposed project would involve operation of construction equipment along and adjacent to roadways, and potentially on sidewalks, and could therefore potentially create hazards to bicyclists and pedestrians and/or decrease the safety of bicyclist and pedestrian facilities. Construction would occur along existing transit (YCIPTA Routes #5 and #10) and school bus routes, and in areas where bicyclists or pedestrians may be present.

However, as has been described in preceding impact discussions, in accordance with **Mitigation Measure TRA-3**, TDS and/or its contractor will coordinate with local transit agencies for the temporary relocation of routes or bus stops in work zones as necessary. Additionally, in accordance with **Mitigation Measure TRA-3**, TDS and/or its contractor will include detours for bicycles and pedestrians in all areas potentially affected by project construction. This would also include posting of warning signs and notices to properly warn bicyclists utilizing the roadway of potential hazards on or near the shoulder. **Mitigation Measure TRA-3** also would be implemented to install traffic control devices, in compliance with the California Manual on Uniform Traffic Control Devices (MUTCD), to provide bicycle traffic, like motorists, "reasonably safe passage through the [temporary traffic control] zone" (Caltrans 2012). With implementation of these measures, any potential impacts on public transit, bicycle, and/or pedestrian facilities would be anticipated to be less than significant and minor.

Following project construction, during project operation, the proposed project would have no effect on public transit, bicycle, or pedestrian facilities, as all proposed project facilities would be buried underground and/or located off of the roadway and sidewalk.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no impact with respect to transportation and traffic.

# 2.17 Utilities and Service Systems

| Would the project | Potentially Significant Impact | Less than Significant Impact with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☐ | ☒ |
| b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☒ | ☐ |
| c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☒ | ☐ |
| d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | ☐ | ☐ | ☒ | ☐ |
| e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☐ | ☒ |
| f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | ☐ | ☐ | ☒ | ☐ |
| g. Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☐ | ☒ |

## 2.17.1 Setting

### *Environmental Setting*

*Overview*

The proposed project corridors are located along county and BIA roads, many of which include existing utility easements with aerial electrical distribution lines and buried telecommunications and water lines. A number of irrigation canals and related facilities also exist in the proposed project area. The proposed fiber-optic cable alignment would cross several irrigation canals, including the Walapai Lateral, Yuma Main Canal and the Cocopah Canal, all of which connect to the All American Canal.

*Water*

Water suppliers within the project area include the Winterhaven Water District (WWD) and the Bard Water District (Imperial County 2008e). WWD supplies treated drinking water to approximately 1,000 people in Winterhaven. WWD has two groundwater wells which extract approximately 150,000 gallons per day and two 100,000-gallon storage tanks (Imperial County 2008e). The Bard Water District serves approximately 175 landowners and supplies approximately 90,000 acre-feet of water per year for approximately 15,000 acres of agricultural land (Imperial County 2008e). This water is taken from the Colorado River, via the All-American Canal. In the community of Bard, groundwater wells are also used to extract water for certain

domestic purposes, such as landscape irrigation. Drinking water is supplied to the community by private water companies.

### *Sewer*

The community of Winterhaven and the Fort Yuma Indian Reservation jointly operate a sewage system which serves Winterhaven and several developments within the reservation (Imperial County 2008e). Wastewater treated at the facility in Winterhaven is discharged and piped to Yuma, Arizona.

### *Solid Waste*

The nearest landfill to the proposed project is the South Yuma County Landfill in Yuma, Arizona. The nearest California landfills to the proposed project are the Mesquite Regional Landfill and the Imperial Landfill in Imperial County.

### *Telecommunications*

As discussed in Section 1.5.2, "No Project Alternative," wired Internet service in the proposed project area is limited to dial-up and is only available in TDS's four existing DSAs. Cellular data service (3G, 4G, and 4GLTE) from Verizon, AT&T, and Sprint is available in portions of the project area, as is HughesNet satellite Internet service. The SPVUSD currently receives Internet connectivity through a microwave link from a station located west of the project area at Pilot Knob. This link provides 54 Mbps Internet service to the school, but the District has expressed a desire for a faster fiber-optic broadband connection (SPVUSD 2008).

## ***Regulatory Setting***

### *Federal*

No federal laws, regulations, or policies relate to utilities and service systems and the proposed project.

### *State*

#### **California Integrated Waste Management Act of 1989**

The California Integrated Waste Management Act of 1989 (Public Resources Code, Division 30) requires all California cities and counties to implement programs to reduce, recycle, and compost wastes by at least 50 percent by 2000 (Public Resources Code Section 41780). The state, acting through the California Integrated Waste Management Board (CIWMB), determines compliance with this mandate. Per-capita disposal rates are used to determine whether a jurisdiction's efforts are meeting the intent of the act.

#### California Public Utilities Commission

CPUC regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies in California. CPUC is responsible for ensuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud and promoting the health of California's economy. CPUC establishes service standards and safety rules and authorizes utility rate changes.

### *Local*

No local laws, regulations, or policies relate to utilities and service systems and the proposed project.

## 2.17.2 Environmental Impacts

### *Proposed Project*

***a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (No Impact; None)***

The proposed project would not include any facilities or uses that would generate wastewater. No impact would occur.

***b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (Less than Significant; Minor)***

The proposed project would not require or result in the construction of any new water or wastewater treatment facilities or the expansion of existing facilities. The proposed project would require a small amount (500 to 1,000 gallons per week) of water during project construction for dust mitigation and related purposes, but this water would be supplied by existing facilities and entitlements. No water would be needed during project operation. This impact would be less than significant and minor.

***c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (Less than Significant; Minor)***

The proposed project would not substantially increase impervious surface area or require the construction of stormwater drainage facilities. The proposed fiber-optic cables would be buried underground and the existing ground surface would be restored following installation. New equipment cabinets (2 x 3 x 4 feet) would marginally increase impervious surface, but not to a degree that would substantially affect stormwater generation. This impact would be less than significant and minor.

***d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (Less than Significant; Minor)***

As described under 2.17.2b above, project construction activities would incorporate standard ICAPCD construction measures specified in Regulation VIII to reduce fugitive dust emissions, including the use of water for dust suppression. Water needed for dust suppression would be provided to the project contractor by local municipal water sources, such as those found in Winterhaven. The contractor would obtain the quantity of water needed for a day's operations prior to arriving on site. Because there would be little ground disturbance associated with the project, only a small amount of water (between 500 and 1,000 gallons per week) would be required. There would be no increase in demand for new or expanded entitlements to provide sufficient water supplies following construction. This impact would be less than significant and minor.

***e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No Impact; None)***

As described under 2.17.2a above, the proposed project would not include any facilities or uses that would generate wastewater. Therefore, there would be no potential for effects on wastewater treatment provider's capacity. No impact would occur.

***f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (Less than Significant; Minor)***

The proposed project would not substantially affect landfill capacity. During project construction, minimal amounts of solid waste would be generated. The project would not involve demolition of any facilities or structures. The applicant, TDS, has stated that it and/or its contractors would recycle the minimal generated solid waste quantities to the extent possible and otherwise properly dispose of it. Following construction, the proposed project is not expected to generate solid waste.

Several municipal landfills are located relatively near the proposed project area, none of which have noted capacity issues (CalRecycle 2015a, 2015b). This impact would be less than significant and minor.

***g. Comply with federal, state, and local statutes and regulations related to solid waste? (No Impact; None)***

As described under 2.17.2f above, the proposed project would generate only minimal amounts of solid waste during construction. Also, the applicant has stated that it or its contractors will recycle solid waste generated by the project to the extent possible. As such, the proposed project would not adversely affect Imperial County's ability to meet its reduction, reuse, and recycling mandate of 50% under the California Integrated Waste Management Act. No impact would occur.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. No impact would occur to utilities and services systems.

# 2.18 Mandatory Findings of Significance

| Does the project | Potentially Significant Impact | Less than Significant with Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☒ | ☐ | ☐ |
| b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ☐ | ☒ | ☐ | ☐ |
| c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☒ | ☐ | ☐ |

## 2.18.1 Environmental Impacts

***a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

*Fish and Wildlife Habitat and Populations*

As described in Section 2.4, "Biological Resources," the project area is highly disturbed and contains little to no native vegetation. No special status plant species were identified during field surveys, and none are expected to occur. The Sonoran desert toad and the lowland leopard frog have the potential to occur along irrigation canals in the project area, while several other bird and animal species have potential to occur in the agricultural fields adjacent to the project area. Construction activities would have the potential to impact these species and habitat, but **Mitigation Measures BIO-1** and **BIO-2** would require avoidance of irrigation canals and banks and agricultural fields during construction. All irrigation canals in the project area shall be bored beneath with a directional boring machine such that the bed and banks are not disturbed. With avoidance of this potential habitat and implementation of mitigation measures, impacts to fish and wildlife habitat and populations would be less than significant.

*Important Examples of California History or Prehistory*

As described in Section 2.5, "Cultural Resources," the proposed project would cross several historical resources, including the historic Pilot Knob-Tap Drop 4 161kV Transmission Line (CA-IMP-7158), the Southern Pacific Railroad (today the Union Pacific Railroad) (CA-IMP-3424), the Yuma Main Canal (CA-

IMP-6830), the Reservation Main/Cocopah Canal (CA-IMP-6832), the Reservation Main Drain (CA-IMP-6824), and the Walapai Canal (P-13-014813). All six of these sites have been recommended as eligible for inclusion in the NRHP under Criterion A. However, the proposed project would implement Mitigation **Measures CR-1** and **CR-2** to avoid the transmission line during construction and bore beneath the railroad. Likewise, **Mitigation Measure BIO-1** would require that all irrigation canals in the project area be avoided (i.e., bored beneath) during construction. Additionally, **Mitigation Measure CR-3** will be implemented to require all construction activities be monitored by a qualified archaeologist and/or tribal member so as to avoid and/or minimize impacts to any unknown buried cultural resources. With implementation of these mitigation measures, the proposed project would not be anticipated to affect any cultural resources or important examples of the major periods of California history or prehistory. This impact would be less than significant and minor with mitigation.

***b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?***

As described in various sections of this IS/EA, much of the proposed project area is rural in character with relatively large tracts of agricultural land, much of which is Prime Farmland. In general, future development in Imperial County would be expected to occur consistent with the applicable General Plan, specific plans, and related environmental documentation. Development in the vicinity of the proposed project area is expected to be minimal. The Winterhaven Urban Area Plan indicates that future development in the Winterhaven community is anticipated to consist primarily of infill on existing lots.

Table 2.18-1 lists past, current, and probable future projects in the proposed project vicinity identified during preparation of this IS/EA. The geographic scope used in the search for past, current, or probable future projects was limited to the direct vicinity of the proposed project (i.e., within approximately 2 miles). This was because the proposed project's environmental impacts have been determined to be relatively minor and primarily locally concentrated. With the exception of air quality and greenhouse gas emissions, the proposed project would not have any regional impacts, and, as described below, the proposed project's air quality impacts would not be cumulatively considerable.

**Table 2.18-1. Past, Current, and Probable Future Projects in Proposed Project Vicinity**

| Project Title | Brief Project Description | Distance from Proposed Project Area (miles) |
|---|---|---|
| Sidewalk at San Pasqual Valley Unified School District along East Side of Baseline Road between San Pasqual Road and Arnold Road | This project involves constructing a new concrete sidewalk and associated facilities along Baseline Road between San Pasqual Road and Arnold Road | 0 |
| Resurfacing of Picacho Road | This project involves resurfacing Picacho Road from Ross Road to the All American Canal | 0.5 |
| Union Pacific Railroad Improvement Project on the Yuma Subdivision | The project involves removing a bridge and installing one replacement culvert in southeastern Imperial County, CA, west of the City of Yuma, AZ. | 0.5 |

*Source: Imperial County Public Works 2015*

No past projects were identified which would have the potential to cause future cumulative impacts not represented by existing conditions. In general, for the purposes of this analysis, it is assumed that existing baseline conditions are indicative of past and current projects; as such, the cumulative impacts analysis is

limited to the potential contribution of the proposed project to cumulative environmental impacts in combination with planned and reasonably foreseeable future projects. In addition to the specific projects identified in Table 2.18-1, it is assumed future projects and development would follow the assumptions and projections used in the Imperial County General Plan and Winterhaven Urban Area Plan.

Construction of the projects listed in Table 2.18-1 could adversely affect air quality, biological resources, greenhouse gas emissions, hydrology and water quality, noise, and/or transportation and traffic. Similar to the proposed project, however, the effects of these projects would primarily be temporary. None of the listed projects would be anticipated to substantially increase population or vehicle trips, or otherwise induce growth. Likewise, since none of the projects would increase population, they would be assumed to be consistent with the Imperial County General Plan and ICAPCD Air Quality Management Plan for Ozone and State Implementation Plan for $PM_{10}$.

The proposed project would contribute some amount to existing air quality issues in the project area and Salton Sea air basin. As discussed in Section 2.3, "Air Quality," the project area is currently in non-attainment for the criteria pollutants $PM_{10}$ and ozone. Construction of the proposed project would cause emissions of $PM_{10}$ and ROG (precursor to ozone) from operation of construction equipment and, potentially, fugitive dust generation. However, the proposed project's estimated emissions of $PM_{10}$ and ROG would be below established ICAPCD significance thresholds, and the proposed project would be consistent with ICAPCD's management plans for ozone and $PM_{10}$. Consequently, any cumulative impacts on air quality from the proposed project would be less than significant and minor.

With respect to GHG emissions, as described in Section 2.7, "Greenhouse Gas Emissions," the proposed project would release approximately 77.4 MT of $CO_2$ Eq. emissions during construction, and would not release any GHG emissions during operation. While any amount of GHG emissions could theoretically contribute to climate change, this amount would not be anticipated to have any effect or interfere with California's ability to meet its emissions reduction targets under AB 32. As such, the proposed project's contribution to GHG emissions would not be cumulatively considerable.

As described in the respective sections of this IS/EA, the proposed project would not be anticipated to have significant impacts on biological resources, cultural resources, hydrology and water quality, noise, or any other Appendix G resources. Mitigation measures would be implemented to avoid or minimize potential impacts on these resources. Additionally, all such impacts from the proposed project would be temporary in nature, and would not last beyond the approximately two month construction period. As such, the proposed project's contribution to cumulative impacts on these resources would not be anticipated to be cumulatively considerable.

***c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation; Minor with Implementation of Mitigation Measures)***

As described in Section 2.8, "Hazards and Hazardous Materials," the proposed project would not be anticipated to cause any substantial adverse effects on human beings. There would be some potential during construction for accidental spills of hazardous materials, such as fuels, lubricating fluids, and solvents, but **Mitigation Measures HAZ-1 through HAZ-4** would require that hazardous materials and wastes are handled, stored, and transported safely and in accordance with applicable requirements. While there are several schools and numerous residences within 0.25 miles of the project alignment, the Hazards and Hazardous Materials analysis concluded the project's potential to expose these sensitive receptors to hazardous materials would be less than significant with mitigation. Additionally, with any project involving excavation there is potential to strike existing utility lines, including natural gas lines, which could potentially cause a fire or explosion. The contractor would be responsible for identifying underground

utility lines prior to construction, but there is no reason to believe avoidance could not be accomplished or a significant hazard to human beings from accidental striking of an underground natural gas line would be likely to occur. This impact would be less than significant and minor with mitigation.

# 2.19 Socioeconomics and Environmental Justice

| Does the project: | Major | Minor with Mitigation Incorporation | Minor | None |
|---|---|---|---|---|
| a. Result in significant population or employment changes, or changes in housing and service? | ☐ | ☐ | ☒ | ☐ |
| b. Result in a disproportionately high and adverse environmental impact on a minority or low-income community or population? | ☐ | ☐ | ☒ | ☐ |

## 2.19.1 Setting

### *Environmental Setting*

As described in Section 1.5.1, "Proposed Project," the proposed project would be constructed in Winterhaven, California and other areas of unincorporated Imperial County, California including the Fort Yuma Indian Reservation. In general, the proposed project area is extremely economically depressed. The estimated median household income in Winterhaven was $11,331 in 2013, compared to $60,190 for the state as a whole (City-Data 2015b). Unemployment in Winterhaven was 23.7% in 2014, compared to 7.3% in California as a whole.

The proposed project area also has high proportions of Hispanic, American Indian, and other racial minorities. Table 2.19-1 shows the racial mix in Winterhaven in 2010.

**Table 2.19-1. Races in Winterhaven, CA**

| Race | Percentage of Population |
|---|---|
| Hispanic | 66.2% |
| White alone | 21.3% |
| American Indian alone | 8.4% |
| Two or more races | 3.3% |
| Black alone | 0.8% |

*Source: City-Data 2015b*

Information was not available on the number of housing units in the proposed project area specifically. Overall, Imperial County has 56,957 housing units with a vacancy rate of 12.6% (California Department of Finance 2015).

### *Regulatory Setting*

*Federal*

#### Executive Order 12898 (1994): Environmental Justice

Executive Order (E.O.) 12898—Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations—was issued by President William J. Clinton in 1994 (USEPA 2015b). E.O. 12898 directs federal agencies to identify and address the disproportionately high and adverse human health

or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law (USEPA 2015b).

### *State*

#### Government Code Section 65040.12

California Government Code Section 65040.12 designates the Governor's Office of Planning and Research (OPR) as the coordinating agency in state government for environmental justice programs. Section 65040.12 also directs OPR to include guidelines for addressing environmental justice matters in city and county general plans, including provisions to: propose methods for planning for the equitable distribution of new public facilities and services that increase and enhance community quality of life throughout the community, given the fiscal and legal constraints that restrict the siting of these facilities.

### *Local*

#### Imperial County General Plan

The Imperial County General Plan Housing Element contains the following goals and policies related to socioeconomics and environmental justice.

> **Goal 1:** Ensure the availability of a variety of housing types for all income levels throughout the county.
>
> > **Policy 1.1—**Provide for an adequate supply of housing in suitable locations and with adequate services that collectively accommodate a range of housing types, sizes, and prices meeting the needs of all economic segments of the county's population.
>
> **Goal 4:** Facilitate the provision of fair housing opportunities for all residents of Imperial County.
>
> > **Policy 4.1—**Ensure that housing opportunities are available to all income groups in all communities without discrimination on the basis of race, religion, ethnicity, sex, age, marital status, or household composition.

## 2.19.2 Environmental Impacts

### *Proposed Project*

***a. Does the proposed project result in significant population or employment changes, or changes in housing and service? (Minor - Beneficial)***

As described in Section 2.13, "Population and Housing," the proposed project is not anticipated to substantially increase population. The proposed project would be limited to installation of fiber-optic cable and associated facilities for the provision of high-speed internet. It is possible some construction workers may temporarily relocate to the area and occupy housing, but this would not be anticipated to substantially affect housing. Likewise, it is possible the availability of high-speed internet as a result of the project may make the project area more desirable to prospective homebuyers, but, again, this effect is not likely to be substantial. While information was not available on housing in the proposed project area specifically, Imperial County as a whole has a 12.5% vacancy rate, suggesting availability of housing is not a primary concern. Any employment changes resulting from the proposed project are not anticipated to be substantial. The proposed project could generate some temporary construction jobs for tribal members, but is not anticipated to create jobs substantially over the long-term. Temporary employment opportunities for tribal

members would be prescribed and coordinated through the Tribal Employment Rights Office. Therefore, the proposed project would have a minor beneficial, indirect effect on employment and income.

The primary effect of the proposed project with respect to this impact criterion would be beneficial, in providing high-speed internet service to an underserved community. As described in Section 1.4, "Proposed Purpose, Need, and Objectives," the need for the proposed project is predicated on the fact that the proposed area is underserved with respect to broadband internet, as defined in CPUC Decision 12-02-015: broadband is available, but no facilities-based provider offers service at speeds of at least 3 megabits per second for downloads and 1 megabits per second for uploads. Therefore, the proposed project will correct existing deficiencies in service to this community. Overall, this impact would be minor and beneficial.

***b. Does the proposed project result in a disproportionately high and adverse impact on a minority or low-income community or population? (Minor – Beneficial)***

The proposed project would not be anticipated to have disproportionately high and adverse impacts on a minority or low-income community. As described in the Environmental Setting above, the proposed project area is both a minority and a low-income community. Additionally, as described in the preceding document sections, the proposed project would have some adverse effects, primarily construction-related, such as those related to air quality and noise. As such, all adverse effects (with the exception of GHG effects) from the proposed project would accrue to the minority and low-income communities within the proposed project area. However, as described in preceding sections of this document, with implementation of mitigation measures, all impacts of the proposed project would be less than significant and temporary. After project construction, the proposed project would not have any adverse effects on the surrounding communities. Moreover, all the benefits of the proposed project (i.e., availability of high-speed internet) would accrue to the minority and low-income communities in the proposed project area. Over the long-term, these benefits would be anticipated to outweigh the temporary adverse construction effects. Therefore, this impact would be minor and beneficial.

### *No Project Alternative*

***a. Does the proposed project result in significant population or employment changes, or changes in housing and service? (Moderate)***

The No Project Alternative would only involve BIA not granting ROW and the continued use of TDS' existing land-based telecommunications system and would not involve any construction activities. Thus, the No Project Alternative would not result in significant population or employment changes. In addition, the No Project Alternative would not involve any changes in housing.

The No Project Alternative's primary effect with respect to this impact criterion would be no improvement from existing telecommunications service conditions and no provision of high-speed internet service to an underserved community. As described previously, the need for the proposed project is predicated on the fact that the proposed area is underserved with respect to broadband internet. Therefore, the No Project Alternative would not correct existing service deficiencies to this community and, over time, this community may grow further behind technologically compared to other areas in the state. Overall, this impact would be adverse and moderate.

***b. Does the proposed project result in a disproportionately high and adverse impact on a minority or low-income community or population? (Moderate)***

The No Project Alternative would potentially be anticipated to have disproportionately high and adverse impacts on a minority or low-income community. As described in the Environmental Setting above, the

proposed project area is both a minority and a low-income community. While the No Project Alternative would not create any construction-related effects on this community, there would be no telecommunication service benefits associated with the No Project Alternative. Over the long-term, the No Project Alternative would create an additional burden on the minority and low-income communities in the proposed project area by not advancing the telecommunication services in these areas and resulting in these communities being farther behind the rest of the state technologically. Therefore, this impact would be adverse and moderate.

## 2.20 Indian Trust Assets

| Does the project: | Major | Minor with Mitigation Incorporation | Minor | None |
|---|---|---|---|---|
| a. Result in adverse effects to Indian Trust Assets? | ☐ | ☐ | ☒ | ☐ |

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the United States government for federally recognized tribes or American Indian individuals. The trust relationship usually stems from a treat, Executive Order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized tribes. "Assets" are anything owned that holds monetary value. "Legal interests" refers to a property interest for which there is a legal remedy (such as a compensation or injunction) if there is improper interference. Assets can be real property, physical assets, or intangible property rights (such as a lease or right to use something).

ITAs cannot be sold, leased, or otherwise alienated without approval from the United States. Trust assets may include lands, minerals, natural resources, and hunting, fishing, and water rights. American Indian reservations, Rancherias, and public domain allotments are examples of lands that are often considered ITAs. In some cases, ITAs may be located off trust land.

BIA shares the Indian trust responsibility with other agencies of the Executive Branch to protect and maintain ITAs reserved by or granted to tribes or American Indian individuals by treaty, statute, or Executive Order.

### 2.20.1 Setting

#### *Environmental Setting*

ITAs within the proposed project include those portions of the project area that are located on the Fort Yuma Reservation, which is comprised of tribal allotments that are ITAs. Each of the allotments is approximately 10 acres in size and can have anywhere from 1 to well over 100 tribal members that have an ownership interest in the allotment.

#### *Regulatory Setting*

Management of ITAs has evolved over recent decades and is currently based on the following regulations, Executive Orders, and agreements:

*Executive Order 13751, Consultation and Coordination with Indian Tribal Governments, 63 F.R. 96.*

Executive Order 13175 was issued to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications. When implementing such

policies, agencies shall consult with tribal officials as to the need for federal standards and any alternatives that limits their scope or otherwise preserves the prerogatives and authority of Indian tribes.

*Government-to-Government Relations with Native American Tribal Governments (Memorandum signed by President Clinton; April 29, 1994).*

Federal Register, Vol. 59, No. 85. The Memorandum directs federal agencies to consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments prior to taking actions that affect federally recognized tribal governments. Federal agencies must assess the impact of federal government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during such development.

*Secretarial Order No. 3175 – Departmental Responsibilities for Indian Trust Resources.*

Secretarial Order 3175 requires Interior bureaus and offices to consult with the recognized tribal government with jurisdiction over the trust property that a proposal may affect.

*Secretarial Order No. 3206 – American Indian Tribal Rights, Federal –Tribal Trust Responsibilities, and the Endangered Species Act.*

This order clarifies the responsibilities of the Interior agencies with regard to the effects of ESA compliance actions affect, or may affect, Indian lands, tribal trust resources, or the exercise of American Indian tribal rights. Interior agencies will carry out their responsibilities in a manner that harmonizes the federal trust responsibility to tribes, tribal sovereignty, and statutory missions of the departments, and that strives to ensure that Indian tribes do not bear a disproportionate burden for the conservation of listed species.

*Secretarial Order No. 3215 – Principles for the Discharge of the Secretary's Trust Responsibility.*

This order provides guidance to the employees of the Department of the Interior who are responsible for carrying out the Secretary's trust responsibility as it pertains to ITAs.

*US Department of the Interior Departmental Manual 512 DM Chapter 2 10-31-2000 – Departmental Responsibilities for Indian Trust Resources.*

This chapter of the manual establishes the policies, responsibilities, and procedures for operating on a government-to-government basis with federally recognized Indian tribes for the identification, conservation, and protection of American Indian and Alaska Native trust resources to ensure the fulfillment of the Federal Indian Trust Responsibility.

## 2.20.2 Environmental Impacts

### *Proposed Project*

#### *a. Will the proposed project adversely affect ITAs? (Minor)*

The proposed project would involve the installation and maintenance of fiber-optic lines on approximately 58 tribal land allotments through the grant of a 10.0-foot-wide ROW with a term of 50 years. Throughout the 15.3-mile-length of the entire project, the ROWs would encompass approximately 9.2 acres of tribal land. Tribal allottees would retain legal ownership and title to their land. The presence of the fiber optic cable would not limit an allottee's use of their property, so long it does not interfere with the ROW for the fiber-optic lines. Because the fiber optic ROW easement would not cause a reduction in the amount of

tribally owned land, or restrict activities on the land, the proposed project would have a minor effect on ITAs.

### *No Project Alternative*

The No Project Alternative would not involve the granting of ROW or encroachment permits or any construction or operational activities. There would be no effect on ITAs.

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# 3.0 Consultation, Coordination, Public Review, and List of Preparers

## 3.1 Agencies and Persons Contacted

The following agencies were consulted during the preparation of the Draft IS/EA:

- Bureau of Indian Affairs
- U.S. Bureau of Reclamation
- Quechan Tribe

## 3.2 List of Preparers

**California Public Utilities Commission**

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# 5.0 Mitigation Monitoring, Reporting, and Compliance Plan

The following mitigation monitoring, reporting, and compliance plan (MMRP) includes all the mitigation measures identified in Section 2, "Draft Initial Study/Environmental Assessment" of this IS/EA. For each mitigation measure, this table identifies monitoring and reporting actions that shall be carried out and the monitoring schedule. This table also includes a column where responsible parties can check off monitoring and reporting actions as they are completed.

As lead agencies, CPUC and BIA will be responsible for ensuring that mitigation measures identified in this IS/EA are fully implemented. However, many of the mitigation measures would be implemented by TDS and/or its contractors. Permit documents for the Proposed Project will identify the obligations of TDS, including relevant mitigation measures. CPUC and BIA will require that TDS provide CPUC and BIA with documentation that it has adequately implemented its permit obligations, including applicable mitigation measures.

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| | Mitigation Measure | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| ***Aesthetics*** | | | | |
| **None.** | | | | |
| ***Air Quality*** | | | | |
| **AQ-1** | **Implement Fugitive Dust Control Measures**<br>TDS will require all construction contractors to implement the following ICAPCD standard measures for fugitive $PM_{10}$ control:<br>▪ All disturbed areas, including bulk material storage that is not being actively utilized, shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative ground cover.<br>▪ All on- and off-site unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.<br>▪ All unpaved traffic areas 1 acre or more in size with 75 or more average vehicle trips per day will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.<br>▪ The transport of bulk materials shall be completely covered unless 15 cm (6 inches) of freeboard space from the top of the container is maintained with no spillage or loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material. | 1. Confirm measure is incorporated into the project plans and specifications.<br>2. Confirm that ICAPCD dust control measures are implemented properly. | 1. Design phase<br>2. During construction | |

| | Mitigation Measure | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| | ▪ All track-out and carry-out shall be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 15 linear m (50 linear feet) or more onto a paved road within an urban area.<br>▪ Bulk material shall be stabilized prior to movement or at points of transfer with the application of sufficient water, the application of chemical stabilizers, or by sheltering or enclosing the operation and transfer line.<br>▪ The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.<br>In addition, the following ICAPCD-recommended discretionary measures will be implemented:<br>▪ Watering of exposed soil with adequate frequency for continued moist soil.<br>▪ Replacing ground cover in disturbed areas as quickly as possible.<br>▪ Installing an automatic sprinkler system on all soil piles.<br>▪ Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. | | | |

| Mitigation Measure | | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| ***Biological Resources*** | | | | |
| **BIO-1** | **Avoidance of Irrigation Canals and Banks**<br>All irrigation canals in the project area shall be bored beneath and avoided during construction. Bore pits shall be placed a minimum distance of 16 feet beyond either the top of the canal bank or the maximum extent of any vegetation present along the canal's margin. | 1. Confirm that project plans avoid irrigation canals and banks.<br>2. Confirm irrigation canals and banks are being avoided. | 1. Design phase<br>2. During construction | |
| **BIO-2** | **Avoidance of Agricultural Fields**<br>All agricultural fields shall be avoided during construction activities. | 1. Confirm project plans avoid agricultural fields.<br>2. Confirm that agricultural fields are being avoided. | 1. Design phase<br>2. During construction | |
| **BIO-3** | **Avoidance of Trees and Minimization of Vegetation Clearing**<br>No trees shall be removed during project construction. If vegetation trimming is required to complete the installations, trimming shall be limited to the absolute minimum necessary. | 1. Confirm measure is incorporated into project plans and specifications.<br>2. Confirm no trees are being removed.<br>3. Confirm any trimming is limited to the minimum necessary. | 1. Design phase<br>2. During construction<br>3. During construction | |
| **BIO-4** | **Invasive Plant Species Best Management Practices**<br>Prior to the transport of any construction vehicles or equipment to the project area, these vehicles and equipment shall be thoroughly cleaned to remove any potential dirt or plant material (i.e., seeds). | 1. Confirm measure is incorporated into project plans and specifications.<br>2. Confirm invasive plant species BMPs are being implemented. | 1. Design phase<br>2. During construction | |

| | Mitigation Measure | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| ***Cultural Resources*** | | | | |
| **CR-1** | **Avoid Adverse Effects/Significant Adverse Changes to Resources Determined to be Historic Properties/Historical Resources Through Project Design**<br>Six linear resources, all assumed to be eligible for inclusion in the NRHP for this project, have been identified crossing the APE. These include the Pilot Knob-Tap Drop 4 161kV Transmission Line, the SPRR, Reservation Main Drain Canal, Yuma Main Canal, Reservation Main/Cocopah Canal, and Walapai Canal. The project will be designed to avoid each of the resources. Project construction will avoid the poles supporting the Pilot Knob-Tap Drop 4 161kV Transmission Line, and installation of the fiber optic line will be conducted by boring underneath the SPRR and all of the canals. | 1. Confirm that project plans avoid impacts to historic properties/historical resources. | 1. Design phase | |
| **CR-2** | **Immediately Halt Construction if Cultural Resources are Discovered, Evaluate All Identified Cultural Resources for Eligibility for Inclusion in the NRHP and/or CRHR, and Implement Appropriate Mitigation Measures for Eligible Resources**<br>Not all cultural resources are visible on the ground surface. As a result, prior to initiation of ground-disturbing activities, construction crews will receive training about the kinds of archaeological materials that could be present within the project area and the protocols to be followed should any such materials be uncovered during construction. Training will be conducted by an archaeologist who meets the U.S. Secretary of Interior's professional standards. Training may be required during different phases of construction to educate new construction staff personnel. Furthermore, all construction activities will be monitored by a qualified archaeologist and/or a member of the Fort Yuma Quechan tribe. | 1. Retain a qualified archaeologist to conduct worker training.<br>2. Conduct construction crew training regarding archaeological materials that could be present in the project area.<br>3. In the event that cultural resources are encountered, ensure that work stops immediately.<br>4. Confirm that any unanticipated discoveries are evaluated and addressed appropriately. | 1. Before construction<br>2. Before construction<br>3. During construction<br>4. During construction | |

| | Mitigation Measure | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| | If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains are encountered during any project construction activities, work shall be suspended immediately at the location of the find and within a radius of at least 50 feet and the lead agency will be contacted.<br><br>All cultural resources accidentally uncovered during construction within the project site shall be evaluated for eligibility for inclusion in the NRHP or CRHR, depending on whether the discovery is on federal land or state/private land. Resource evaluations will be conducted by individuals who meet the U.S. Secretary of the Interior's professional standards in archaeology, history, or architectural history, as appropriate. If any of the resources meet the eligibility criteria identified in 36 CFR 60.4, or PRC Section 5024.1 or CEQA Section 21083.2(g), mitigation measures will be developed and implemented in accordance with 36 CFR 800.13 or CEQA Guidelines Section 15126.4(b) before construction resumes. | | | |
| **CR-3** | **Immediately Halt Construction if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code**<br><br>If human remains are accidentally discovered during the project's construction activities on non-federal lands, the requirements of California Health and Human Safety Code Section 7050.5 shall be followed. Potentially damaging excavation shall halt in the project site of the remains, with a minimum radius of 100 feet, and the county coroner shall be notified. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code | 1. Confirm that measure is included in the project plans and specifications.<br><br>2. In the event that human remains are encountered, halt work and contact the Santa Barbara County Coroner.<br><br>3. Confirm that any discoveries of human remains are evaluated and addressed properly. | 1. Design phase<br><br>2. During construction<br><br>3. During construction | |

| Mitigation Measure | | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| | Section 7050[c]). Pursuant to the provisions of PRC Section 5097.98, the NAHC shall identify a Most Likely Descendent (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods. The project proponent will work with the MLD to ensure that the remains are removed to a protected location and treated with dignity. | | | |
| **CR-4** | **Immediately Halt Construction if Human Remains Are Discovered and Implement Protocols Pursuant to the NAGPRA**<br>If human remains are accidentally discovered during the project's construction activities on federal lands, the contractor will comply with 25 USC Section 3002.3(d) of the NAGPRA. Construction shall cease in the area of discovery to protect the human remains and the county coroner will be notified. The project proponent will then notify, in writing, the BIA and the Fort Yuma Quechan tribe. The project proponent will work with the BIA and the Fort Yuma Quechan tribe to ensure that the remains are removed to a protected location and treated with dignity. | 1. Confirm that measure is included in the project plans and specifications.<br>2. In the event human remains are discovered, ensure that work is halted and the Imperial County Coroner, BIA, and the Fort Yuma Quechan Tribe are notified.<br>3. Confirm that any discoveries of human remains are removed to a protected location and treated with dignity. | 1. Design phase<br>2. During construction<br>3. During construction | |
| ***Geology, Soils, and Seismicity*** | | | | |
| **HYD-1** | See *Hydrology and Water Quality* | | | |
| **HYD-2** | See *Hydrology and Water Quality* | | | |
| ***Greenhouse Gas Emissions*** | | | | |
| **None.** | | | | |

| | Mitigation Measure | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| ***Hazards and Hazardous Materials*** | | | | |
| **HAZ-1** | **Ensure Appropriate Hazardous Material Use, Handling, and Disposal**<br>The applicant shall ensure proper labeling, storage, handling, and use of hazardous materials in accordance with best management practices and OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements. Hazardous materials shall be stored as far from schools as possible throughout construction activities. | 1. Confirm measure is included in project plans and specifications.<br>2. Confirm proper labeling, storage, handling, and use of hazardous materials. | 1. Design phase<br>2. During construction | |
| **HAZ-2** | **Ensure Proper Employee Training for Hazardous Materials**<br>The applicant shall ensure that employees are properly trained in the use and handling of hazardous materials and that each material is accompanied by a material safety data sheet (MSDS). | 1. Confirm that employees are properly trained in use and handling of hazardous materials and that each material is accompanied by an MSDS. | 1. Before construction | |
| **HAZ-3** | **Implement Appropriate Hazardous Materials Storage**<br>Any small quantities of hazardous materials stored temporarily in staging areas shall be stored on pallets within fenced and secured areas and protected from exposure to weather. Incompatible materials will be stored separately, as appropriate. | 1. Confirm hazardous materials are stored appropriately. | 1. During construction | |
| **HAZ-4** | **Implement Appropriate Hazardous Materials Handling and Disposal Measures**<br>All hazardous waste materials removed during construction shall be handled and disposed of by a licensed waste disposal contractor and transported by a licensed hauler to an appropriately licensed and permitted disposal or recycling facility to the extent necessary to ensure the area can be safely traversed. | 1. Confirm hazardous materials handling and disposal measures are included in project plans and specifications.<br>2. Confirm that any hazardous waste materials removed during construction are handled by a licensed waste | 1. Design phase<br>2. During construction | |

| Mitigation Measure | | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| | | disposal contractor and transported by a licensed hauler to an appropriately licensed and permitted waste disposal facility. | | |
| **HAZ-5** | **Report Releases of Hazardous Materials**<br>Releases or threatened releases of hazardous materials shall be reported to the appropriate agencies. | 1. Confirm any releases or threatened releases of hazardous materials are reported to appropriate agencies. | 1. During construction | |
| **HAZ-6** | **Require Emergency Response Plan Measures in Circulation and Detour Plans and Coordinate with Local Agencies**<br>The circulation and detour plans developed in compliance with Mitigation Measure TRA-3 shall include measures to avoid potential interference with an emergency response plan, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders. Development and implementation of these plans shall be coordinated with the County of Imperial, CPUC, and the BIA. | 1. Confirm requirement is included in project plans and specifications.<br>2. Confirm any circulation and detour plans developed for the Proposed Project do not interfere with an emergency response plan.<br>3. Confirm coordination with County of Imperial, CPUC, and BIA. | 1. Design phase<br>2. Before construction<br>3. Before construction | |
| **HYD-1** | See *Hydrology and Water Quality* | | | |
| **HYD-2** | See *Hydrology and Water Quality* | | | |

| Mitigation Measure | | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| ***Hydrology and Water Quality*** | | | | |
| **HYD-1** | **Manage and Control Sediments in Compliance with Applicable Regulations**<br>The applicant shall manage construction-induced sediment and excavated spoils in accordance with the requirements of the statewide Construction General Permit issued by the SWRCB in accordance with USEPA NPDES permit requirements for stormwater runoff associated with construction activities. To manage and control sediments, TDS and/or its contractor shall implement site-specific BMPs, which may include but are not limited to the following:<br>▪ Implement practices to reduce erosion of exposed soil and prevent the transport of sediment from the site or any given stockpile, including stabilization of soil stockpiles, contain excavated or disturbed soils within a controlled area, watering for dust control, establishment of perimeter silt fences, and/or placement of fiber rolls.<br>▪ Minimize soil disturbance areas.<br>▪ Cover and contain stockpiled soils in such a way that eliminates offsite runoff from occurring.<br>▪ Replace excavated soils following construction, grade disturbed areas, and re-vegetate so that post-construction topography and drainage matches pre-construction conditions and meets the site stabilization requirements of the Construction General Permit.<br>▪ Transport and dispose of surplus soils appropriately.<br>As a performance standard, the selected BMPs shall represent the best available technology that is economically achievable. All BMPs shall be regularly monitored for effectiveness using appropriate methods | 1. Confirm that measure is included in project plans and specifications.<br>2. Confirm that BMPs are being implemented.<br>3. Monitor BMPs for effectiveness and correct any BMPs immediately if determined not to be effective. | 1. Design phase<br>2. During construction<br>3. During construction | |

| | Mitigation Measure | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| | (visual observation, sampling) at appropriate intervals (e.g., daily or weekly) and corrected immediately if determined to not be effective. | | | |
| **HYD-2** | **Develop and Implement Best Management Practices for Hazardous Materials**<br>Prior to the onset of construction, TDS or its authorized contractor shall implement site-specific BMPs during construction activities, which may include but are not limited to the following:<br>▪ Develop (before initiation of construction activities) and implement (during construction activities) a spill prevention and emergency response plan to handle potential spills of fuel or other pollutants.<br>▪ Prevent any construction-related materials, wastes, spills, or residues from being discharged from the project area.<br>▪ Install, implement, and maintain BMPs consistent with the California Storm Water Quality Association Best Management Practice Handbook (California Storm Water Quality Association [CASQA] 2015) or equivalent to minimize the discharge of pollutants to local water bodies, consistent with the requirements of the Construction General Permit.<br>▪ Implement practices to minimize the contact of construction materials, equipment, and maintenance supplies with stormwater.<br>▪ Limit fueling and other activities involving hazardous materials to designated areas only; provide drip pans under equipment and conduct daily checks of vehicle condition.<br>▪ Require the proper disposal of trash and any other construction-related waste. | 1. Confirm measure is included in project plans and specifications.<br>2. Confirm development of spill prevention, emergency response plan, and other hazardous materials BMPs.<br>3. Confirm implementation of spill prevention plan, emergency response plan, and other hazardous materials BMPs.<br>4. Confirm all contractors and subcontractors transport, store, handle, and dispose of hazardous materials consistent with relevant regulations and guidelines.<br>5. Monitor BMPs for effectiveness and correct immediately any BMPs determined not be effective. | 1. Design phase<br>2. Before construction<br>3. During construction<br>4. During construction<br>5. During construction | |

| Mitigation Measure | | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| | ▪ Locate staging of construction materials, equipment, and excavated spoils outside of drainages.<br><br>TDS shall ensure that, through the enforcement of contractual obligations, all contractors transport, store, handle, and dispose of construction-related hazardous materials consistent with relevant regulations and guidelines, including those recommended and enforced by Caltrans; the Colorado River RWQCB; the applicable Imperial County department; and the applicable local fire department. Recommendations might include minimizing the amount of hazardous materials/waste stored on-site at any one time, transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using the applicable federal, state, and/or local regulatory agency protocols. In addition, all precautions required by RWQCB-issued NPDES Construction General Permit will be taken to ensure that no hazardous materials enter any storm drainages.<br><br>As a performance standard, the selected BMPs shall represent the best available technology that is economically achievable. All BMPs shall be regularly monitored for effectiveness using appropriate methods (visual observation, sampling) at appropriate intervals (e.g., daily or weekly) and corrected immediately if determined to not be effective. | | | |
| ***Land Use and Planning*** | | | | |
| None. | | | | |

| Mitigation Measure | | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| ***Noise and Vibration*** | | | | |
| **NOI-1** | **Restrict Construction Work Periods**<br>All construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday. No construction operations shall occur on Sunday or holidays. | 1. Confirm measure is included in project plans and specifications.<br>2. Confirm measure is being followed. | 1. Design phase<br>2. During construction | |
| **NOI-2** | **Notify Local Landowners of Construction Activities**<br>All residences and landowners within 50 feet of proposed project alignments shall be provided written notice of construction activity within at least two days of commencement of said activity. The notice shall state the date of planned construction activity in proximity to that landowner's property and the range of hours during which maximum noise levels may be anticipated. The notices shall also contain a warning that ground-borne vibration from operation of construction equipment can potentially damage buildings and direct property owners to secure loose items, if warranted. | 1. Confirm measure is included in project plans and specifications.<br>2. Confirm measure is being followed. | 1. Design phase<br>2. During construction | |
| **NOI-3** | **Minimize Vibrations from Construction Activities**<br>The construction contractor shall operate earth-moving equipment within the construction area as far away from vibration-sensitive sites as possible. Additionally, where possible, the contractor shall use construction equipment that causes lower vibration levels. | 1. Confirm measure is included in project plans and specifications.<br>2. Confirm measure is being followed. | 1. Design phase<br>2. During construction | |
| ***Public Services*** | | | | |
| None. | | | | |
| ***Recreation*** | | | | |
| None. | | | | |

| | Mitigation Measure | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| ***Transportation and Traffic*** | | | | |
| **TRA-1** | **Obtain and Comply with All Applicable Road Encroachment Permits**<br>TDS will require the project contractor to obtain all necessary local, state, and BIA road encroachment permits prior to construction and will comply with all the applicable conditions of approval. | 1. Confirm all applicable permits have been obtained. | 1. Before construction | |
| **TRA-2** | **Prepare and Implement a Traffic Control Plan, if Required by the Local Permits**<br>As deemed necessary by the applicable jurisdiction, the road encroachment permits may require the contractor to prepare and implement a traffic control plan in accordance with professional engineering standards prior to construction. | 1. If a traffic control plan is required by the local permits, ensure plan is prepared.<br>2. If traffic control plan is required, ensure plan is implemented. | 1. Before construction<br>2. During construction | |
| **TRA-3** | **Develop and Implement Traffic Construction Best Management Practices**<br>TDS and/or its contractor shall develop and implement traffic construction-related best management practices including but not limited to:<br>▪ Develop circulation and detour plans to minimize impacts to local street circulation. This shall include the use of signing and flagging to guide vehicles through and/or around the construction zone.<br>▪ Schedule truck trips outside of peak morning and evening commute hours.<br>▪ Limit lane closures during peak hours to the extent possible.<br>▪ Include detours for bicycles and pedestrians in all areas potentially affected by project construction. | 1. Confirm that traffic construction BMPs are developed.<br>2. Confirm that traffic construction BMPs are implemented. | 1. Before construction<br>2. During construction | |

| Mitigation Measure | | Monitoring and Reporting Action | Monitoring Schedule | Completion Date and Initials |
|---|---|---|---|---|
| | ▪ Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.<br>▪ Coordinate with local transit agencies for the temporary relocation of routes or bus stops in work zones as necessary. | | | |
| ***Utilities and Service Systems*** | | | | |
| None. | | | | |

1

# Appendix A

## Structure of Joint IS/EA

# Appendix A
## Structure of Joint IS/EA

NEPA and CEQA were signed into law in 1970 by President Richard Nixon and California Governor Ronald Reagan, respectively. NEPA applies only to federal agencies and their proposed actions, while CEQA applies only to California state and local agencies and their proposed discretionary projects.

Both NEPA and CEQA require the incorporation of environmental values into governmental decision making. Both statutes require public agencies to consider the environmental impacts of their actions, to document those impacts, and to disclose that documentation to the public. CEQA additionally requires that significant adverse effects are minimized to the extent feasible.

NEPA and CEQA each encourage a joint federal and state review where a project requires both federal and state approvals. Because the proposed project requires approvals from federal and state agencies, a joint IS/EA is being prepared. This joint review process will avoid redundancy, improve efficiency and interagency cooperation, and be easier for the public to follow.

Despite the similarities between NEPA and CEQA, there are key differences both procedurally and substantively that must be addressed in a joint document. In addition, there are differences in terminology. A description of these key differences and how they will be addressed in this IS/EA is provided in Table 1.1.

In terms of differences in *terminology*, CEQA terminology will be used when both terms refer to the same or very similar concepts or documents. For example, NEPA involves the evaluation of proposed "actions," whereas CEQA applies to proposed "projects." In this case, the CEQA term "project" shall be used to refer to both concepts.

In cases when substantive requirements of NEPA and CEQA differ, the more stringent requirements between NEPA and CEQA will be satisfied, and all unique requirements for NEPA and CEQA will both be met. Thus, for instance, greenhouse gas impacts should be considered in the analysis, since that is required pursuant to the CEQA guidelines. Similarly, a socioeconomic impact analysis (as required by NEPA but not necessarily by CEQA) will be conducted in this IS/EA.

In cases where procedures differ, both sets of procedures will be followed to ensure full compliance with both NEPA and CEQA. For example, notification procedures differ between the two statutes. In such cases, both sets of procedures shall be followed.

**Table 1.1 Key Differences Between NEPA and CEQA, and How Differences will be Addressed in the IS/EA**

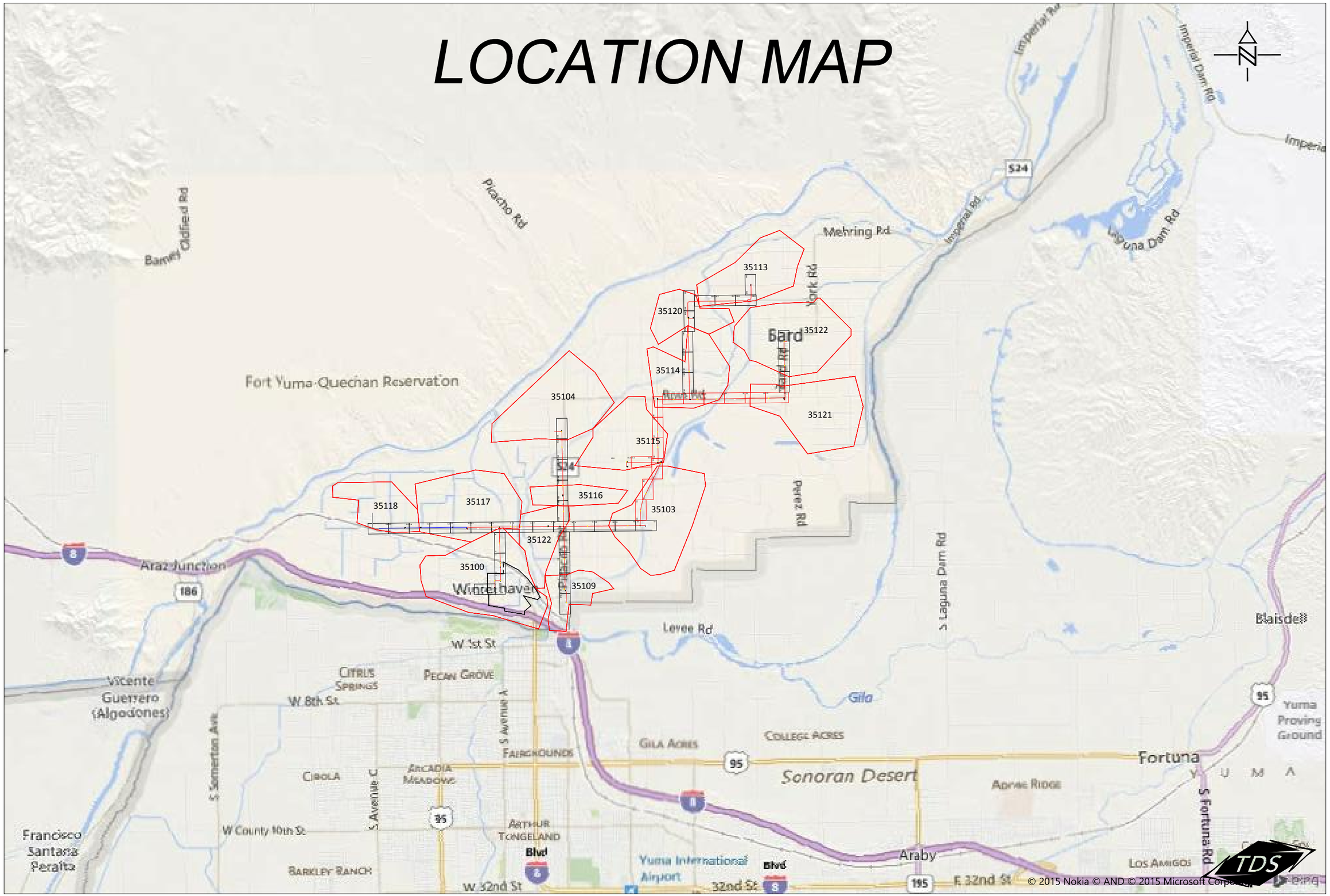
| NEPA | CEQA | How Addressed in IS/EA |
|---|---|---|
| **General Terminology** | | |
| Proposal for Action (or Proposed Action) | Proposed Project | Proposed Project |
| Cooperating Agency – any federal agency other than the lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in the proposed Action (40 CFR §1508.5) | Responsible Agency – all public agencies other than the lead agency which have discretionary approval power over the project (CEQA Guidelines §15381)<br>Trustee Agency – agencies without approval authority, but which have jurisdiction by law over resources potentially affected by the Project. | Both NEPA and CEQA terminology will apply to applicable agencies. |
| Purpose and Need | Goals and Objectives | Goals and Objectives; Purpose and Need (both terminologies will be used due to differing agency missions and authorities) |
| No Action alternative | No Project alternative | No Project Alternative |
| Environmentally Preferred Alternative | No term applies in an IS | Environmentally Preferred Alternative |
| Affected Environment | Environmental Setting | Environmental Setting |
| Environmental Consequences | Environmental Impacts | Environmental Impacts |
| **Environmental Baseline** | | |
| NEPA does not contain specific guidance for using a baseline for determining an action's significant effects on the quality of the human environment. The No Action alternative may be used as a "benchmark" to compare the magnitude of environmental effects of the action alternatives. Under NEPA, federal agencies have the discretion to define the baseline for assessing environmental effects of the alternatives as the no action alternative. | Baseline conditions are normally defined as physical conditions in the Project Area that exist at the time that the IS is prepared. | When comparing the Proposed Project to baseline conditions, the Proposed Project will be evaluated against existing conditions at the time that the Draft IS/MND is circulated. If the No Action is different than existing conditions, the Action Alternative will be evaluated against the No Action alternative. |
| **Significance** | | |
| Significance is defined in terms of context and intensity. Context refers to the need to consider impacts within the setting in which they occur (40 CFR §1508.27(a)). Intensity refers to the severity of the impact, with 10 non-exclusive criteria to consider specified in the regulations (40 CFR §150827(b)). | Significance is defined as "a substantial, or potentially substantial, adverse change within the area affected by the project" (CEQA Guidelines §15382). A "threshold of significance" is "an identifiable quantitative, qualitative, or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the lead | CEQA requires significance determinations for individual impacts, but NEPA does not. Therefore, significance determinations in the document will be made under CEQA. |

| NEPA | CEQA | How Addressed in IS/EA |
|---|---|---|
| | agency and compliance with which means the effect normally will be determined to be less than significant" (CEQA Guidelines §15064.7(a)). | |
| **Socioeconomic Impacts** | | |
| Economic and social effects need to be evaluated in an EA when these effects are interrelated with physical effects on the environment (40 CFR 1508.14). In addition, environmental justice impacts must be evaluated. | Economic and social effects need to be evaluated in an IS when these effects result in a direct or indirect change in the physical environment. | NEPA's approach to evaluating socioeconomic impacts will be used in the IS/EA. |
| **Cumulative Impacts** | | |
| NEPA defines a cumulative impact as an "impact on the environment which results from the incremental impact of the Action when added to other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR §1508.7) | CEQA defines a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts (CEQA Guidelines §15355). The IS should focus on instances in which the proposed project would incrementally contribute to a significant cumulative impact. | The cumulative impact analysis will use a combination of both approaches. |
| **Mitigation** | | |
| Mitigation includes avoiding, minimizing, rectifying, reducing over time, or compensating for an impact (40 CFR §1508.20). NEPA guidance says that "all relevant, reasonable mitigation measures that could improve the project are to be identified," even those outside the agency's jurisdiction (NEPA's 40 Most Asked Questions, 19b). The lead agency is not limited to considering mitigation only for significant impacts, but should identify feasible measures for any adverse environmental impacts, even those that are not considered significant (40 CFR §1502.16(h)). | CEQA defines mitigation the same way as NEPA (CEQA Guidelines § 15370). An IS/MND must describe feasible mitigation measures for significant adverse impacts (CEQA Guidelines § 15126.4(a)(1)), and the agency must adopt mitigation measures to reduce the impact to a less-than-significant level. If this is not feasible, or if a fair argument may be made based on substantial evidence that an impact is significant even after implementation of one or more mitigation measures, then an EIR must be prepared. Mitigation measures may also be adopted, but are not required, for environmental impacts that are not found to be significant (CEQA Guidelines § 15126.4(a)(3)). | Mitigation measures are considered for all adverse impacts to environmental resources. The BIA will approach *implementation* of mitigation measures according to NEPA in its FONSI. CPUC shall adopt all proposed mitigation measures for significant impacts according to CEQA in this MND. |
| **Environmental Review Documents** | | |
| Environmental Assessment (EA) | Initial Study (IS) | IS/EA |
| Finding of No Significant Impact (FONSI) | Mitigated Negative Declaration (MND) | BIA will publish a FONSI in accordance with NEPA. CPUC will adopt a MND in accordance with CEQA. |

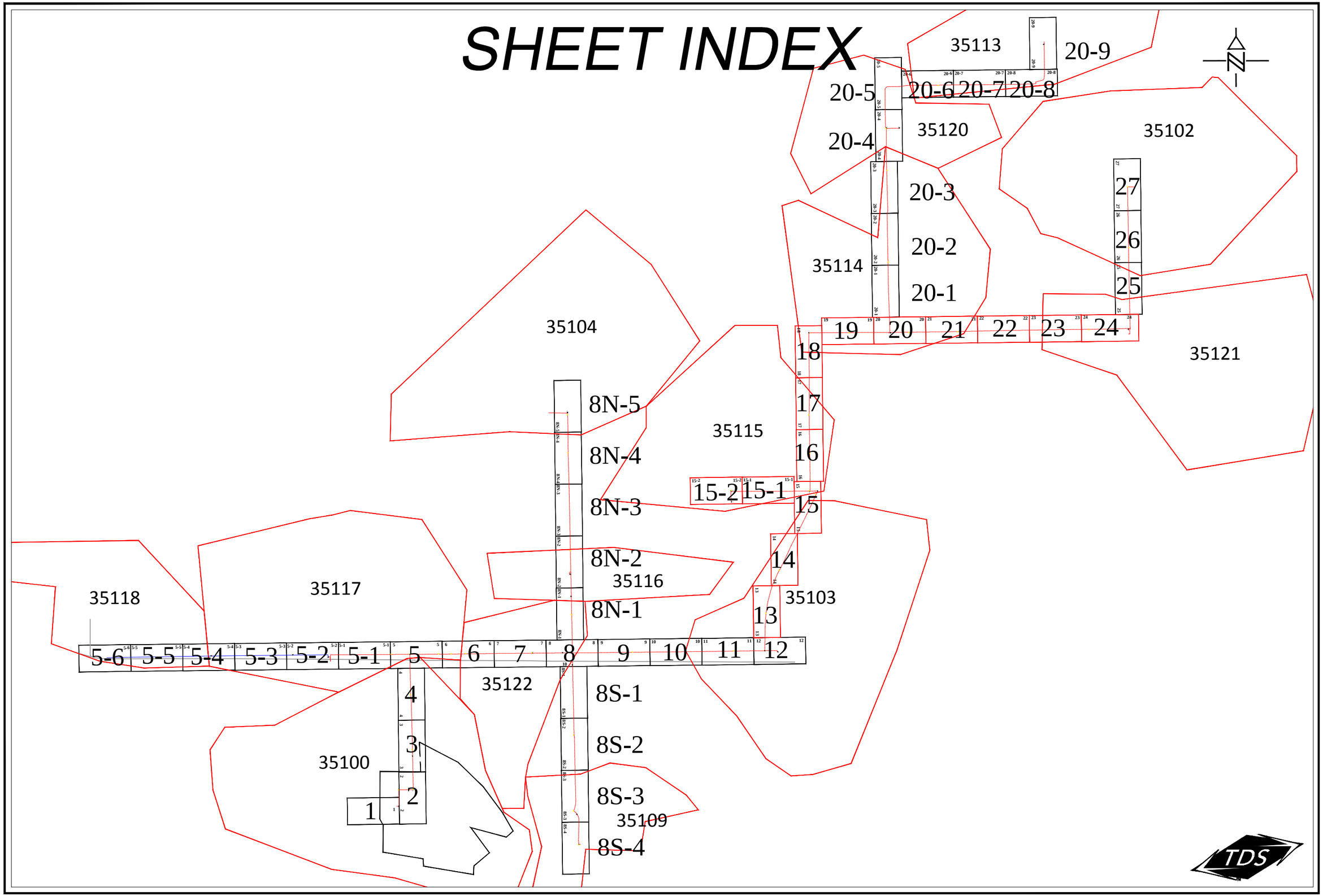
| NEPA | CEQA | How Addressed in IS/EA |
|---|---|---|
| **Alternatives** | | |
| Provided that there are no unresolved conflicts, alternatives do not need to be evaluated in an EA (with the exception of the No Action alternative). | An IS does not need to consider alternatives to the proposed project (except for the No Project) | The proposed project has no unresolved conflicts as defined by BIA's NEPA guidelines. Therefore, this IS/EA only evaluates the proposed project and a No Project alternative. |

# Appendix B
## Project Plans

# LOCATION MAP

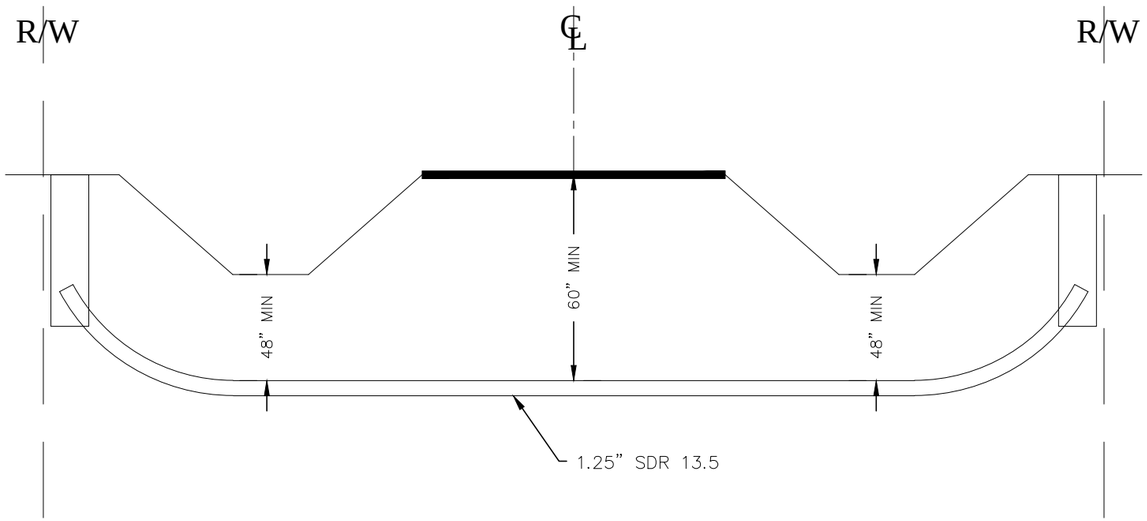


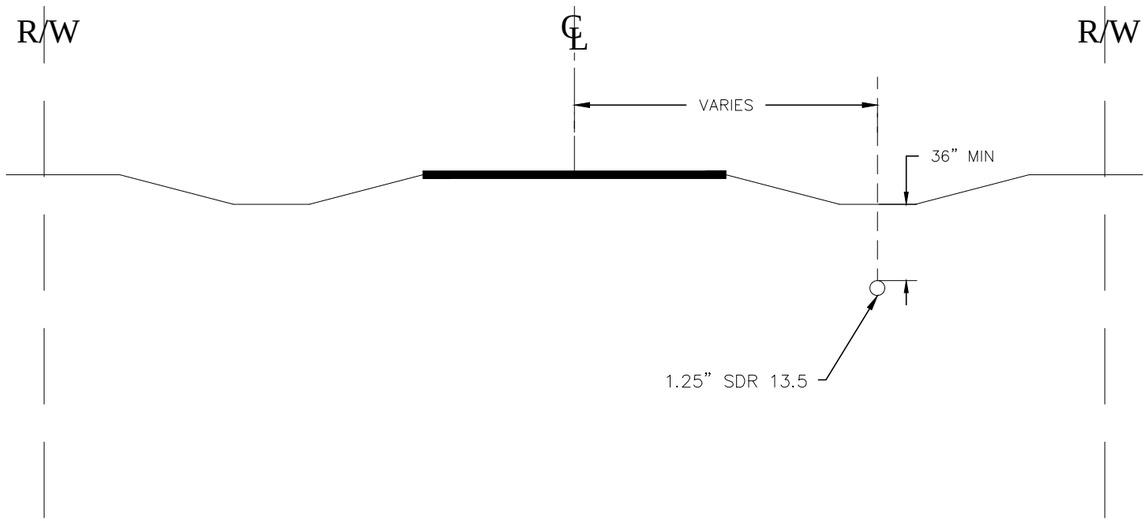
# SHEET INDEX


35113
20-9
20-5
20-6
20-7
20-8
20-4
35120
35102
20-3
27
20-2
26
35114
20-1
25
35104
19
20
21
22
23
24
18
35121
8N-5
17
35115
8N-4
16
15-2
15-1
8N-3
15
8N-2
14
35116
35118
35117
35103
8N-1
13
5-6
5-5
5-4
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5-1
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11
12
35122
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8S-1
3
8S-2
35100
2
8S-3
1
35109
8S-4

PROJECT NO. 23325 TEL. CO. TDS EXCHANGE ALL SERVING AREA ALL ROUTE ALL

# TYPICAL SECTIONS




## TYPICAL BORE PROFILE

**NOTES:**

1. Crossing will be made utilizing directional bore methodology.
2. Depth to top of duct will be a minimum of forty-eight inches (48") below bottom of ditch
3. Depth to top of duct will be a minimum of sixty inches (60") below hard road surface, bottom of waterway or irrigation ditch.
4. Entry and Exit locations on each side of roadway will be dug down to depth of running line as required and care will be taken to return pits to original or better condition.

## TYPICAL PARALLEL PROFILE

**NOTES:**

1. Minimum depth from ground to top of duct will be 36"
2. Placement shall be by directional bore, plow or trench methodology
3. When trenching or plowing, warning tape shall be placed 12" above top of duct
4. Running line shown on sheets subject to change due to location of existing utilities

NOT TO SCALE

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 3'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE DA
SHEET 1 OF 27
EX. ROUTE DA
MAP REF. 351002
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 0+00 | CO | | | | | | | | |
| | | | | | | | | | |
| 0+64 | MH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOIE (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| 100 | | | | | |
| | 64 | | | | |
| | | | | | |
| 100 | 64 | | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 21 | BM 53 | BM 61D | | | | | | | CUST NO. | | HBFO (96) | | HO1 | | | W UM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | | | | | | | | | | 1 | | 96 | | | 1 |
| | | | | | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | 1 | | 96 | | | 1 |

| PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351 |
|---|---|---|




**RUNNING LINE = 3'- 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

| ROUTE DA |
|---|
| SHEET 2 OF 27 |
| EX. ROUTE DA |
| MAP REF. 351002 |
| COUNTY: IMPERIAL |
| TOWNSHIP: |
| TAX DISTRICT: |
| MUNICIPALITY: WINTERHAVEN |
| TWN/RGE 16S / 22E |
| SEC. 21 |
| STAKED BY FARR |
| DATE 01/14 |
| DRAFTED BY FARR |
| DATE 10/14 |
| W.O. TC-CA351ENG-001 |
| REV |
| REV |
| REV |
| FILE: |

NOT TO SCALE

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 0+64 | SHT 1 | | | | | | | | |
| | | | | | | | | | |
| 6+34 | HH1 | BH2 | | | | | | | |
| | | | | | | | | | |
| 11+12 | HH2 | BH2 | | | | | | | |
| | | | | | | | | | |
| 15+74 | Lateral | | | | | | | | |
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| TOTAL | | 2 | | | | | | | |

## CABLE

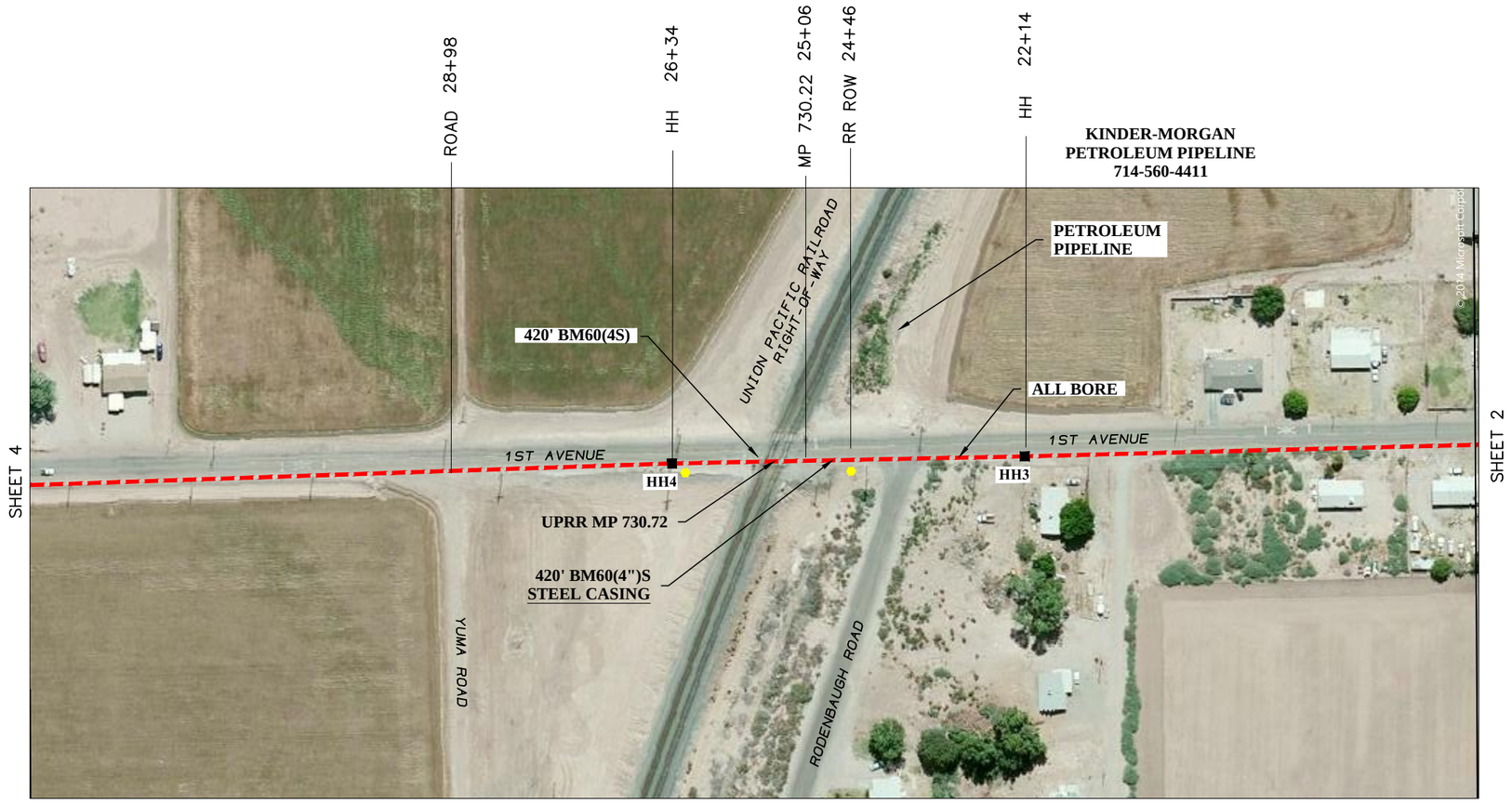
| BFO (24) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 610 | 610 | | | |
| | | | | | |
| | 512 | 512 | | | |
| | | | | | |
| | 496 | 496 | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| | 1618 | 1618 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | 1 | 610 | | | | | | | |
| | | | | | | | | | |
| | 1 | 512 | | | | | | | |
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| | | 496 | | | | | | | |
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| | 2 | 1618 | | | | | | | |

| CUST NO. | | | | | | | | |
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

*SEE RAILROAD PERMIT
EXHIBIT FOR DETAIL
FROM HH3 TO HH4

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE HA

SHEET 3 OF 27

EX. ROUTE HA

MAP REF. 351011/351009

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: WINTERHAVEN

TWN/RGE 16S / 22E

SEC. 21

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 15+74 | SHT 2 | | | | | | | | |
| 22+14 | HH3 | BH2 / BD3 | | | | | | | |
| 26+34 | HH4 | BH2 / BD3 | | | | | | | |
| 28+98 | ROAD | | | | | | | | |
| TOTAL | | 2 / 2 | | | | | | | |

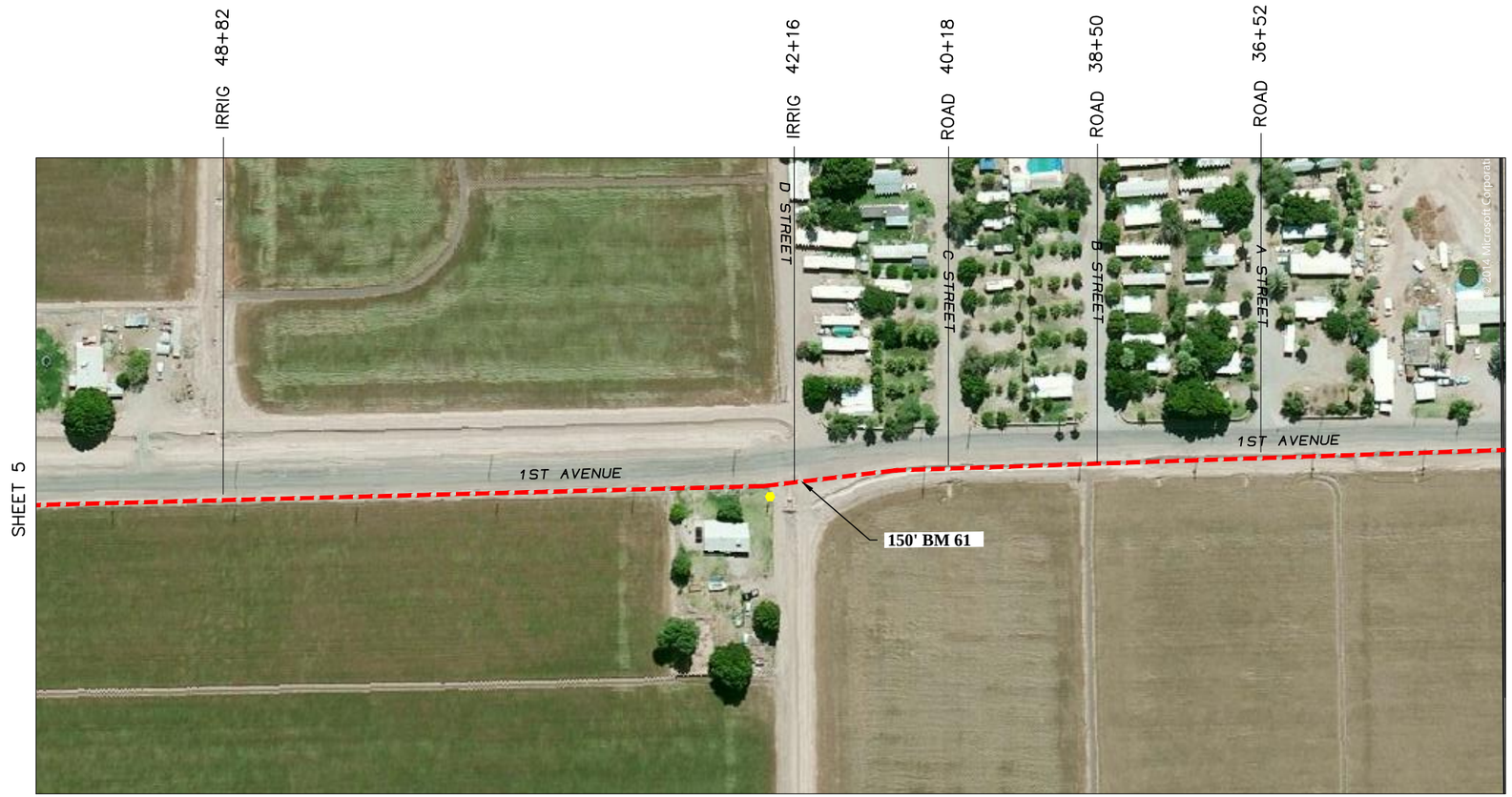
## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| 100 | 680 | 680 | | | |
| | | | | | |
| 100 | 454 | 454 | | | |
| | | | | | |
| | 292 | 292 | | | |
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| | | | | | |
| | | | | | |
| 200 | 1426 | 1426 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 55F | BM 61 | BM 60(4")S | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| 1 | | 680 | | | | | | | | |
| | | | | | | | | | | |
| 1 | 2 | | 420 | | | | | | | |
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| | | | | | | | | | | |
| 2 | 2 | 680 | 420 | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE HA

SHEET 4 OF 27

EX. ROUTE HA

MAP REF. 351009/351027

COUNTY:
IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY:
WINTERHAVEN

TWN/RGE 16S / 22E

SEC. 21

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 28+98 | SHT 3 | | | | | | | | |
| | | | | | | | | | |
| 42+16 | IRRIG | | | | | | | | |
| | | | | | | | | | |
| 48+82 | IRRIG | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1358 | 1358 | | | |
| | | | | | |
| | 706 | 706 | | | |
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| | | | | | |
| | | | | | |
| | 2064 | 2064 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
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| | 1 | 150 | | | | | | | |
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| | 1 | 150 | | | | | | | |

| CUST NO. | | | | | | | | |
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




SHEET 4

**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

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ROUTE HA/HC
SHEET 5 OF 27
EX. ROUTE HA/HC
MAP REF. 351027
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 48+82 | SHT 4 | | | | | | | | |
| | | | | | | | | | |
| 55+84 | HH6 | BH4 / BD3 | | | | | | | |
| | | | | | | | | | |
| 56+52 | IRRIG | | | | | | | | |
| | | | | | | | | | |
| 65+20 | PP | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 62+36 | IRRIG | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| TOTAL | | 1 / 1 | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 50 | 734 | 734 | | | |
| | | | | | |
| 50 | 82 | 82 | | | |
| | | | | | |
| | 894 | 894 | | | |
| | | | | | |
| | | | | | |
| | 672 | 672 | | | |
| | | | | | |
| | | | | | |
| 100 | 2382 | 2382 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | HBFO (96) | HO1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 1 | 1 | 180 | | | | | | | | | | | 1 | 12 | | | |
| | | | | | | | | | | | | | | | | | |
| | | 160 | | | | | | | | | | | | | | | |
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| | 1 | 140 | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |
| 1 | 3 | 480 | | | | | | | | | | | 1 | 12 | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

| | |
|---|---|
| ROUTE | HA |
| SHEET | 5-1 OF 27 |
| EX. ROUTE | HA |
| MAP REF. | 351023 |
| COUNTY: | IMPERIAL |
| TOWNSHIP: | |
| TAX DISTRICT: | |
| MUNICIPALITY: | WINTERHAVEN |
| TWN/RGE | 16S / 22E |
| SEC. | 21 |
| STAKED BY | FARR |
| DATE | 01/14 |
| DRAFTED BY | FARR |
| DATE | 10/14 |
| W.O. | TC-CA351ENG-001 |
| REV | |
| REV | |
| REV | |
| FILE: | |

NOT TO SCALE

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TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 62+36 | SHT 5 | | | | | | | | |
| | | | | | | | | | |
| 75+46 | IRRIG | | | | | | | | |
| | | | | | | | | | |
| 80+10 | MATCH | | | | | | | | |
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| | | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | 1830 | 1830 | | | |
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| | | | | | |
| | 1830 | 1830 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
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| | | 160 | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

| | |
|---|---|
| ROUTE | HA |
| SHEET | 5-2 OF 27 |
| EX. ROUTE | HA |
| MAP REF. | 351023 |
| COUNTY: | IMPERIAL |
| TOWNSHIP: | |
| TAX DISTRICT: | |
| MUNICIPALITY: | WINTERHAVEN |
| TWN/RGE | 16S / 22E |
| SEC. | 21 |
| STAKED BY | FARR |
| DATE | 01/14 |
| DRAFTED BY | FARR |
| DATE | 10/14 |
| W.O. | TC-CA351ENG-001 |
| REV | |
| REV | |
| REV | |
| FILE: | |

N

NOT TO SCALE

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TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 80+10 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 82+54 | ROAD | | | | | | | | |
| | | | | | | | | | |
| 82+54 | DSA | | | | | | | | |
| | | | | | | | | | |
| 82+58 | PH2A3 | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFC 100-24 | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| 50 | 540 | 540 | | | |
| | | | | | |
| | | | 300 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 50 | 540 | 540 | 300 | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 2C | BM 20 | BM 53 | BM 61D | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | 1 | 100 | | | | | |
| | | | | | | | | | |
| | | 1 | | 230 | | | | | |
| | | | | | | | | | |
| | 1 | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | 1 | 1 | 1 | 330 | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | HC1 | | W BD |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | 6 | 100 | | |
| | | | | | | | |
| | | | | | 100 | | 1 |
| | | | | | | | |
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| | | | | | | | |
| | | | | | | | |
| | | | 1 | 6 | 200 | | 1 |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




| | |
|---|---|
| ROUTE | HA |
| SHEET | 5-3 OF 27 |
| EX. ROUTE | HA |
| MAP REF. | 351023 |
| COUNTY: | IMPERIAL |
| TOWNSHIP: | |
| TAX DISTRICT: | |
| MUNICIPALITY: | WINTERHAVEN |
| TWN/RGE | 16S / 22E |
| SEC. | 21 |
| STAKED BY | FARR |
| DATE | 01/14 |
| DRAFTED BY | FARR |
| DATE | 10/14 |
| W.O. | TC-CA351ENG-001 |
| REV | |
| REV | |
| REV | |
| FILE: | |

NOT TO SCALE

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
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| | | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
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## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

ROUTE HA

SHEET 5-4 OF 27

EX. ROUTE HA

MAP REF. 351023

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: WINTERHAVEN

TWN/RGE 16S / 22E

SEC. 21

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV

REV

REV

FILE:




NOT TO SCALE

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

811 Know what's below. Call 811 before you dig.

TDS

| POLES / PEDS | | | | | | | | | | CABLE | | | | | | POLE LINE & PED HARDWARE | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| POLE/ PED NO. | | BD / HA | BG / PG | LEAD | POLE LENGTH CLASS | YEAR | | JOINT | | BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | | BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | | | | | | | |
| TEL CO. | FOR CO. | | | ANGLE | | SET | REM | % | W/ | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| TOTAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

ROUTE HA

SHEET 5-5 OF 27

EX. ROUTE HA

MAP REF. 351023

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT: ????

MUNICIPALITY: WINTERHAVEN

TWN/RGE 16S / 22E

SEC. 21

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

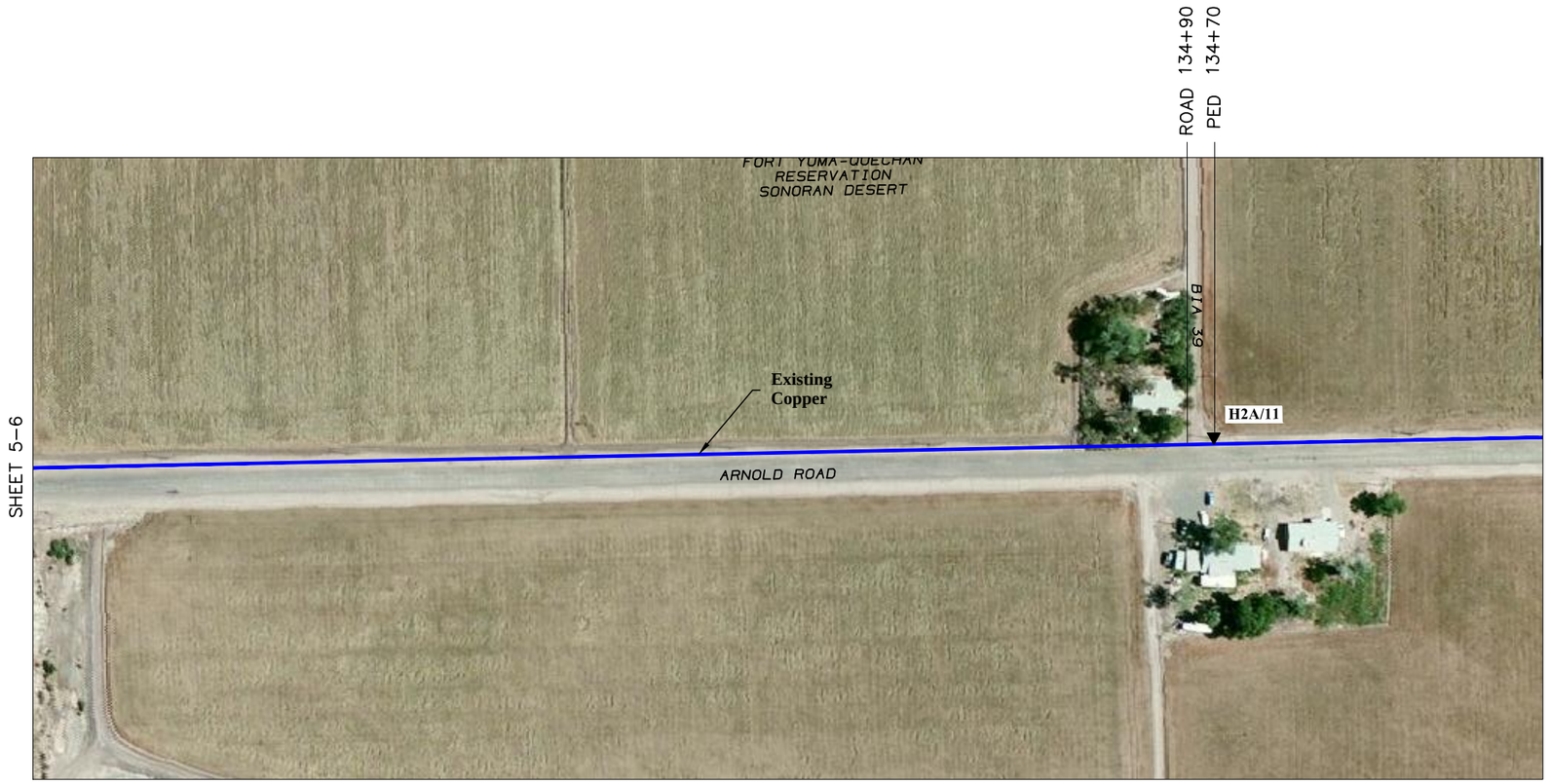
W.O. TC-CA351ENG-001

REV

REV

REV

FILE:




NOT TO SCALE

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

811 Know what's below. Call 811 before you dig.

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
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## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




ROUTE HA

SHEET 5-6 OF 27

EX. ROUTE HA

MAP REF. 351023

COUNTY:
IMPERIAL

TOWNSHIP:

TAX DISTRICT:
????

MUNICIPALITY:
WINTERHAVEN

TWN/RGE 16S / 22E

SEC. 21

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV

REV

REV

FILE:

NOT TO SCALE

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEPLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 155+98 | DSA | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | BM 20 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | | | | | |
| | | | 1 | | | | | | |

| CUST NO. | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE HC/AL
SHEET 6 OF 27
EX. ROUTE HC/AL
MAP REF. 351027
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 55+84 | HH6 | | | | | | | | |
| | | | | | | | | | |
| 84+00 | MATCH | | | | | | | | |
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| | | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 2900 | 2900 | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | 2900 | 2900 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | 2 | 1160 | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |
| | 2 | 1160 | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AL
SHEET 7 OF 27
EX. ROUTE AL
MAP REF. 351027
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 84+00 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 90+02 | IRRIG | | | | | | | | |
| | | | | | | | | | |
| 95+94 | IRRIG | | | | | | | | |
| | | | | | | | | | |
| 100+55 | MATCH | | | | | | | | |
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| | | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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| | | | | | |
| | 1704 | 1704 | | | |
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| | | | | | |
| | | | | | |
| | 1704 | 1704 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | 180 | | | | | | | | |
| | | | | | | | | | | |
| | 1 | 180 | | | | | | | | |
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| | | | | | | | | | | |
| | 1 | 360 | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AL
SHEET 8 OF 27
EX. ROUTE AL
MAP REF. 351027
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 100+55 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 109+42 | HH | BH4 / BD3 | | | | | | | |
| 111+26 | DSA | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 114+96 | PA3J1 | | | | | | | | |
| | | | | | | | | | |
| 109+68 | ROAD | | | | | | | | |
| | | | | | | | | | |
| 117+76 | MATCH | | | | | | | | |
| | | | | | | | | | |
| TOTAL | | 1 / 1 | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFOV (3)(1.25) | BFC 400–24 | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 100 / 50 | 914 | 914 | | | |
| 50/50/50 | 190 | | 190 | | |
| | 190 | | | | |
| | 190 | | | | |
| | | | | 250 | |
| | | | | | |
| | 860 | 860 | | | |
| | | | | | |
| 300 | 2344 | 1774 | 190 | 250 | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 2C | BM 20 | BM 53 | BM 61D | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 170 | | | | | |
| | | | | | | | | | |
| 1 | | | 1 | | | | | | |
| | | 1 | | | | | | | |
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| | | | | | | | | | |
| | 1 | | | | | | | | |
| | | | | | | | | | |
| | | | | 80 | | | | | |
| | | | | | | | | | |
| | | | | 200 | | | | | |
| | | | | | | | | | |
| 1 | 1 | 1 | 1 | 630 | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | HC1 | | W BD |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | 72 | 400 | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | 400 | | 1 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | 72 | 800 | | 1 |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

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ROUTE AJ
SHEET 8N-1 OF 27
EX. ROUTE AJ
MAP REF. 351027
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 109+42 | (HH) | | | | | | | | |
| | | | | | | | | | |
| 130+50 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

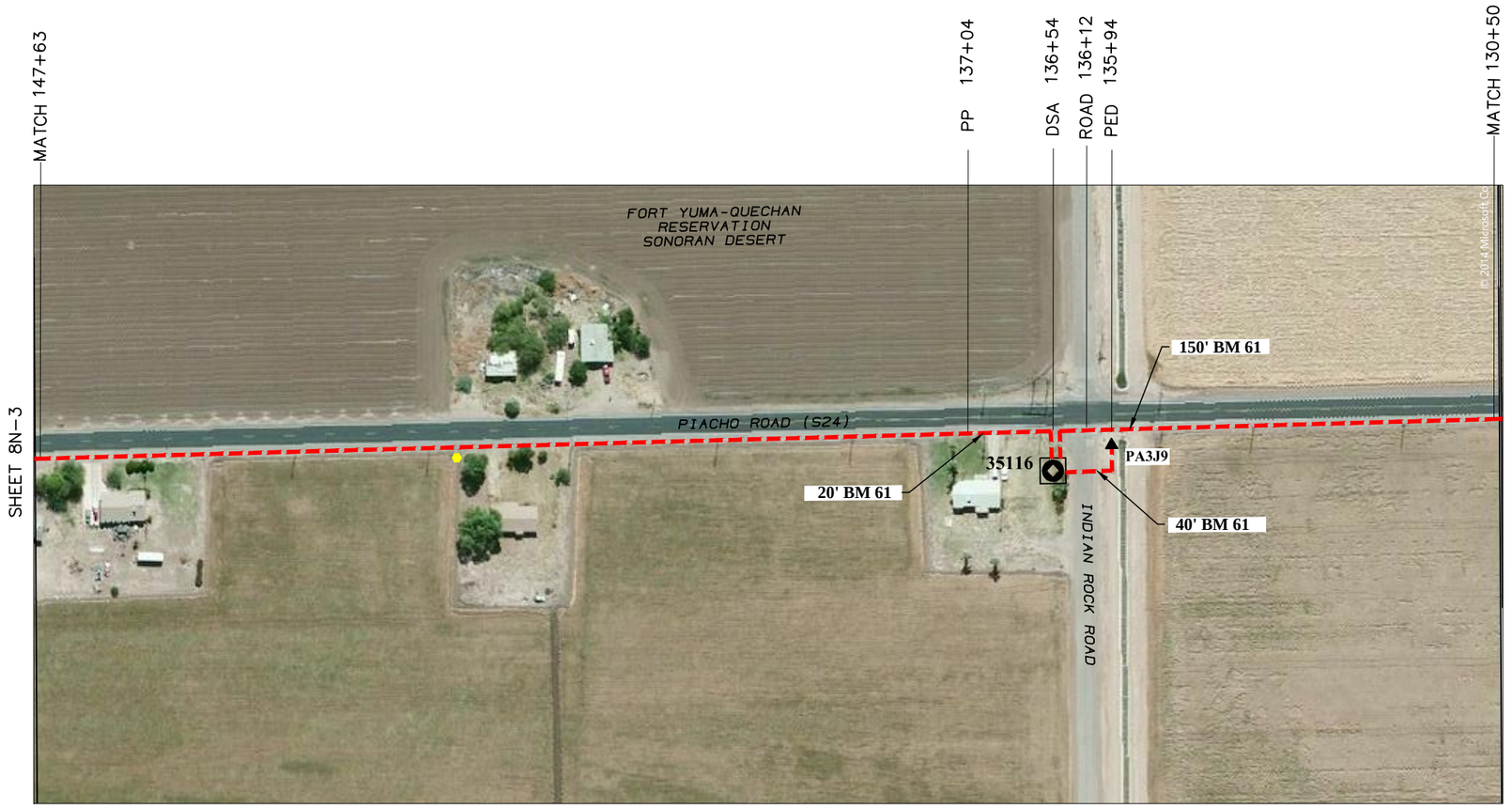
## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 2172 | 2172 | | | |
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| | | | | | |
| | | | | | |
| | 2172 | 2172 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | BM 73 | | | | | | | CUST NO. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| | 1 | | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AJ
SHEET 8N-2 OF 27
EX. ROUTE AJ
MAP REF. 351027
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 130+50 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 136+54 | DSA | | | | | | | | |
| 135+94 | PED | | | | | | | | |
| | | | | | | | | | |
| 137+04 | PP | | | | | | | | |
| | | | | | | | | | |
| 147+63 | MATCH | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFOV (2)(1.25) | BFC 100-24 | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 50 / 50 | 660 | 660 | | | |
| | | | | 120 | |
| | | | | | |
| | 120 | | 120 | | |
| | | | | | |
| | 1090 | 1090 | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 100 | 1870 | 1750 | 120 | 120 | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 2C | BM 20 | BM 53 | BM 61D | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 150 | | | | | |
| | | | | | | | | | |
| | | 1 | | | | | | | |
| | 1 | | | 40 | | | | | |
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| | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AJ
SHEET 8N-3 OF 27
EX. ROUTE AJ
MAP REF. 351026
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 147+63 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 164+46 | MATCH | | | | | | | | |
| | | | | | | | | | |
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| TOTAL | | | | | | | | | |

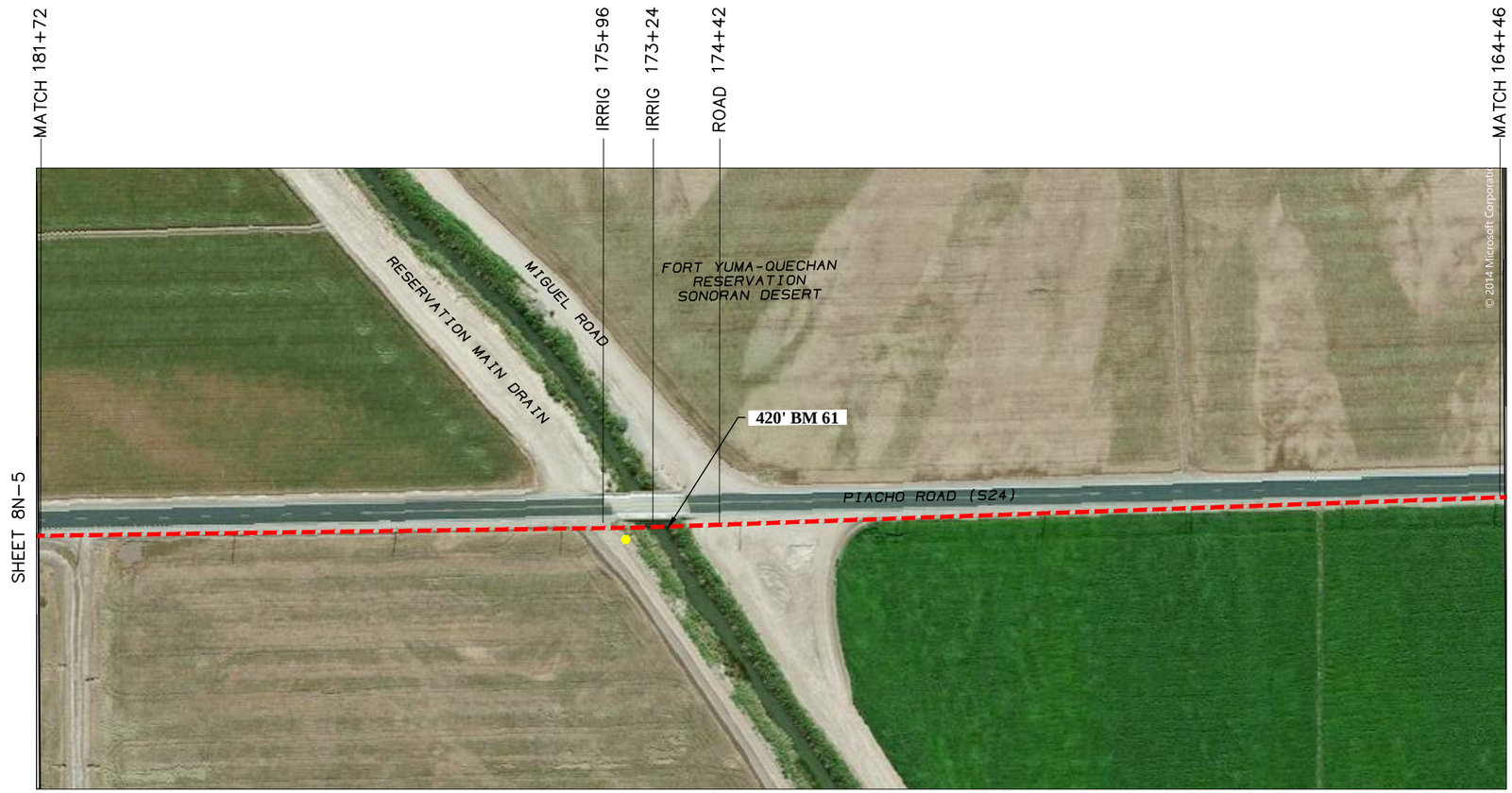
## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1734 | 1734 | | | |
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| | | | | | |
| | | | | | |
| | 1734 | 1734 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | 150 | | | | | | | | |
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| | | | | | | | | | | |
| | | 150 | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

NOT TO SCALE

TDS

ROUTE AJ
SHEET 8N-4 OF 27
EX. ROUTE AJ
MAP REF. 351026
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 164+46 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 181+72 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1780 | 1780 | | | |
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| | | | | | |
| | 1780 | 1780 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | 1 | 420 | | | | | | | | | | | | | | | |
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| | 1 | 420 | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AJ/AK
SHEET 8N-5 OF 27
EX. ROUTE AJ/AK
MAP REF. 351026
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 181+72 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 188+75 | ROAD | | | | | | | | |
| | | | | | | | | | |
| 189+00 | PED | | | | | | | | |
| | | | | | | | | | |
| 196+50 | DSA | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFC 100–24 | | |
|---|---|---|---|---|---|
| | | | | | |
| | 724 | 724 | | | |
| | | | | | |
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| | | | | | |
| 50 | 800 | 800 | 840 | | |
| | | | | | |
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| | | | | | |
| 50 | 1524 | 1524 | 840 | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 2C | BM 20 | BM 53F | BM 61D | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | 1 | 190 | | | | | |
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| | 1 | | | | | | | | |
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| | | 1 | | | | | | | |
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| | | | | | | | | | |
| | 1 | 1 | 1 | 190 | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | HC1 | | W BD |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | 100 | | 1 |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | 6 | 100 | | |
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| | | | | | | | |
| | | | 1 | 6 | 200 | | 1 |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

ROUTE AA

SHEET 8S-1 OF 27

EX. ROUTE AA

MAP REF. 351010

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: WINTERHAVEN

TWN/RGE 16S / 22E

SEC. 21

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

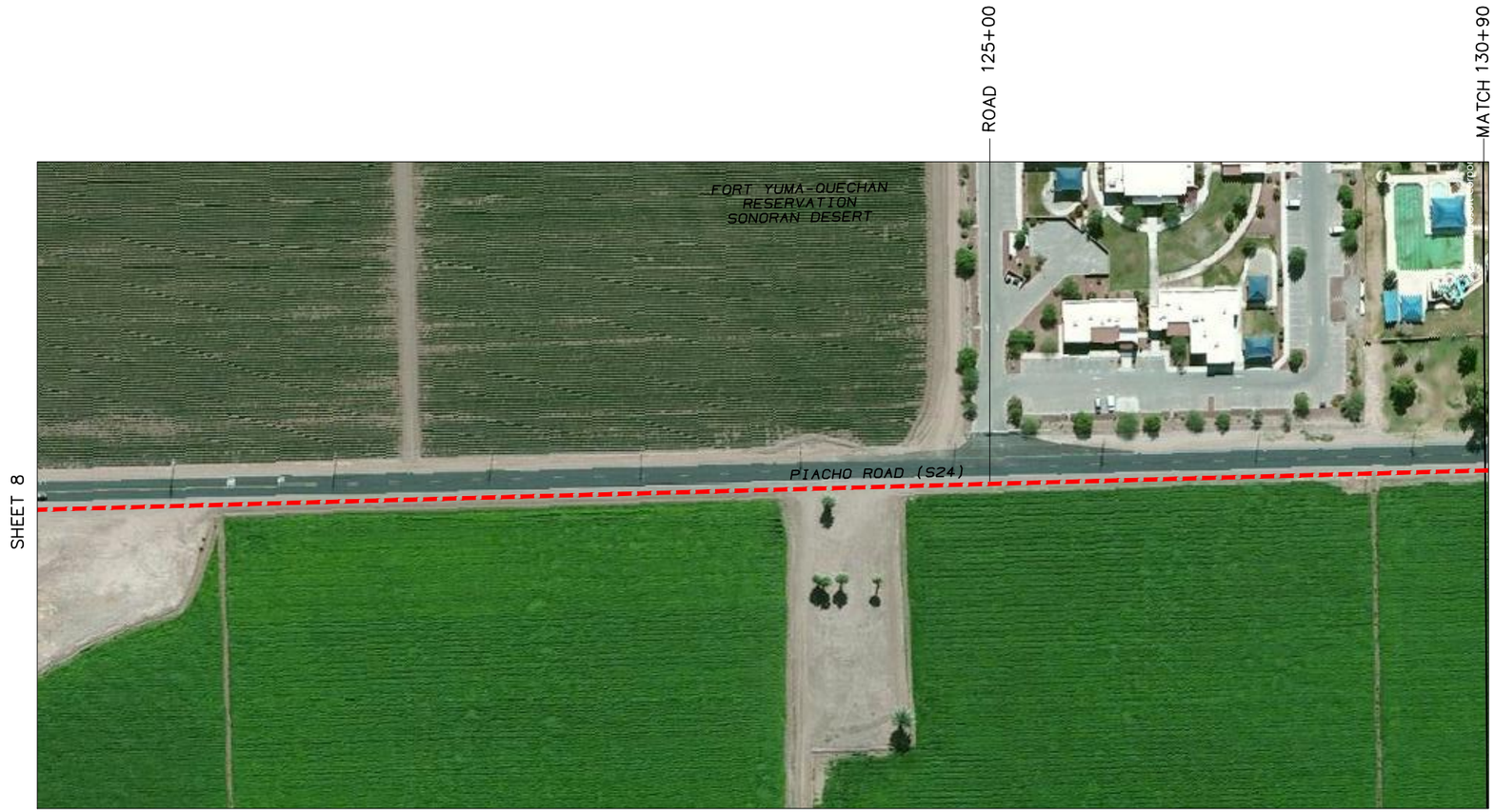
W.O. TC-CA351ENG-001

REV

REV

REV

FILE:




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

NOT TO SCALE

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

811 Know what's below. Call 811 before you dig.

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 111+26 | (DSA) | | | | | | | | |
| | | | | | | | | | |
| 130+90 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 2022 | 2022 | | | |
| | | | | | |
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| | | | | | |
| | 2022 | 2022 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

NOT TO SCALE

TDS

ROUTE AA/09-1000
SHEET 8S-2 OF 27
EX. ROUTE AA/09-1000
MAP REF. 351012
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 130+90 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 146+88 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

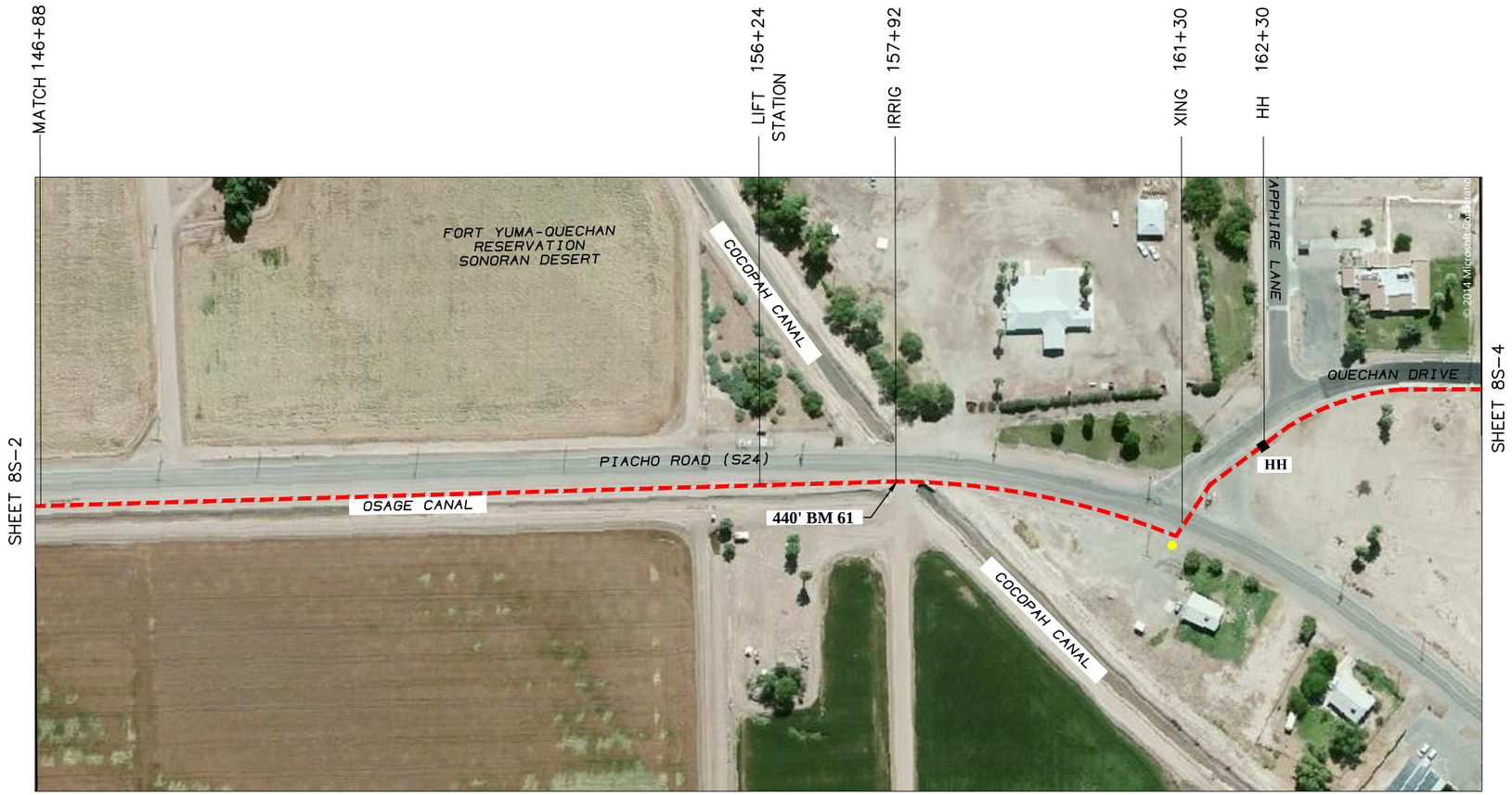
| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1646 | 1646 | | | |
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| | | | | | |
| | 1646 | 1646 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
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| CUST NO. | | | | | | | | |
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE 09-1000
SHEET 8S-3 OF 27
EX. ROUTE 09-1000
MAP REF. 351006
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 146+88 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 162+30 | HH | BH2 / BD3 | | | | | | | |
| TOTAL | | 1 / 1 | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 100 | 1590 | 1590 | | | |
| 100 | 1590 | 1590 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| 1 | 1 | 440 | | | | | | | |
| 1 | 1 | 440 | | | | | | | |

| CUST NO. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 2'**
**FROM BACK OF WALK**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE 09-1000
SHEET 8S-4 OF 27
EX. ROUTE 09-1000
MAP REF. 351006
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 162+30 | (HH) | | | | | | | | |
| | | | | | | | | | |
| 162+30 | HH | BH4 | | | | | | | |
| | | | | | | | | | |
| DSA | | | | | | | | | |
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| TOTAL | | 1 | | | | | | | |

## CABLE

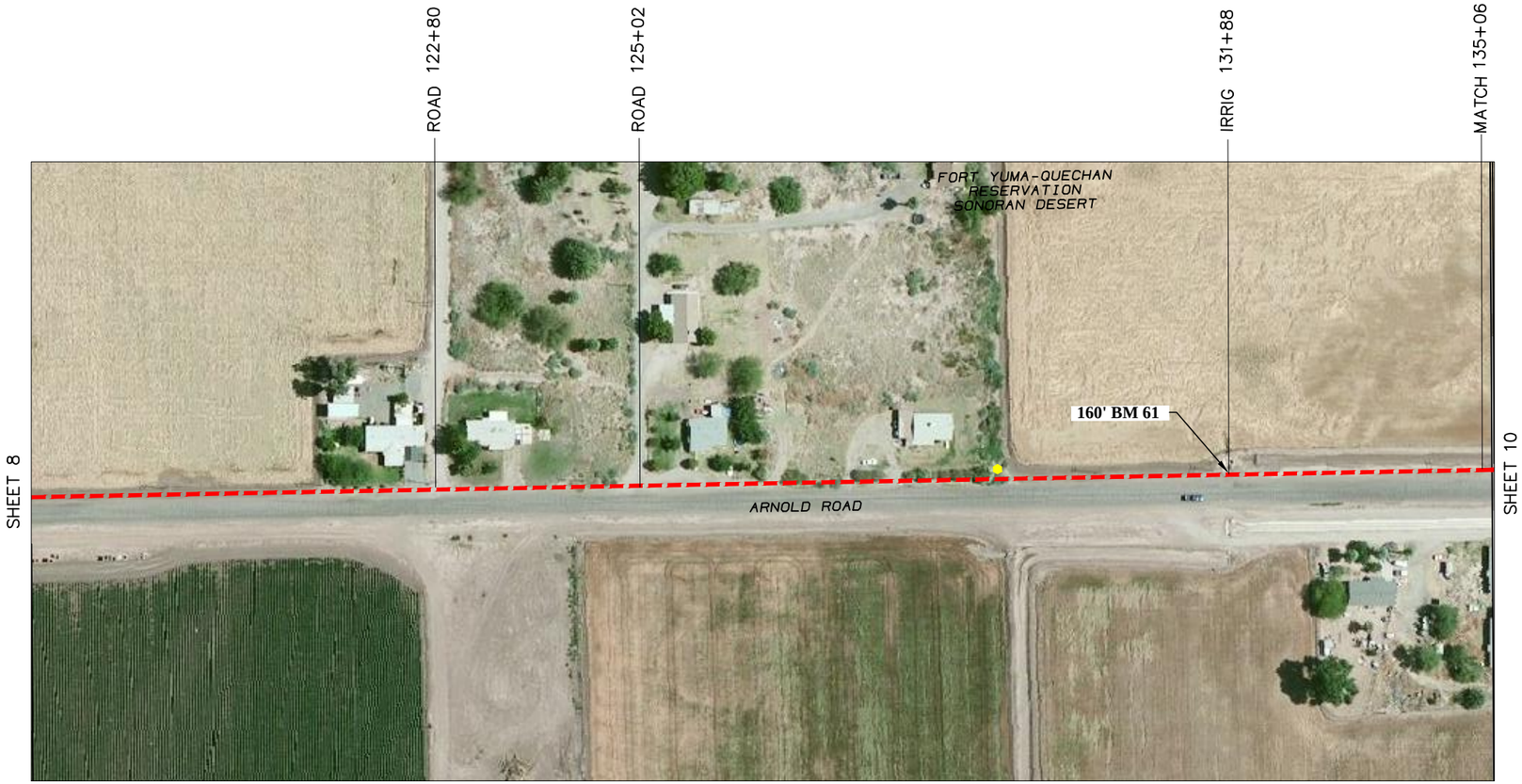
| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFOV (2)(2) | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 50 | 1188 | 1188 | | | |
| | | | | | |
| 50 | 60 | 60 | 60 | | |
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| | | | | | |
| 100 | 1248 | 1248 | 60 | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 20 | BM 53 | BM 61D | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | 1 | 100 | | | | | | |
| | 1 | | 60 | | | | | | |
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| | 1 | 1 | 160 | | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | | | |
|---|---|---|---|---|---|---|---|
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| | | | 1 | 6 | | | |
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| | | | | | | | |
| | | | | | | | |
| | | | 1 | 6 | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AA
SHEET 9 OF 27
EX. ROUTE AA
MAP REF. 351027
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 109+42 | (HH) | | | | | | | | |
| | | | | | | | | | |
| 135+06 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 2640 | 2640 | | | |
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| | | | | | |
| | | | | | |
| | 2640 | 2640 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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| | 1 | 160 | | | | | | | | |
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| | | | | | | | | | | |
| | 1 | 160 | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AA
SHEET 10 OF 27
EX. ROUTE AA
MAP REF. 351031
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 21
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 135+06 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 152+04 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

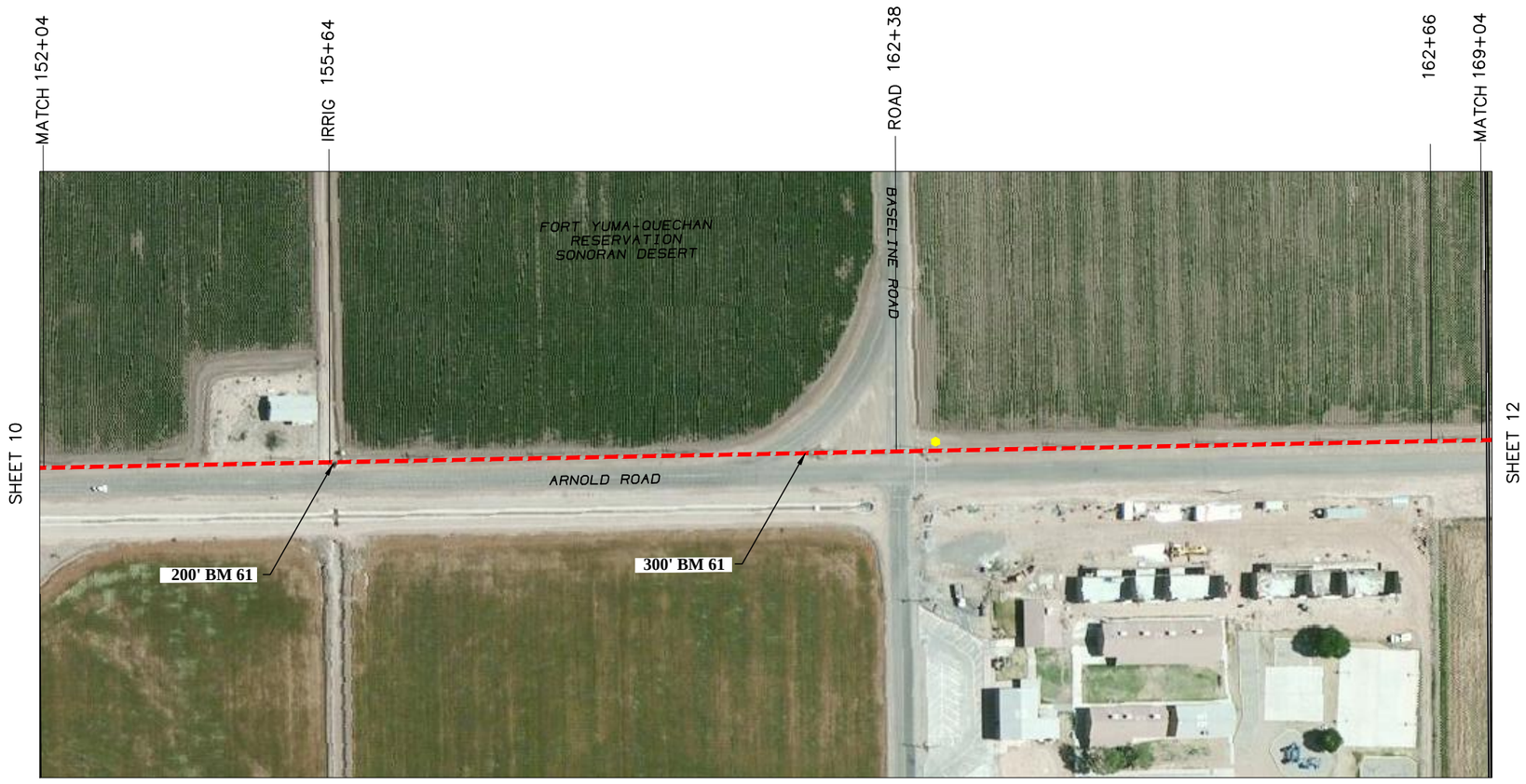
| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1748 | 1748 | | | |
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| | | | | | |
| | 1748 | 1748 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | 160 | | | | | | | |
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| | | | | | | | | | |
| | | 160 | | | | | | | |

CUST NO.

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AA
SHEET 11 OF 27
EX. ROUTE AA
MAP REF. 351031
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E & 23E
SEC. 24/19
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 152+04 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 169+04 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1752 | 1752 | | | |
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| | | | | | |
| | | | | | |
| | 1752 | 1752 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | HBFO (96) | HO1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | 200 | | | | | | | | | | | | | | | |
| | 1 | 300 | | | | | | | | | | | | | | | |
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| | 1 | 500 | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE:**
**Arnold Road = 6' FROM EDGE PVMT**
**Cocopah Road = 3' East of Power Poles**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AA
SHEET 12 OF 27
EX. ROUTE AA
MAP REF. 351048
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 23E
SEC. 19
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 169+04 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 172+80 | HH 8 | BH4 / BD3 | | | | | | | |
| | | | | | | | | | |
| 177+24 | DSA | | | | | | | | |
| | | | | | | | | | |
| 177+34 | EX. DSA | | | | | | | | |
| | | | | | | | | | |
| 177+19 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| TOTAL | | 1 / 1 | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| 50/50/50 | 390 | 390 | | | |
| | | | | | |
| 50 | 520 | 520 | | | |
| | | | | | |
| | | 12 | | | |
| | | | | | |
| | 452 | 152 | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 200 | 1362 | 1362 | | | |

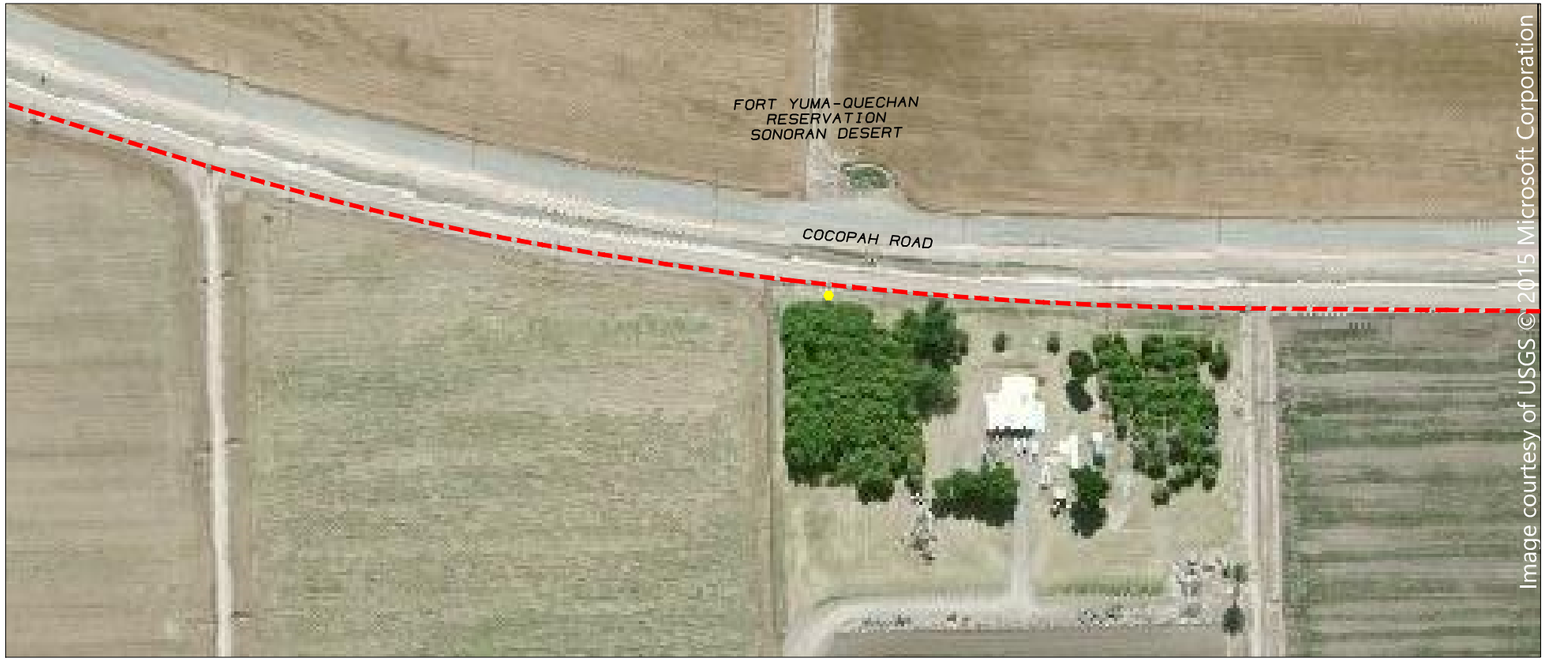
## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 20 | BM 53 | BM 61D | | | | | | | CUST NO. | | | HBFO (96) | HO1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 160 | | | | | | | | | | 1 | 6 | | | |
| 1 | | 1 | | | | | | | | | | | | | | | |
| | 1 | | 50 | | | | | | | | | | 1 | 6 | | | |
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| 1 | 1 | 1 | 210 | | | | | | | | | | 2 | 8 | | | |

| PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351 |
|---|---|---|

MATCH 194+60

SHEET 14




MATCH 177+19

SHEET 12

**RUNNING LINE = 3' EAST OF POWER POLES**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

| ROUTE AA |
|---|
| SHEET 13 OF 27 |
| EX. ROUTE AA |
| MAP REF. 351031 |
| COUNTY: IMPERIAL |
| TOWNSHIP: |
| TAX DISTRICT: |
| MUNICIPALITY: WINTERHAVEN |
| TWN/RGE 16S / 23E |
| SEC. 19 |
| STAKED BY FARR |
| DATE 01/14 |
| DRAFTED BY FARR |
| DATE 10/14 |
| W.O. TC-CA351ENG-001 |
| REV 02/15 |
| REV |
| REV |
| FILE: |

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 177+19 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 194+60 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1796 | 1796 | | | |
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| | | | | | |
| | | | | | |
| | 1796 | 1796 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| CUST NO. | | | | | | | | |
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 213+69

SHEET 15




MATCH 194+60

SHEET 13

Image courtesy of USGS © 2015 Microsoft

**RUNNING LINE = 3' EAST OF POWER POLES**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AA
SHEET 14 OF 27
EX. ROUTE AA
MAP REF. 351031
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 23E
SEC. 19
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 194+60 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 213+69 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1970 | 1970 | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | 1970 | 1970 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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| | 1 | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 235+08 | HH9 229+21 | BORE 228+87 | BORE 215+96 | MATCH 213+69




231+92 HH10

236+94 MATCH

SHEET 15–1

Know what's below. Call 811 before you dig.

**RUNNING LINE:**
**COCOPAH ROAD = 3' EAST OF POWER POLES**
**HAUGHTELIN ROAD = 3' SOUTH OF POWER POLES**
**PEREZ ROAD = 3' EAST OF POWER POLES**
**MIN DEPTH= 36"**

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AA
SHEET 15 OF 27
EX. ROUTE AA
MAP REF. 351030
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 23E
SEC. 18
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 231+69 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 229+21 | HH9 | BH4 / BD3 | | | | | | | |
| | | | | | | | | | |
| 231+92 | HH10 | BH4 / BD3 | | | | | | | |
| | | | | | | | | | |
| 235+08 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 236+94 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| TOTAL | | 2 / 2 | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| 100 | 1600 | 1600 | | | |
| | | | | | |
| 100/50 | 280 | 280 | | | |
| | | | | | |
| | 330 | 330 | | | |
| | | | | | |
| | 520 | 520 | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 250 | 2730 | 2730 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | HBFO (96) | HO1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 80 | | | | | | | | | | | | | | | |
| 1 | 1 | 80 | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 1 | 1 | | | | | | | | | | | | 1 | 6 | | | |
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| 2 | 2 | 160 | | | | | | | | | | | 1 | 6 | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 236+94 | BORE IRR 245+00 | MATCH 236+94

SHEET 15-2 | SHEET 15




**RUNNING LINE:**
**3' SOUTH OF POWER POLES TO YARD,**
**THEN TRANSITION TO 3' NORTH OF IRRIGATION BERM**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AF
SHEET 15-1 OF 27
EX. ROUTE AF
MAP REF. 351030
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 23E
SEC. 18
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

N

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 236+94 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 254+07 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1800 | 1800 | | | |
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| | | | | | |
| | 1800 | 1800 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | HBFO (96) | HO1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
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| | | 80 | | | | | | | | | | | | | | | |
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| | | 80 | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

HH10–1 257+89

MATCH 254+07




SHEET 15–1

DSA 260+86

**RUNNING LINE:**
**HAUGHTELIN ROAD: 3' NORTH OF IRRIGATION BERM**
**BASELINE ROAD: 3' WEST OF POWER POLES**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE AA
SHEET 15-2 OF 27
EX. ROUTE AA
MAP REF. 351030
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 23E
SEC. 18
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 254+07 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 257+89 | HH10–1 | BH4 / BD3 | | | | | | | |
| | | | | | | | | | |
| 260+86 | DSA | | | | | | | | |
| | A5F7 | | | | | | | | |
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| TOTAL | | 1 / 1 | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFC 150–24 | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 100 | 440 | 440 | | | |
| | | | | | |
| 50 | 380 | 380 | | | |
| | | | 30 | | |
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| | | | | | |
| 150 | 820 | 820 | 30 | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 20 | BM 53 | BM 61D | | | | | | | CUST NO. | | | HBFO (96) | HO1 | HC1 | | WBD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| 1 | | 1 | | | | | | | | | | | | | | | |
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| | 1 | | 100 | | | | | | | | | | 1 | 6 | 150 | | |
| | | | | | | | | | | | | | | | 150 | | 1 |
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| 1 | 1 | 1 | 100 | | | | | | | | | | 1 | 6 | 300 | | 1 |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCCH 252+21

MATCCH 235+08

SHEET 17

SHEET 15




**RUNNING LINE = 3' EAST OF POWER POLES**
**MIN DEPTH= 36"**

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

Know what's below. Call 811 before you dig.

ROUTE N/A

SHEET 16 OF 27

EX. ROUTE N/A

MAP REF. 351030

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: WINTERHAVEN

TWN/RGE 16S / 23E

SEC. 18

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV 02/15

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 235+08 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 252+21 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1764 | 1764 | | | |
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| | 1764 | 1764 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| CUST NO. | | | | | | | |
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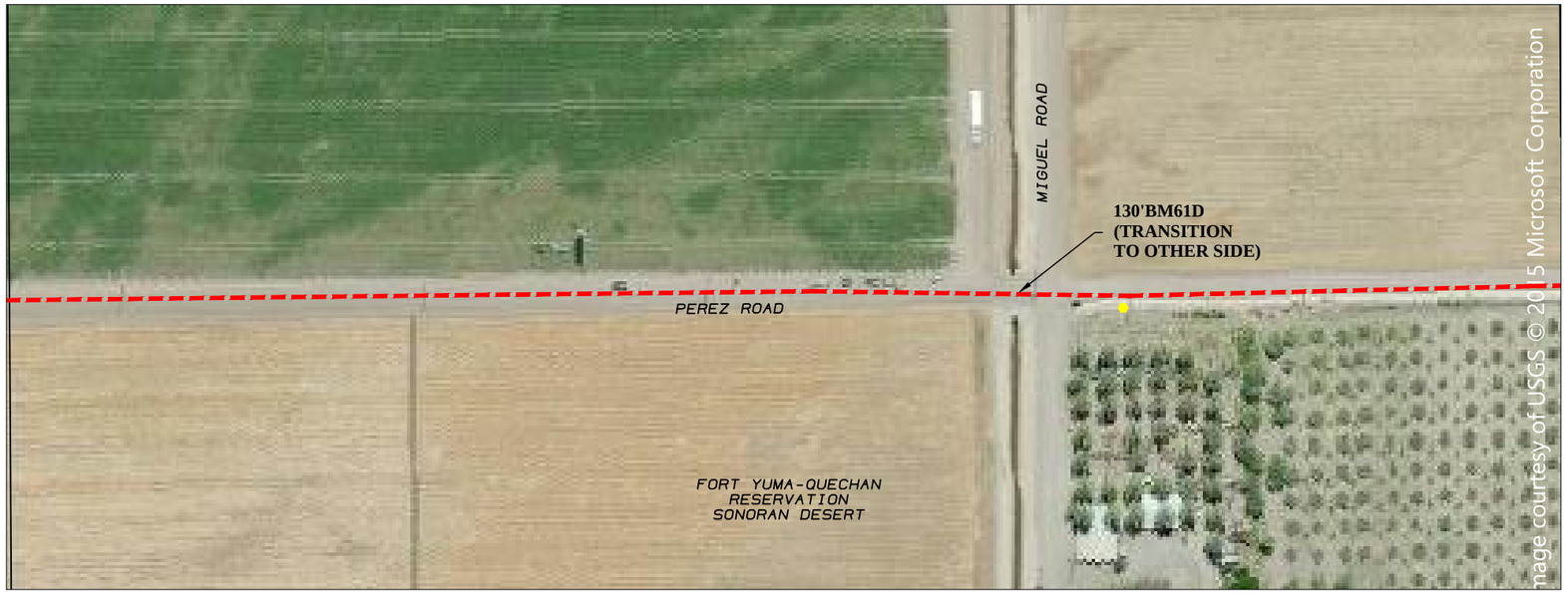
PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 269+33

MATCH 252+21

SHEET 18

SHEET 16




Know what's below. Call 811 before you dig.

**RUNNING LINE:**
**SOUTH OF MIGUEL ROAD = 3' EAST OF POWER POLES**
**NORTH OF MIGUEL ROAD = 3' NORTH OF POWER POLES**
**MIN DEPTH= 36"**

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE N/A

SHEET 17 OF 27

EX. ROUTE N/A

MAP REF. 351030/35129

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: WINTERHAVEN

TWN/RGE 16S / 23E

SEC. 18

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV 02/15

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 252+21 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 269+33 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1780 | 1780 | | | |
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| | 1780 | 1780 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| | 1 | 130 | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

HH 284+13

288+44 MATCH

SHEET 19




**RUNNING LINE:**
**PEREZ ROAD = 3' WEST OF POWER POLES**
**ROSS ROAD = 6' FROM EDGE PVMT**
**MIN DEPTH= 36"**

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

Know what's below. Call 811 before you dig.

| | |
|---|---|
| ROUTE | AB |
| SHEET | 18 OF 27 |
| EX. ROUTE | AB |
| MAP REF. | 351029 |
| COUNTY: | IMPERIAL |
| TOWNSHIP: | |
| TAX DISTRICT: | |
| MUNICIPALITY: | WINTERHAVEN |
| TWN/RGE | 16S / 23E |
| SEC. | 7 |
| STAKED BY | FARR |
| DATE | 01/14 |
| DRAFTED BY | FARR |
| DATE | 10/14 |
| W.O. | TC-CA351ENG-001 |
| REV | 02/15 |
| REV | |
| REV | |
| FILE: | |

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 269+33 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 284+13 | HH11 | BH4 / BD3 | | | | | | | |
| | | | | | | | | | |
| 288+44 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| 100 | 1524 | 1542 | | | |
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| | 444 | 444 | | | |
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| | | | | | |
| 100 | 1968 | 1968 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
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| 1 | 1 | | | | | | | | | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 288+44

MATCH 305+56




**RUNNING LINE = 6' FROM EDGE PVMT**
**MIN DEPTH= 36"**

811 Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BA

SHEET 19 OF 27

EX. ROUTE BA

MAP REF. 351029

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: BARD

TWN/RGE 16S / 23E

SEC. 7

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV 02/15

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 288+44 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 305+56 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1766 | 1766 | | | |
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| | 1766 | 1766 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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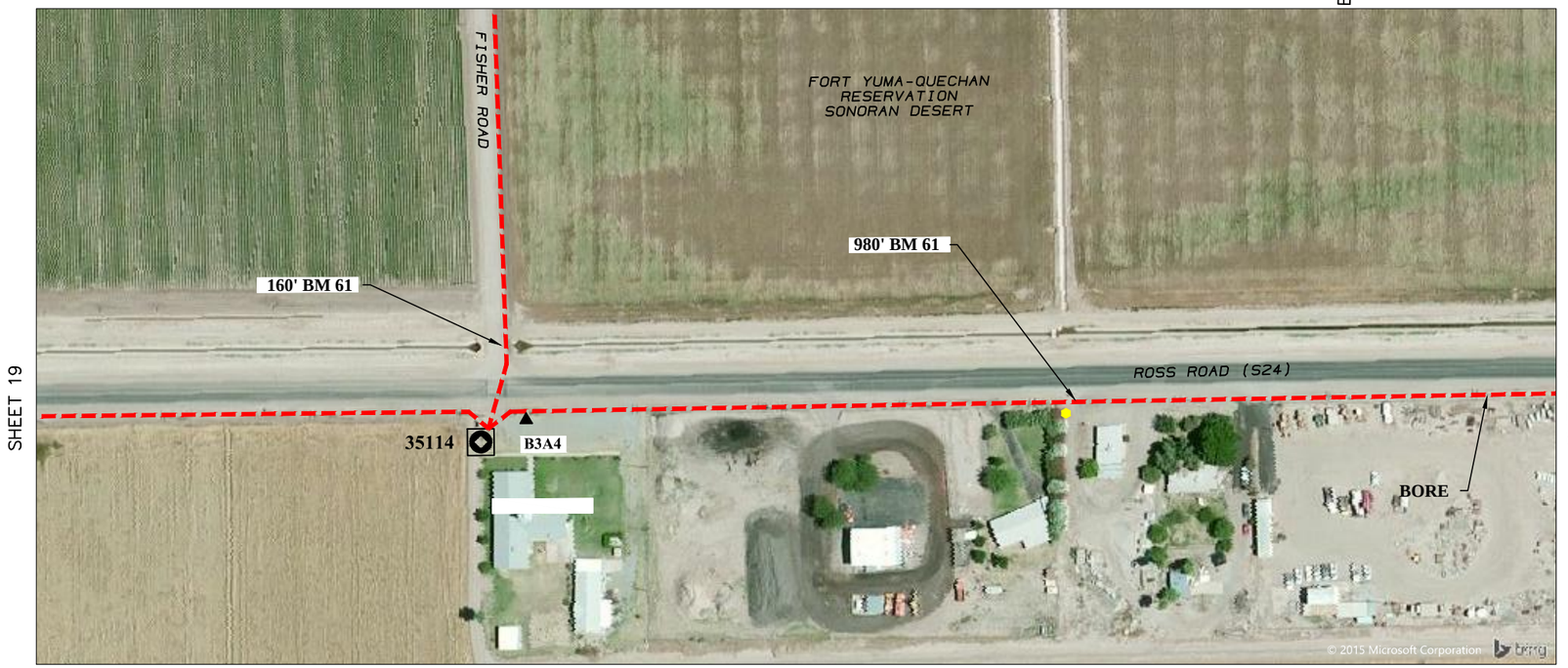
PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

305+56 MATCH | 310+59 DSA | 311+10 PP | 320+39 END BORE | 322+68 MATCH

315+47 MATCH

311+71 IRRIG.

SHEET 20–1




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

ROUTE BA
SHEET 20 OF 27
EX. ROUTE BA
MAP REF. 351035
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 22E
SEC. 7
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/05
REV
REV
FILE:

NOT TO SCALE

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

TDS

## POLES / PEDS | CABLE | POLE LINE & PED HARDWARE

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ | BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFC 100–24 | | | BM2 (5/8)(8) | BM 2C | BM 20 | BM 53 | BM 61D | | | | | | CUST NO. | | | HBFO (96) | HO1 | HC1 | | W BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 305+56 | MATCH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 310+59 | DSA | | | | | | | | | 100 | 560 | 560 | | | | | | 1 | | | | | | | | | | 1 | 24 | 100 | | |
| | B3A4 | | | | | | | | | | | | 110 | | | | 1 | | | | | | | | | | | | | 100 | | 1 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 322+68 | MATCH | | | | | | | | | | 1290 | 1290 | | | | | | | | 980 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 315+37 | MATCH | | | | | | | | | 50 | 550 | 550 | | | | | | | | 160 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| TOTAL | | | | | | | | | | 150 | 2400 | 2400 | 110 | | | | 1 | 1 | | 1140 | | | | | | | | 1 | 24 | 200 | | 1 |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 332+64 | ROAD 324+15 | MATCH 315+37

SHEET 20-2




SHEET 20

**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BD

SHEET 20-1 OF 27

EX. ROUTE BD

MAP REF. 351035

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: BARD

TWN/RGE 16S / 23E

SEC. 8

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV 02/15

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/ PED NO. TEL CO. | POLE/ PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 315+37 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 332+64 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

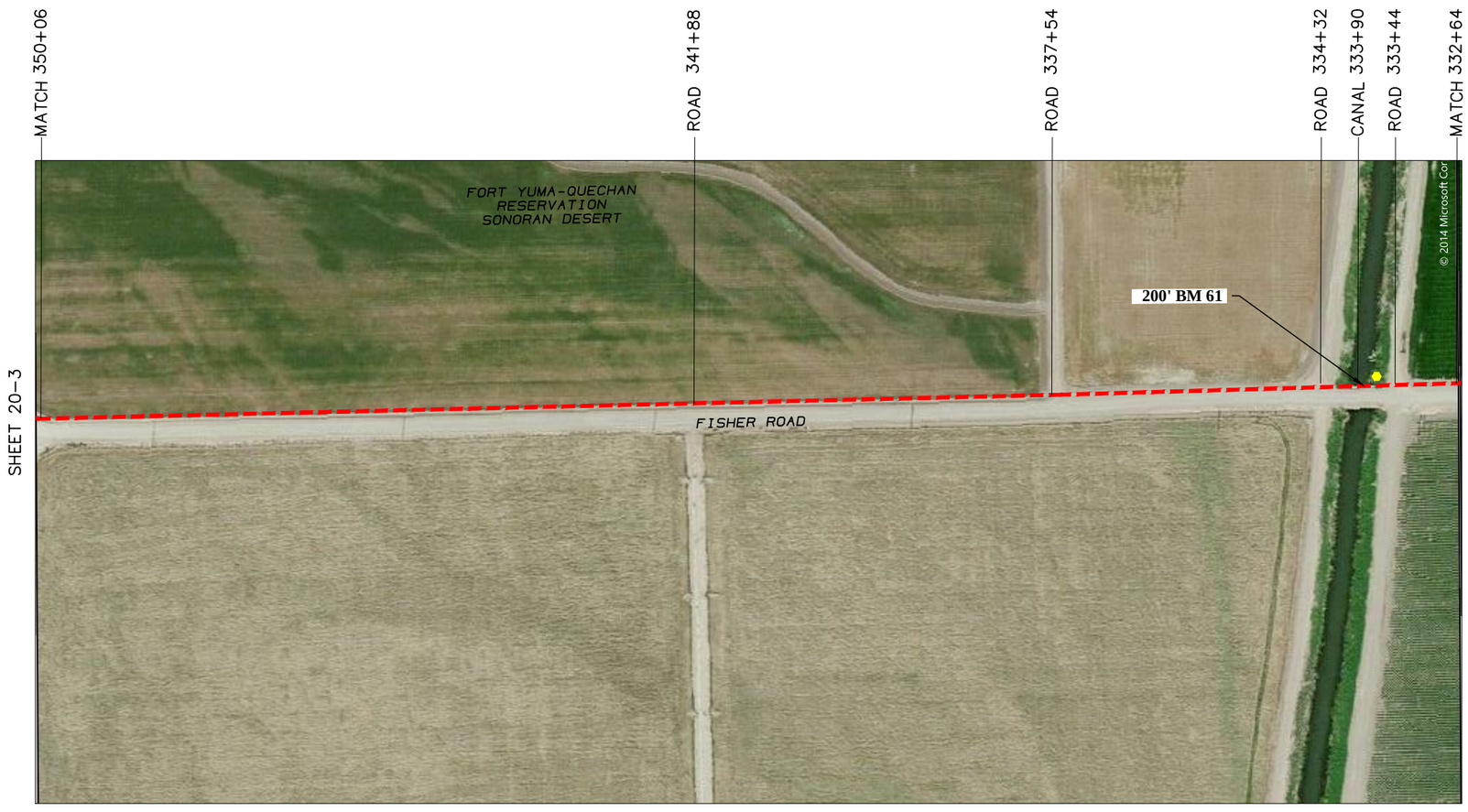
## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1784 | 1784 | | | |
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| | | | | | |
| | 1784 | 1784 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 2'
WEST OF POWER POLES
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BD
SHEET 20-2 OF 27
EX. ROUTE BD
MAP REF. 351035
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 8/5
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 332+64 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 350+06 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
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| | 1794 | 1794 | | | |
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| | | | | | |
| | 1794 | 1794 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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| | | | | | | | | | | |
| | 1 | 200 | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BD
SHEET 20-3 OF 27
EX. ROUTE BD
MAP REF. 351034
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 5
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 350+06 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| 365+48 | ROAD | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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| | | | | | |
| | 1588 | 1588 | | | |
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| | | | | | |
| | 1588 | 1588 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | 250 | | | | | | | |
| | | 140 | | | | | | | |
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| | 1 | 390 | | | | | | | |

CUST NO.

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

Know what's below. Call 811 before you dig.

ROUTE BD
SHEET 20-4 OF 27
EX. ROUTE BD
MAP REF. 351034
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 5
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 365+48 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 377+90 | PB3R5 | | | | | | | | |
| | | | | | | | | | |
| 382+65 | DSA | | | | | | | | |
| | | | | | | | | | |
| 382+95 | PB3R3 | | | | | | | | |
| | | | | | | | | | |
| 383+90 | MATCH | | | | | | | | |
| | | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFOV (2)(1.25) | BFC 25-24 | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | 1280 | 1280 | | | |
| | | | | | |
| | 490 | | 490 | | |
| | 490 | | | | |
| | | | | 50 | |
| | | | | | |
| | 618 | 618 | | | |
| | | | | | |
| | 2878 | 1898 | 490 | 50 | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 2C | BM 20 | BM 53 | BM 61D | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 150 | | | | | |
| | | | | 150 | | | | | |
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| | 1 | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| | 1 | 1 | | 300 | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | HC1 | | W BD |
|---|---|---|---|---|---|---|---|
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| | | | 1 | 6 | 25 | | |
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| | | | | | 25 | | 1 |
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| | | | 1 | 6 | 50 | | 1 |

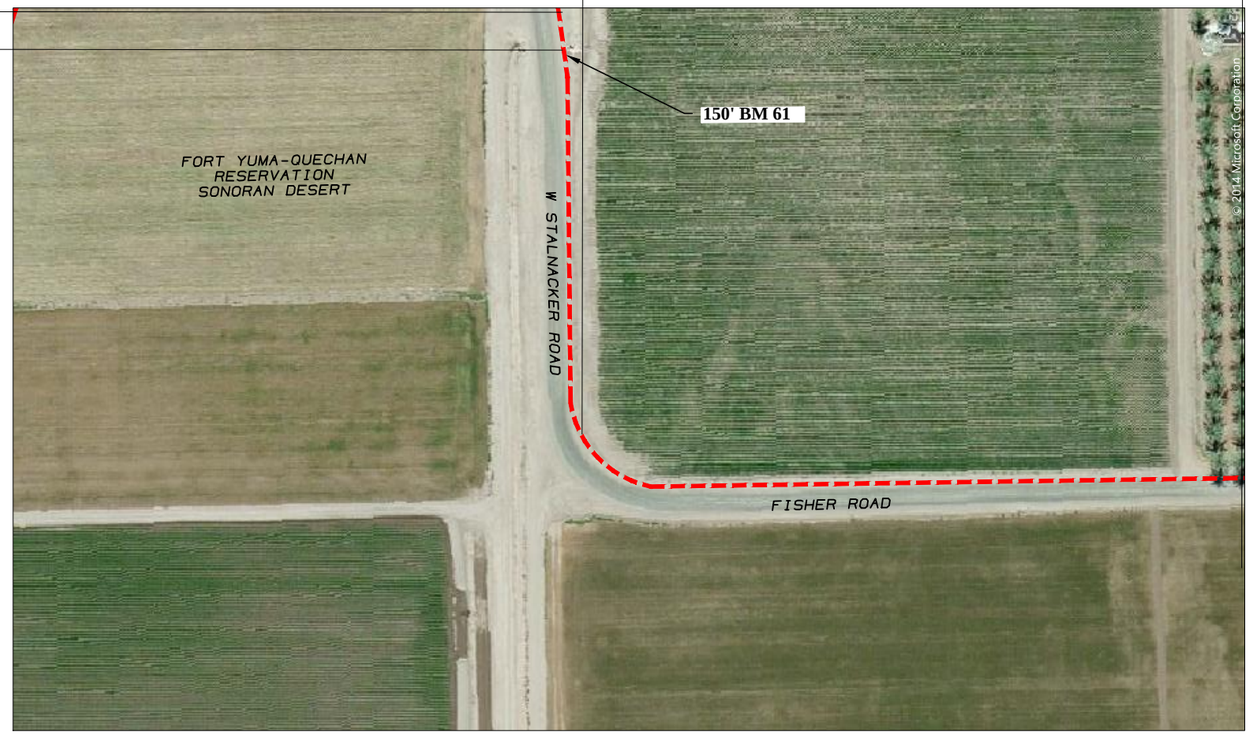
PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

396+94 MATCH
396+02 IRRIG

SHEET 20-6

TURN 391+94

MATCH 383+80




SHEET 20-4

RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BP
SHEET 20-5 OF 27
EX. ROUTE BP
MAP REF. 351034
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 5
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 10/14
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 383+80 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 396+94 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
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| | 1360 | 1360 | | | |
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| | 1360 | 1360 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| CUST NO. | | | | | | | |
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BP
SHEET 20-6 OF 27
EX. ROUTE BP
MAP REF. 351034
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 5
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 396+94 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 413+44 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1700 | 1700 | | | |
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| | 1700 | 1700 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| | 1 | 200 | | | | | | | |
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| CUST NO. | | | | | | | | |
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 413+44 | ROAD 416+46 | ROAD 423+30 | ROAD 431+08




SHEET 20-6

SHEET 20-8

RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BP

SHEET 20-7 OF 27

EX. ROUTE BP

MAP REF. 351034

COUNTY:
IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY:
BARD

TWN/RGE 16S / 23E

SEC. 5

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV 02/15

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 413+44 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 431+08 | ROAD | | | | | | | | |
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| TOTAL | | | | | | | | | |

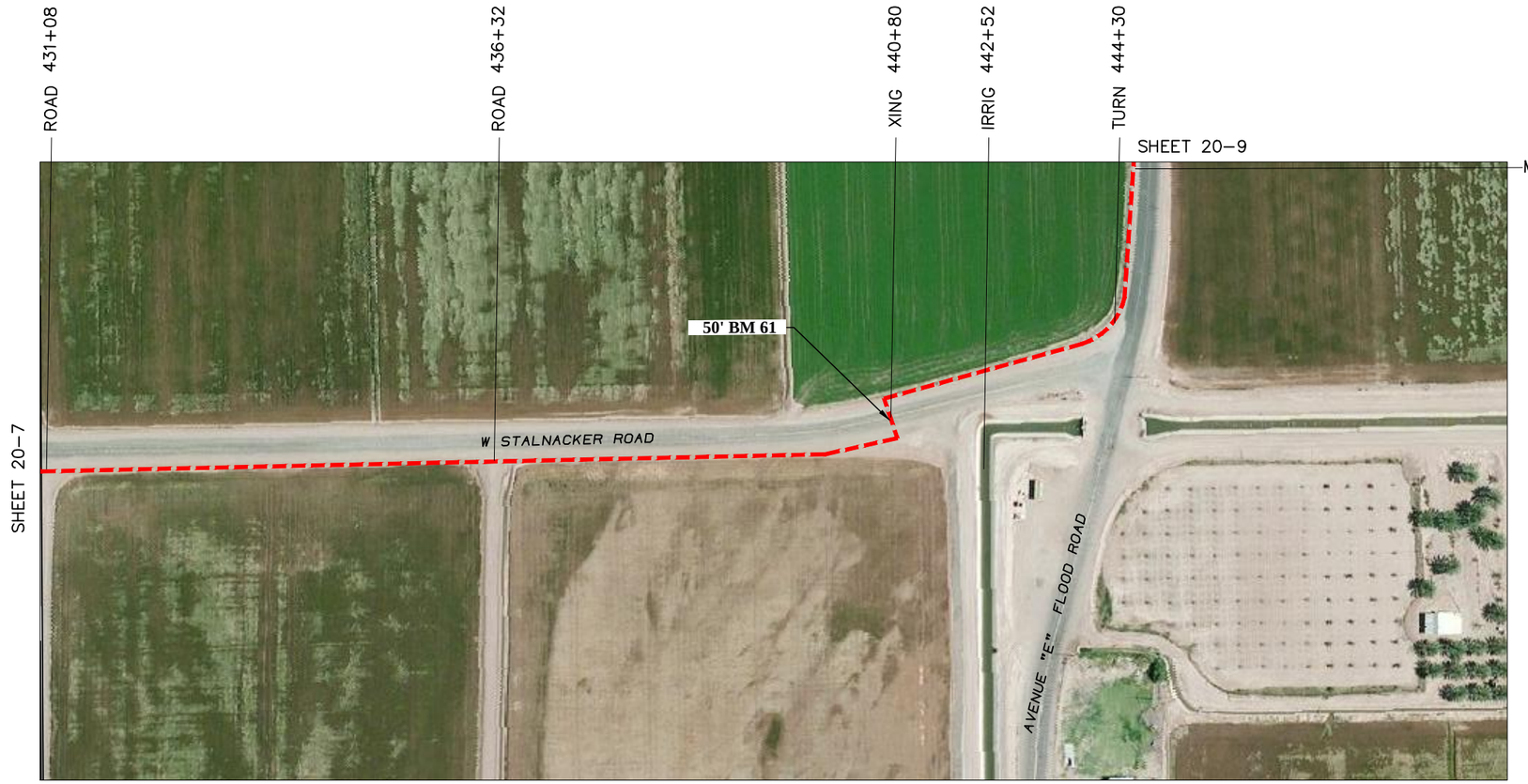
## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
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| | 1820 | 1820 | | | |
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| | | | | | |
| | 1820 | 1820 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BP
SHEET 20-8 OF 27
EX. ROUTE BP
MAP REF. 351034
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 5/32
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 431+08 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 449+80 | XING | | | | | | | | |
| | | | | | | | | | |
| 445+58 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

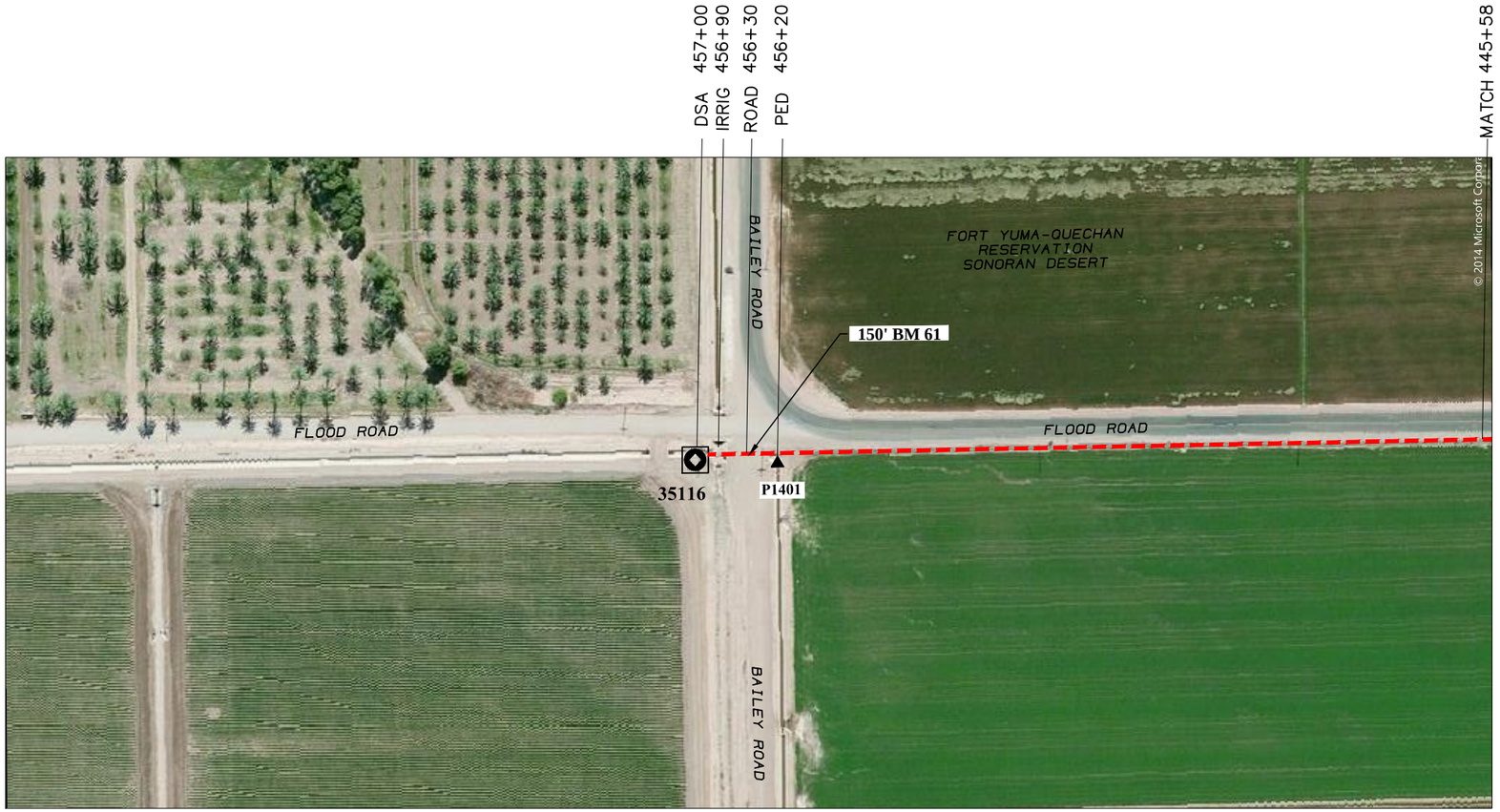
## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
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| | | | | | |
| | | | | | |
| | 1550 | 1550 | | | |
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| | | | | | |
| | | | | | |
| | 1550 | 1550 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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| | | 50 | | | | | | | | |
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| | | 50 | | | | | | | | |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351




**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BP
SHEET 20-9 OF 27
EX. ROUTE BP
MAP REF. 351033
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 15S / 23E
SEC. 32
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 445+58 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 456+20 | P1401 | | | | | | | | |
| | | | | | | | | | |
| 457+00 | DSA | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFC 50-24 | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1094 | 1094 | | | |
| | | | | | |
| 50 | 150 | 150 | 150 | | |
| | | | | | |
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| | | | | | |
| 50 | 1244 | 1244 | 150 | | |

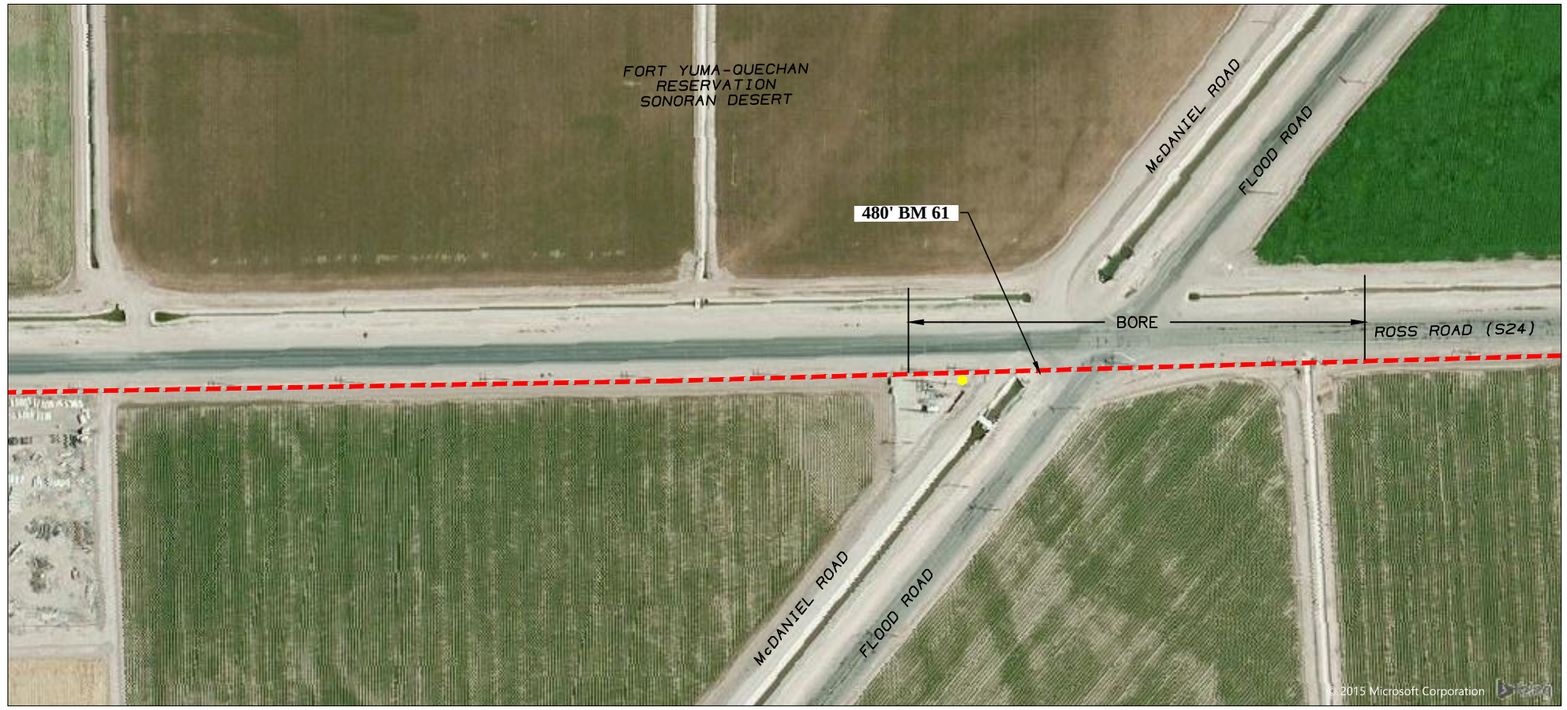
## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 2C | BM 20 | BM 53 | BM 61D | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| | | 1 | | 150 | | | | | |
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| | 1 | 1 | | 150 | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | HC1 | | W BD |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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| | | | | | 50 | | 1 |
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| | | | 1 | 6 | 50 | | |
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| | | | 1 | 6 | 100 | | 1 |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

322+68 | 330+42 ROAD | 333+87 IRRIG | 334+53 ROAD | 336+96 IRRIG | 339+90 MATCH




RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BA
SHEET 21 OF 27
EX. ROUTE BA
MAP REF. 351035
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 8
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 322+68 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 339+90 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | 1766 | 1766 | | | |
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| | | | | | |
| | 1766 | 1766 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | 480 | | | | | | | |
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| | 1 | 480 | | | | | | | |

CUST NO.

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 339+90 | IRRIG 349+18 | MATCH 357+02

SHEET 21




SHEET 23

**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BA
SHEET 22 OF 27
EX. ROUTE BA
MAP REF. 351035
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 8
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 339+90 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 357+02 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
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| | | | | | |
| | 1770 | 1770 | | | |
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| | 1770 | 1770 | | | |

## POLE LINE & PED HARDWARE

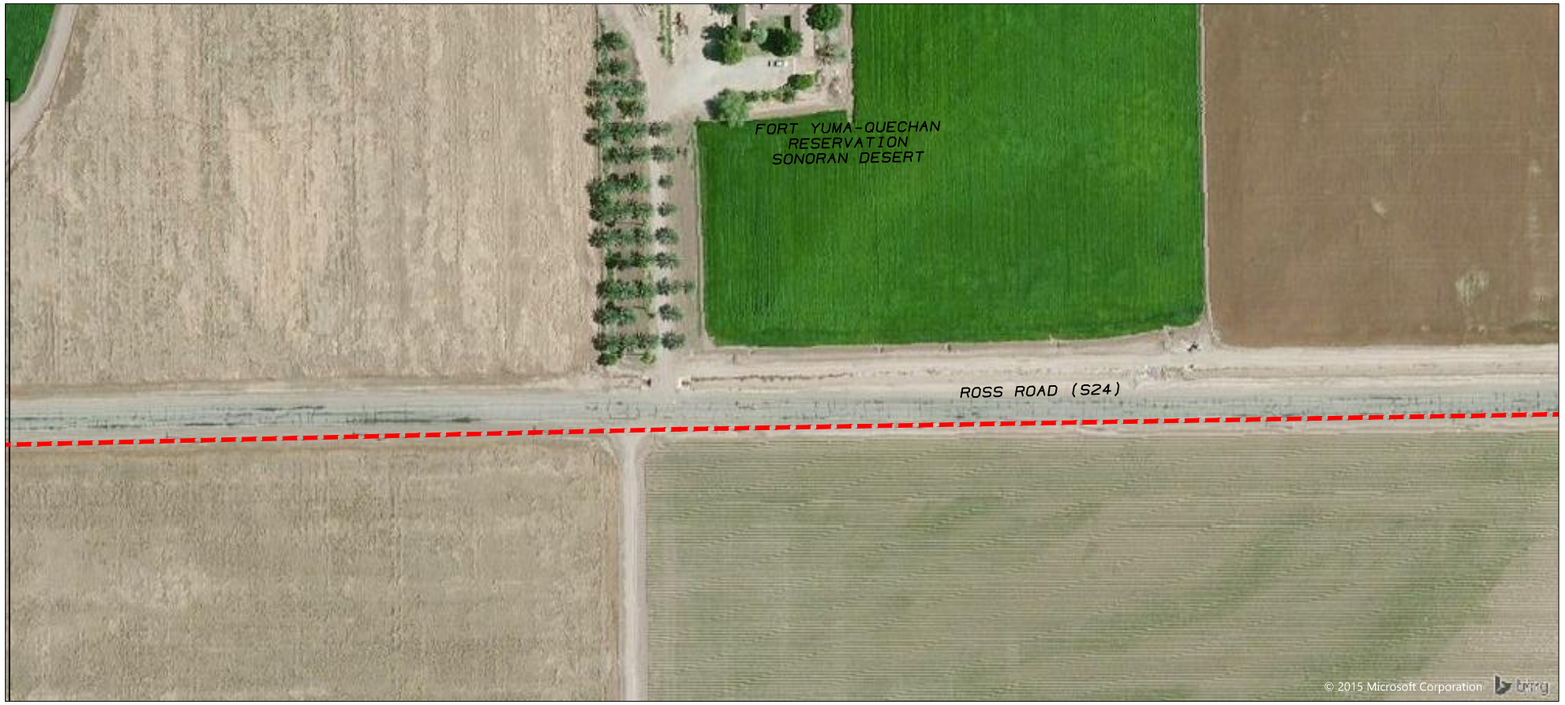
| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| | | 480 | | | | | | | |
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| | | 480 | | | | | | | |

| CUST NO. | | | | | | | | |
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 357+02 | ROAD 364+18 | MATCH 374+16

SHEET 22




SHEET 24

**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BB

SHEET 23 OF 27

EX. ROUTE BB

MAP REF. 351035

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: BARD

TWN/RGE 16S / 23E

SEC. 8

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV 02/15

REV

REV

FILE:

N

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 357+02 | MATCH | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 374+16 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
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| | | | | | |
| | | | | | |
| | 1770 | 1770 | | | |
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| | | | | | |
| | | | | | |
| | 1770 | 1770 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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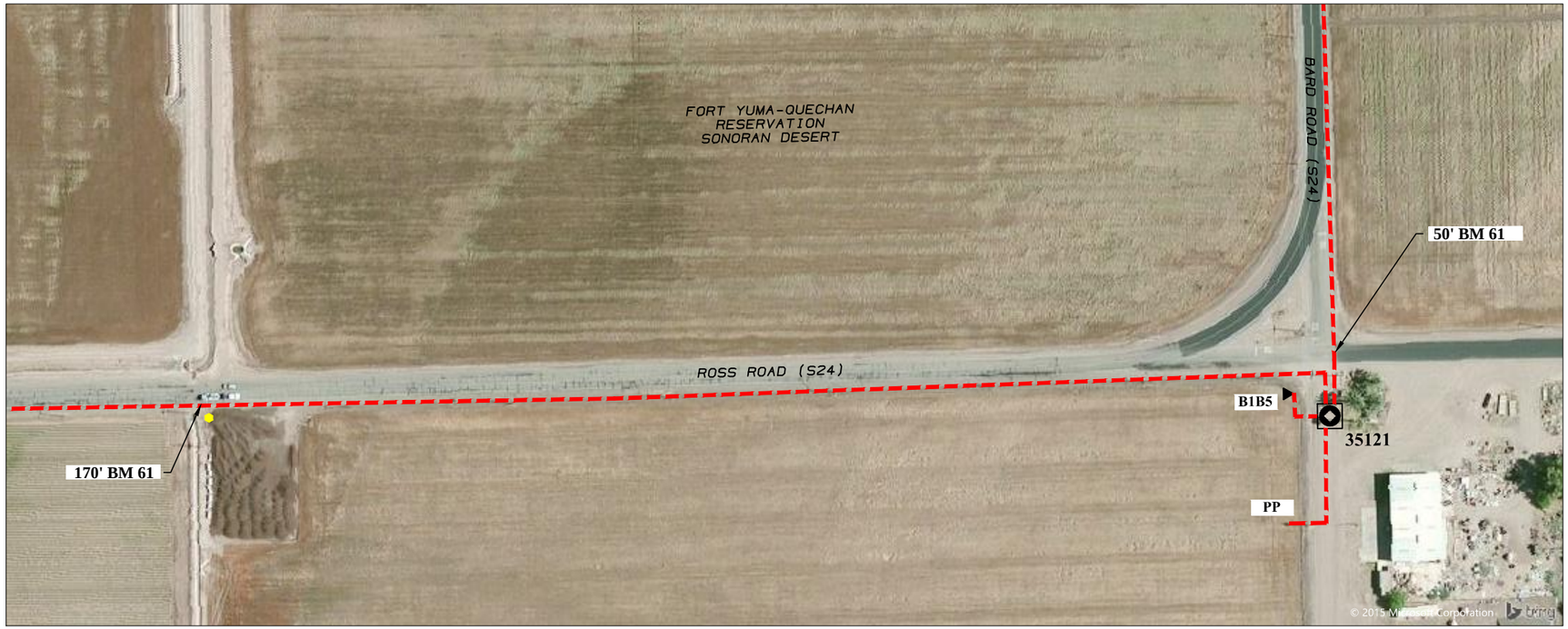
PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 374+16 | IRRIG 376+45 | ROAD 389+99

SHEET 25

MATCH 397+19

SHEET 23




DSA 390+25

RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BB
SHEET 24 OF 27
EX. ROUTE BB
MAP REF. 351035
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 9
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 374+16 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 390+25 | DSA | | | | | | | | |
| | B1B5 | | | | | | | | |
| | PP | | | | | | | | |
| | | | | | | | | | |
| 397+19 | MATCH | | | | | | | | |
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| | | | | | | | | | |
| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | BFC 100–24 | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 100 | 1700 | 1700 | | | |
| | | | 110 | | |
| | | 180 | | | |
| | | | | | |
| | 780 | 780 | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| 100 | 2480 | 2660 | 110 | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 20 | BM 53 | BM 61D | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | 1 | 1 | 170 | | | | | | |
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| | | | | | | | | | |
| | 1 | 1 | 170 | | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | HC1 | | WBD |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | 1 | 6 | 100 | | |
| | | | | | 100 | | 1 |
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| | | | | | | | |
| | | | 1 | 6 | 200 | | 1 |

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 411+79 | ROAD 403+67 | MATCH 397+19

SHEET 26




SHEET 24

**RUNNING LINE = 6'**
**FROM EDGE PVMT**
**MIN DEPTH= 36"**

811 Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

NOT TO SCALE

TDS

ROUTE BB
SHEET 25 OF 27
EX. ROUTE BB
MAP REF. 351040
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: BARD
TWN/RGE 16S / 23E
SEC. 9
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV 02/15
REV
REV
FILE:

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 397+19 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 411+79 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
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| | 1510 | 1510 | | | |
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| | 1510 | 1510 | | | |

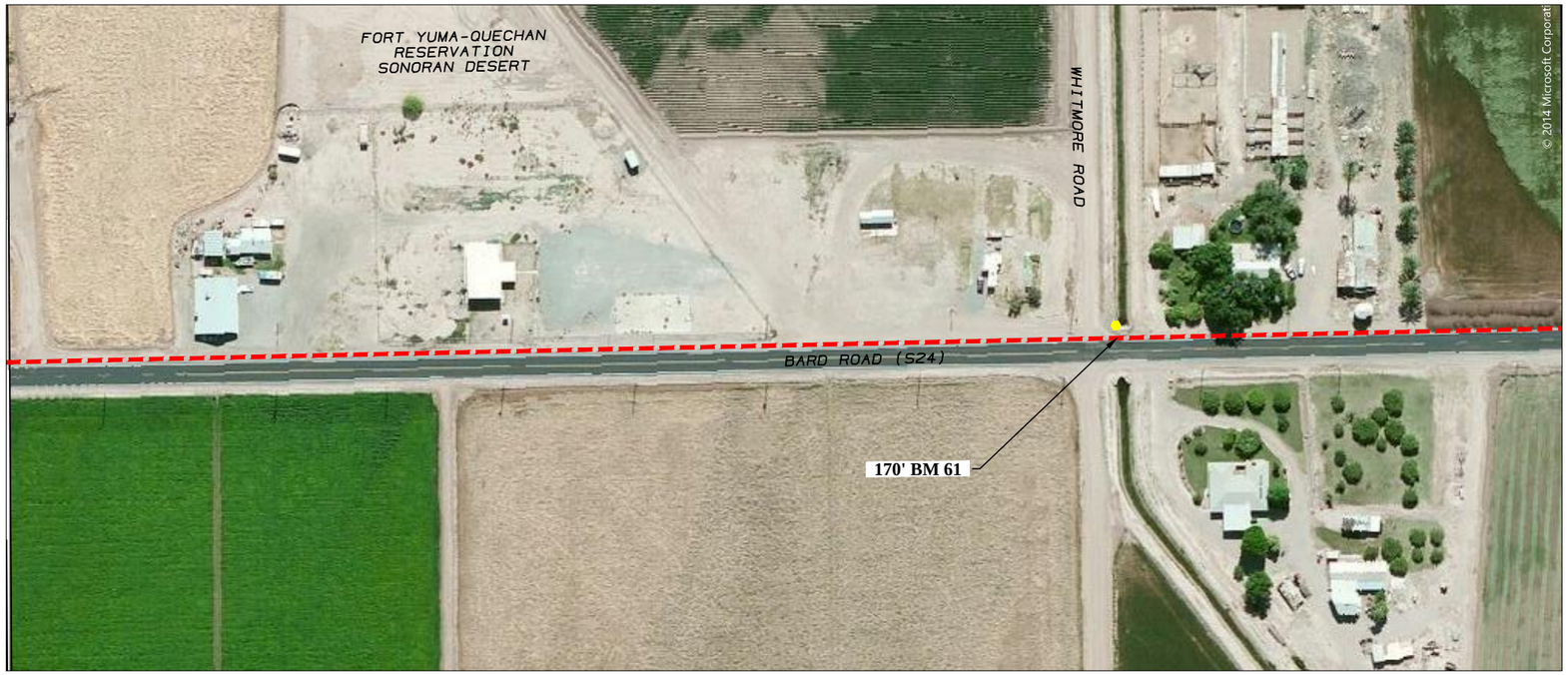
## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | | CUST NO. |
|---|---|---|---|---|---|---|---|---|---|---|
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PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

MATCH 428+83 | ROAD 417+19 | IRRIG 416+23 | MATCH 411+79

SHEET 27




SHEET 25

RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BB

SHEET 26 OF 27

EX. ROUTE BB

MAP REF. 351040

COUNTY: IMPERIAL

TOWNSHIP:

TAX DISTRICT:

MUNICIPALITY: BARD

TWN/RGE 16S / 23E

SEC. 9/4

STAKED BY FARR

DATE 01/14

DRAFTED BY FARR

DATE 10/14

W.O. TC-CA351ENG-001

REV 02/15

REV

REV

FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 411+79 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 428+83 | MATCH | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV (1)(1.25) | | | |
|---|---|---|---|---|---|
| | | | | | |
| | 1760 | 1760 | | | |
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| | 1760 | 1760 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 53 | BM 61D | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | 1 | 170 | | | | | | | |
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| | | | | | | | | | |
| | 1 | 170 | | | | | | | |

CUST NO.

PROJECT NO. 23325 | TEL. CO. TDS | EXCHANGE 351

DSA 439+19
ROAD 436+75

MATCH 428+83




SHEET 26

RUNNING LINE = 6'
FROM EDGE PVMT
MIN DEPTH= 36"

Know what's below. Call 811 before you dig.

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM FIELD OBSERVATIONS BUT ARE NOT NECESSARILY EXACT. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND OBSTRUCTIONS AND UTILITIES PRIOR TO CONSTRUCTION. COMPLETE REPAIR OF ANY AND ALL DAMAGES INCURRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

ROUTE BB
SHEET 28 OF 27
EX. ROUTE BB
MAP REF. 351040
COUNTY: IMPERIAL
TOWNSHIP:
TAX DISTRICT:
MUNICIPALITY: WINTERHAVEN
TWN/RGE 16S / 22E
SEC. 4
STAKED BY FARR
DATE 01/14
DRAFTED BY FARR
DATE 10/14
W.O. TC-CA351ENG-001
REV
REV
REV
FILE:

NOT TO SCALE

TDS

## POLES / PEDS

| POLE/PED NO. TEL CO. | POLE/PED NO. FOR CO. | BD / HA | BG / PG | LEAD ANGLE | POLE LENGTH CLASS | YEAR SET | YEAR REM | JOINT % | JOINT W/ |
|---|---|---|---|---|---|---|---|---|---|
| 428+83 | MATCH | | | | | | | | |
| | | | | | | | | | |
| 439+19 | DSA | | | | | | | | |
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| TOTAL | | | | | | | | | |

## CABLE

| BFO (96) | BFOI (96) | BFOV 1.25 | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 50 | 1070 | 1070 | | | |
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| 50 | 1070 | 1070 | | | |

## POLE LINE & PED HARDWARE

| BM2 (5/8)(8) | BM 20 | BM 53 | BM 61D | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
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| | 1 | 1 | | | | | | | |
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| | 1 | 1 | | | | | | | |

| CUST NO. | | | HBFO (96) | HO1 | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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| | | | 1 | 6 | | | |
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| | | | 1 | 6 | | | |

# Appendix C

## Air Quality/Greenhouse Gas Emissions Evaluations

# CPUC Winterhaven Broadband

**Imperial County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Light Industry | 0.00 | 1000sqft | 0.00 | 0.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 3.4 | **Precipitation Freq (Days)** | 12 |
| **Climate Zone** | 15 | | | **Operational Year** | 2017 |
| **Utility Company** | Imperial Irrigation District | | | | |
| **CO2 Intensity (lb/MWhr)** | 1270.9 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Durations determined based on an assumed 2 miles/day for plow installation, 400 ft/day for bored installation, and 2 nodes/day.

Off-road Equipment - Bored installation has 2 pumps, 2 air compressors, 2 drill rigs, and 2 backhoes.

Off-road Equipment - Node construction will only have 1 backhoe.

Off-road Equipment - Plowed installation has 2 air compressors, and 2 crawler tractors.

Trips and VMT - Vendor trips include equipment delivery and water trucks for dust control. Workers in Winterhaven, vendors in Yuma. Equipment delivery rate=2/day for plowed and 1/day for bored installations. Node vaults = 1/day. Water truck = twice/day during each phase.

On-road Fugitive Dust - Approximately 10% of the roads in the project area are not paved.

Vehicle Trips - Assumed no workers.

Road Dust - Updated % road paved to be 90%.

Construction Off-road Equipment Mitigation - Assume cleaning of paved roads will provide a 10% reduction in PM.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 10 |
| tblConstructionPhase | PhaseStartDate | 3/5/2016 | 3/7/2016 |
| tblOffRoadEquipment | HorsePower | 78.00 | 174.00 |
| tblOffRoadEquipment | HorsePower | 208.00 | 97.00 |
| tblOffRoadEquipment | HorsePower | 84.00 | 208.00 |
| tblOffRoadEquipment | LoadFactor | 0.48 | 0.41 |
| tblOffRoadEquipment | LoadFactor | 0.43 | 0.37 |
| tblOffRoadEquipment | LoadFactor | 0.74 | 0.43 |
| tblOnRoadDust | VendorPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | VendorPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | VendorPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | WorkerPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | WorkerPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | WorkerPercentPave | 50.00 | 90.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2017 |

| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
|---|---|---|---|
| tblRoadDust | RoadPercentPave | 50 | 90 |
| tblTripsAndVMT | VendorTripLength | 11.90 | 8.90 |
| tblTripsAndVMT | VendorTripLength | 11.90 | 8.90 |
| tblTripsAndVMT | VendorTripLength | 11.90 | 8.90 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 8.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | WorkerTripLength | 10.20 | 7.30 |
| tblTripsAndVMT | WorkerTripLength | 10.20 | 7.30 |
| tblTripsAndVMT | WorkerTripLength | 10.20 | 7.30 |
| tblTripsAndVMT | WorkerTripNumber | 3.00 | 6.00 |
| tblVehicleEF | HHD | 0.03 | 0.02 |
| tblVehicleEF | HHD | 7.1940e-003 | 7.6650e-003 |
| tblVehicleEF | HHD | 3.02 | 2.95 |
| tblVehicleEF | HHD | 1.71 | 1.75 |
| tblVehicleEF | HHD | 70.59 | 75.37 |
| tblVehicleEF | HHD | 557.88 | 566.80 |
| tblVehicleEF | HHD | 1,511.58 | 1,538.63 |
| tblVehicleEF | HHD | 61.94 | 65.70 |
| tblVehicleEF | HHD | 0.08 | 0.08 |
| tblVehicleEF | HHD | 4.29 | 4.62 |
| tblVehicleEF | HHD | 4.30 | 4.86 |
| tblVehicleEF | HHD | 4.71 | 4.85 |
| tblVehicleEF | HHD | 0.01 | 0.01 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.10 | 0.11 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 4.0230e-003 | 4.9800e-003 |
| tblVehicleEF | HHD | 9.8530e-003 | 0.01 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8370e-003 | 8.8390e-003 |
| tblVehicleEF | HHD | 0.09 | 0.11 |
| tblVehicleEF | HHD | 3.1900e-003 | 3.9270e-003 |
| tblVehicleEF | HHD | 6.8240e-003 | 8.0590e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.54 | 0.53 |
| tblVehicleEF | HHD | 3.2800e-003 | 3.8220e-003 |
| tblVehicleEF | HHD | 0.16 | 0.17 |
| tblVehicleEF | HHD | 0.80 | 0.95 |
| tblVehicleEF | HHD | 2.83 | 3.23 |
| tblVehicleEF | HHD | 5.6030e-003 | 5.6040e-003 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 1.8480e-003 | 1.9650e-003 |
| tblVehicleEF | HHD | 6.8240e-003 | 8.0590e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.61 | 0.60 |
| tblVehicleEF | HHD | 3.2800e-003 | 3.8220e-003 |
| tblVehicleEF | HHD | 0.19 | 0.20 |
| tblVehicleEF | HHD | 0.80 | 0.95 |
| tblVehicleEF | HHD | 3.04 | 3.47 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 7.1940e-003 | 7.6650e-003 |
| tblVehicleEF | HHD | 2.20 | 2.14 |
| tblVehicleEF | HHD | 1.72 | 1.76 |
| tblVehicleEF | HHD | 67.18 | 72.53 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 591.03 | 600.47 |
| tblVehicleEF | HHD | 1,511.58 | 1,538.63 |
| tblVehicleEF | HHD | 61.94 | 65.70 |
| tblVehicleEF | HHD | 0.08 | 0.08 |
| tblVehicleEF | HHD | 4.43 | 4.77 |
| tblVehicleEF | HHD | 3.91 | 4.42 |
| tblVehicleEF | HHD | 4.62 | 4.75 |
| tblVehicleEF | HHD | 9.0280e-003 | 0.01 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.10 | 0.11 |
| tblVehicleEF | HHD | 4.0230e-003 | 4.9800e-003 |
| tblVehicleEF | HHD | 8.3060e-003 | 9.9260e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8370e-003 | 8.8390e-003 |
| tblVehicleEF | HHD | 0.09 | 0.11 |
| tblVehicleEF | HHD | 3.1900e-003 | 3.9270e-003 |
| tblVehicleEF | HHD | 0.01 | 0.02 |
| tblVehicleEF | HHD | 0.25 | 0.30 |
| tblVehicleEF | HHD | 0.51 | 0.50 |
| tblVehicleEF | HHD | 5.2890e-003 | 6.1810e-003 |
| tblVehicleEF | HHD | 0.16 | 0.17 |
| tblVehicleEF | HHD | 0.84 | 0.99 |
| tblVehicleEF | HHD | 2.69 | 3.07 |
| tblVehicleEF | HHD | 5.9350e-003 | 5.9370e-003 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 1.7900e-003 | 1.9150e-003 |
| tblVehicleEF | HHD | 0.01 | 0.02 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 0.25 | 0.30 |
| tblVehicleEF | HHD | 0.58 | 0.57 |
| tblVehicleEF | HHD | 5.2890e-003 | 6.1810e-003 |
| tblVehicleEF | HHD | 0.19 | 0.20 |
| tblVehicleEF | HHD | 0.84 | 0.99 |
| tblVehicleEF | HHD | 2.88 | 3.30 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 7.1940e-003 | 7.6650e-003 |
| tblVehicleEF | HHD | 4.17 | 4.06 |
| tblVehicleEF | HHD | 1.69 | 1.73 |
| tblVehicleEF | HHD | 83.73 | 88.23 |
| tblVehicleEF | HHD | 512.11 | 520.30 |
| tblVehicleEF | HHD | 1,511.58 | 1,538.63 |
| tblVehicleEF | HHD | 61.94 | 65.70 |
| tblVehicleEF | HHD | 0.08 | 0.08 |
| tblVehicleEF | HHD | 4.10 | 4.42 |
| tblVehicleEF | HHD | 4.34 | 4.92 |
| tblVehicleEF | HHD | 4.95 | 5.09 |
| tblVehicleEF | HHD | 0.01 | 0.02 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.10 | 0.11 |
| tblVehicleEF | HHD | 4.0230e-003 | 4.9800e-003 |
| tblVehicleEF | HHD | 0.01 | 0.01 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8370e-003 | 8.8390e-003 |
| tblVehicleEF | HHD | 0.09 | 0.11 |
| tblVehicleEF | HHD | 3.1900e-003 | 3.9270e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 2.8910e-003 | 3.4130e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.58 | 0.57 |
| tblVehicleEF | HHD | 1.0500e-003 | 1.2110e-003 |
| tblVehicleEF | HHD | 0.16 | 0.17 |
| tblVehicleEF | HHD | 0.82 | 0.97 |
| tblVehicleEF | HHD | 3.34 | 3.83 |
| tblVehicleEF | HHD | 5.1430e-003 | 5.1440e-003 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 2.0710e-003 | 2.1860e-003 |
| tblVehicleEF | HHD | 2.8910e-003 | 3.4130e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.66 | 0.65 |
| tblVehicleEF | HHD | 1.0500e-003 | 1.2110e-003 |
| tblVehicleEF | HHD | 0.19 | 0.20 |
| tblVehicleEF | HHD | 0.82 | 0.97 |
| tblVehicleEF | HHD | 3.59 | 4.11 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 2.47 | 2.63 |
| tblVehicleEF | LDA | 5.75 | 6.11 |
| tblVehicleEF | LDA | 246.08 | 257.62 |
| tblVehicleEF | LDA | 57.24 | 59.93 |
| tblVehicleEF | LDA | 0.45 | 0.45 |
| tblVehicleEF | LDA | 0.34 | 0.35 |
| tblVehicleEF | LDA | 0.30 | 0.32 |
| tblVehicleEF | LDA | 1.6070e-003 | 1.6480e-003 |
| tblVehicleEF | LDA | 3.5900e-003 | 3.5020e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDA | 1.4800e-003 | 1.5120e-003 |
| tblVehicleEF | LDA | 3.3110e-003 | 3.2200e-003 |
| tblVehicleEF | LDA | 0.17 | 0.19 |
| tblVehicleEF | LDA | 0.18 | 0.19 |
| tblVehicleEF | LDA | 0.11 | 0.12 |
| tblVehicleEF | LDA | 0.11 | 0.12 |
| tblVehicleEF | LDA | 0.39 | 0.42 |
| tblVehicleEF | LDA | 0.52 | 0.55 |
| tblVehicleEF | LDA | 3.3100e-003 | 3.3130e-003 |
| tblVehicleEF | LDA | 8.3900e-004 | 8.4600e-004 |
| tblVehicleEF | LDA | 0.17 | 0.19 |
| tblVehicleEF | LDA | 0.18 | 0.19 |
| tblVehicleEF | LDA | 0.11 | 0.12 |
| tblVehicleEF | LDA | 0.13 | 0.14 |
| tblVehicleEF | LDA | 0.39 | 0.42 |
| tblVehicleEF | LDA | 0.56 | 0.59 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 2.82 | 3.00 |
| tblVehicleEF | LDA | 6.01 | 6.39 |
| tblVehicleEF | LDA | 252.47 | 264.31 |
| tblVehicleEF | LDA | 57.24 | 59.93 |
| tblVehicleEF | LDA | 0.45 | 0.45 |
| tblVehicleEF | LDA | 0.30 | 0.32 |
| tblVehicleEF | LDA | 0.30 | 0.33 |
| tblVehicleEF | LDA | 1.6070e-003 | 1.6480e-003 |
| tblVehicleEF | LDA | 3.5900e-003 | 3.5020e-003 |
| tblVehicleEF | LDA | 1.4800e-003 | 1.5120e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDA | 3.3110e-003 | 3.2200e-003 |
| tblVehicleEF | LDA | 0.36 | 0.39 |
| tblVehicleEF | LDA | 0.26 | 0.28 |
| tblVehicleEF | LDA | 0.20 | 0.21 |
| tblVehicleEF | LDA | 0.12 | 0.13 |
| tblVehicleEF | LDA | 0.40 | 0.44 |
| tblVehicleEF | LDA | 0.52 | 0.56 |
| tblVehicleEF | LDA | 3.4020e-003 | 3.4050e-003 |
| tblVehicleEF | LDA | 8.4400e-004 | 8.5100e-004 |
| tblVehicleEF | LDA | 0.36 | 0.39 |
| tblVehicleEF | LDA | 0.26 | 0.28 |
| tblVehicleEF | LDA | 0.20 | 0.21 |
| tblVehicleEF | LDA | 0.15 | 0.16 |
| tblVehicleEF | LDA | 0.40 | 0.44 |
| tblVehicleEF | LDA | 0.56 | 0.59 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 2.12 | 2.26 |
| tblVehicleEF | LDA | 7.14 | 7.58 |
| tblVehicleEF | LDA | 232.04 | 242.93 |
| tblVehicleEF | LDA | 57.24 | 59.93 |
| tblVehicleEF | LDA | 0.45 | 0.45 |
| tblVehicleEF | LDA | 0.34 | 0.36 |
| tblVehicleEF | LDA | 0.32 | 0.35 |
| tblVehicleEF | LDA | 1.6070e-003 | 1.6480e-003 |
| tblVehicleEF | LDA | 3.5900e-003 | 3.5020e-003 |
| tblVehicleEF | LDA | 1.4800e-003 | 1.5120e-003 |
| tblVehicleEF | LDA | 3.3110e-003 | 3.2200e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDA | 0.07 | 0.08 |
| tblVehicleEF | LDA | 0.15 | 0.16 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 0.10 | 0.11 |
| tblVehicleEF | LDA | 0.43 | 0.46 |
| tblVehicleEF | LDA | 0.61 | 0.65 |
| tblVehicleEF | LDA | 3.1160e-003 | 3.1180e-003 |
| tblVehicleEF | LDA | 8.6400e-004 | 8.7200e-004 |
| tblVehicleEF | LDA | 0.07 | 0.08 |
| tblVehicleEF | LDA | 0.15 | 0.16 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 0.12 | 0.13 |
| tblVehicleEF | LDA | 0.43 | 0.46 |
| tblVehicleEF | LDA | 0.65 | 0.70 |
| tblVehicleEF | LDT1 | 0.02 | 0.03 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 3.24 | 3.76 |
| tblVehicleEF | LDT1 | 6.12 | 6.93 |
| tblVehicleEF | LDT1 | 290.71 | 303.32 |
| tblVehicleEF | LDT1 | 67.84 | 70.85 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.36 | 0.41 |
| tblVehicleEF | LDT1 | 0.37 | 0.41 |
| tblVehicleEF | LDT1 | 2.9930e-003 | 3.2950e-003 |
| tblVehicleEF | LDT1 | 5.4120e-003 | 5.7030e-003 |
| tblVehicleEF | LDT1 | 2.7510e-003 | 3.0140e-003 |
| tblVehicleEF | LDT1 | 4.9820e-003 | 5.2270e-003 |
| tblVehicleEF | LDT1 | 0.30 | 0.34 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 0.30 | 0.33 |
| tblVehicleEF | LDT1 | 0.21 | 0.23 |
| tblVehicleEF | LDT1 | 0.10 | 0.13 |
| tblVehicleEF | LDT1 | 1.03 | 1.15 |
| tblVehicleEF | LDT1 | 0.45 | 0.52 |
| tblVehicleEF | LDT1 | 3.8320e-003 | 3.8380e-003 |
| tblVehicleEF | LDT1 | 9.6000e-004 | 9.7600e-004 |
| tblVehicleEF | LDT1 | 0.30 | 0.34 |
| tblVehicleEF | LDT1 | 0.30 | 0.33 |
| tblVehicleEF | LDT1 | 0.21 | 0.23 |
| tblVehicleEF | LDT1 | 0.13 | 0.16 |
| tblVehicleEF | LDT1 | 1.03 | 1.15 |
| tblVehicleEF | LDT1 | 0.48 | 0.56 |
| tblVehicleEF | LDT1 | 0.02 | 0.03 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 3.72 | 4.31 |
| tblVehicleEF | LDT1 | 6.42 | 7.28 |
| tblVehicleEF | LDT1 | 297.84 | 310.71 |
| tblVehicleEF | LDT1 | 67.84 | 70.85 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.32 | 0.37 |
| tblVehicleEF | LDT1 | 0.38 | 0.42 |
| tblVehicleEF | LDT1 | 2.9930e-003 | 3.2950e-003 |
| tblVehicleEF | LDT1 | 5.4120e-003 | 5.7030e-003 |
| tblVehicleEF | LDT1 | 2.7510e-003 | 3.0140e-003 |
| tblVehicleEF | LDT1 | 4.9820e-003 | 5.2270e-003 |
| tblVehicleEF | LDT1 | 0.63 | 0.71 |
| tblVehicleEF | LDT1 | 0.40 | 0.45 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 0.35 | 0.39 |
| tblVehicleEF | LDT1 | 0.12 | 0.15 |
| tblVehicleEF | LDT1 | 1.09 | 1.21 |
| tblVehicleEF | LDT1 | 0.46 | 0.53 |
| tblVehicleEF | LDT1 | 3.9350e-003 | 3.9410e-003 |
| tblVehicleEF | LDT1 | 9.6500e-004 | 9.8100e-004 |
| tblVehicleEF | LDT1 | 0.63 | 0.71 |
| tblVehicleEF | LDT1 | 0.40 | 0.45 |
| tblVehicleEF | LDT1 | 0.35 | 0.39 |
| tblVehicleEF | LDT1 | 0.15 | 0.18 |
| tblVehicleEF | LDT1 | 1.09 | 1.21 |
| tblVehicleEF | LDT1 | 0.49 | 0.57 |
| tblVehicleEF | LDT1 | 0.02 | 0.03 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 2.86 | 3.33 |
| tblVehicleEF | LDT1 | 7.55 | 8.55 |
| tblVehicleEF | LDT1 | 275.04 | 287.07 |
| tblVehicleEF | LDT1 | 67.84 | 70.85 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.37 | 0.43 |
| tblVehicleEF | LDT1 | 0.39 | 0.44 |
| tblVehicleEF | LDT1 | 2.9930e-003 | 3.2950e-003 |
| tblVehicleEF | LDT1 | 5.4120e-003 | 5.7030e-003 |
| tblVehicleEF | LDT1 | 2.7510e-003 | 3.0140e-003 |
| tblVehicleEF | LDT1 | 4.9820e-003 | 5.2270e-003 |
| tblVehicleEF | LDT1 | 0.13 | 0.14 |
| tblVehicleEF | LDT1 | 0.26 | 0.30 |
| tblVehicleEF | LDT1 | 0.06 | 0.07 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 0.09 | 0.12 |
| tblVehicleEF | LDT1 | 1.15 | 1.28 |
| tblVehicleEF | LDT1 | 0.53 | 0.62 |
| tblVehicleEF | LDT1 | 3.6190e-003 | 3.6260e-003 |
| tblVehicleEF | LDT1 | 9.8500e-004 | 1.0040e-003 |
| tblVehicleEF | LDT1 | 0.13 | 0.14 |
| tblVehicleEF | LDT1 | 0.26 | 0.30 |
| tblVehicleEF | LDT1 | 0.06 | 0.07 |
| tblVehicleEF | LDT1 | 0.12 | 0.14 |
| tblVehicleEF | LDT1 | 1.15 | 1.28 |
| tblVehicleEF | LDT1 | 0.57 | 0.66 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |
| tblVehicleEF | LDT2 | 1.89 | 2.17 |
| tblVehicleEF | LDT2 | 3.90 | 4.45 |
| tblVehicleEF | LDT2 | 362.13 | 375.84 |
| tblVehicleEF | LDT2 | 83.72 | 86.86 |
| tblVehicleEF | LDT2 | 0.17 | 0.17 |
| tblVehicleEF | LDT2 | 0.24 | 0.28 |
| tblVehicleEF | LDT2 | 0.39 | 0.45 |
| tblVehicleEF | LDT2 | 1.6430e-003 | 1.7150e-003 |
| tblVehicleEF | LDT2 | 3.4820e-003 | 3.4150e-003 |
| tblVehicleEF | LDT2 | 1.5100e-003 | 1.5670e-003 |
| tblVehicleEF | LDT2 | 3.2090e-003 | 3.1320e-003 |
| tblVehicleEF | LDT2 | 0.15 | 0.17 |
| tblVehicleEF | LDT2 | 0.18 | 0.19 |
| tblVehicleEF | LDT2 | 0.11 | 0.12 |
| tblVehicleEF | LDT2 | 0.05 | 0.06 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 0.59 | 0.64 |
| tblVehicleEF | LDT2 | 0.25 | 0.30 |
| tblVehicleEF | LDT2 | 4.4820e-003 | 4.4870e-003 |
| tblVehicleEF | LDT2 | 1.0740e-003 | 1.0840e-003 |
| tblVehicleEF | LDT2 | 0.15 | 0.17 |
| tblVehicleEF | LDT2 | 0.18 | 0.19 |
| tblVehicleEF | LDT2 | 0.11 | 0.12 |
| tblVehicleEF | LDT2 | 0.07 | 0.08 |
| tblVehicleEF | LDT2 | 0.59 | 0.64 |
| tblVehicleEF | LDT2 | 0.27 | 0.32 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |
| tblVehicleEF | LDT2 | 2.16 | 2.48 |
| tblVehicleEF | LDT2 | 4.07 | 4.65 |
| tblVehicleEF | LDT2 | 371.33 | 385.36 |
| tblVehicleEF | LDT2 | 83.72 | 86.86 |
| tblVehicleEF | LDT2 | 0.17 | 0.17 |
| tblVehicleEF | LDT2 | 0.21 | 0.25 |
| tblVehicleEF | LDT2 | 0.40 | 0.46 |
| tblVehicleEF | LDT2 | 1.6430e-003 | 1.7150e-003 |
| tblVehicleEF | LDT2 | 3.4820e-003 | 3.4150e-003 |
| tblVehicleEF | LDT2 | 1.5100e-003 | 1.5670e-003 |
| tblVehicleEF | LDT2 | 3.2090e-003 | 3.1320e-003 |
| tblVehicleEF | LDT2 | 0.32 | 0.35 |
| tblVehicleEF | LDT2 | 0.23 | 0.26 |
| tblVehicleEF | LDT2 | 0.19 | 0.21 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.61 | 0.67 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDT2 | 0.26 | 0.30 |
| tblVehicleEF | LDT2 | 4.6000e-003 | 4.6050e-003 |
| tblVehicleEF | LDT2 | 1.0770e-003 | 1.0870e-003 |
| tblVehicleEF | LDT2 | 0.32 | 0.35 |
| tblVehicleEF | LDT2 | 0.23 | 0.26 |
| tblVehicleEF | LDT2 | 0.19 | 0.21 |
| tblVehicleEF | LDT2 | 0.08 | 0.09 |
| tblVehicleEF | LDT2 | 0.61 | 0.67 |
| tblVehicleEF | LDT2 | 0.27 | 0.32 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |
| tblVehicleEF | LDT2 | 1.65 | 1.90 |
| tblVehicleEF | LDT2 | 4.84 | 5.52 |
| tblVehicleEF | LDT2 | 341.91 | 354.92 |
| tblVehicleEF | LDT2 | 83.72 | 86.86 |
| tblVehicleEF | LDT2 | 0.17 | 0.17 |
| tblVehicleEF | LDT2 | 0.24 | 0.28 |
| tblVehicleEF | LDT2 | 0.42 | 0.48 |
| tblVehicleEF | LDT2 | 1.6430e-003 | 1.7150e-003 |
| tblVehicleEF | LDT2 | 3.4820e-003 | 3.4150e-003 |
| tblVehicleEF | LDT2 | 1.5100e-003 | 1.5670e-003 |
| tblVehicleEF | LDT2 | 3.2090e-003 | 3.1320e-003 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.16 | 0.17 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.66 | 0.71 |
| tblVehicleEF | LDT2 | 0.30 | 0.35 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 4.2270e-003 | 4.2330e-003 |
| tblVehicleEF | LDT2 | 1.0900e-003 | 1.1020e-003 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.16 | 0.17 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.66 | 0.71 |
| tblVehicleEF | LDT2 | 0.32 | 0.37 |
| tblVehicleEF | LHD1 | 1.2690e-003 | 1.2700e-003 |
| tblVehicleEF | LHD1 | 9.7930e-003 | 0.01 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.18 | 0.18 |
| tblVehicleEF | LHD1 | 1.16 | 1.29 |
| tblVehicleEF | LHD1 | 3.79 | 4.03 |
| tblVehicleEF | LHD1 | 8.63 | 8.76 |
| tblVehicleEF | LHD1 | 517.21 | 525.58 |
| tblVehicleEF | LHD1 | 35.27 | 35.68 |
| tblVehicleEF | LHD1 | 0.04 | 0.04 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 1.83 | 2.02 |
| tblVehicleEF | LHD1 | 1.40 | 1.44 |
| tblVehicleEF | LHD1 | 8.4600e-004 | 8.5500e-004 |
| tblVehicleEF | LHD1 | 0.05 | 0.05 |
| tblVehicleEF | LHD1 | 0.01 | 0.01 |
| tblVehicleEF | LHD1 | 8.1000e-004 | 8.9800e-004 |
| tblVehicleEF | LHD1 | 7.7900e-004 | 7.8700e-004 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 9.2110e-003 | 9.8140e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 7.5000e-004 | 8.3100e-004 |
| tblVehicleEF | LHD1 | 4.4200e-003 | 4.6750e-003 |
| tblVehicleEF | LHD1 | 0.07 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.1360e-003 | 2.2310e-003 |
| tblVehicleEF | LHD1 | 0.08 | 0.09 |
| tblVehicleEF | LHD1 | 0.42 | 0.44 |
| tblVehicleEF | LHD1 | 0.40 | 0.42 |
| tblVehicleEF | LHD1 | 5.3570e-003 | 5.3610e-003 |
| tblVehicleEF | LHD1 | 4.4300e-004 | 4.4600e-004 |
| tblVehicleEF | LHD1 | 4.4200e-003 | 4.6750e-003 |
| tblVehicleEF | LHD1 | 0.07 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.1360e-003 | 2.2310e-003 |
| tblVehicleEF | LHD1 | 0.10 | 0.11 |
| tblVehicleEF | LHD1 | 0.42 | 0.44 |
| tblVehicleEF | LHD1 | 0.42 | 0.45 |
| tblVehicleEF | LHD1 | 1.2690e-003 | 1.2700e-003 |
| tblVehicleEF | LHD1 | 9.7930e-003 | 0.01 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.18 | 0.18 |
| tblVehicleEF | LHD1 | 1.18 | 1.31 |
| tblVehicleEF | LHD1 | 3.38 | 3.60 |
| tblVehicleEF | LHD1 | 8.63 | 8.76 |
| tblVehicleEF | LHD1 | 517.21 | 525.58 |
| tblVehicleEF | LHD1 | 35.27 | 35.68 |
| tblVehicleEF | LHD1 | 0.04 | 0.04 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 1.64 | 1.81 |
| tblVehicleEF | LHD1 | 1.38 | 1.41 |
| tblVehicleEF | LHD1 | 8.4600e-004 | 8.5500e-004 |
| tblVehicleEF | LHD1 | 0.05 | 0.05 |
| tblVehicleEF | LHD1 | 0.01 | 0.01 |
| tblVehicleEF | LHD1 | 8.1000e-004 | 8.9800e-004 |
| tblVehicleEF | LHD1 | 7.7900e-004 | 7.8700e-004 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 9.2110e-003 | 9.8140e-003 |
| tblVehicleEF | LHD1 | 7.5000e-004 | 8.3100e-004 |
| tblVehicleEF | LHD1 | 9.0780e-003 | 9.6080e-003 |
| tblVehicleEF | LHD1 | 0.09 | 0.10 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 3.4560e-003 | 3.6360e-003 |
| tblVehicleEF | LHD1 | 0.09 | 0.09 |
| tblVehicleEF | LHD1 | 0.43 | 0.45 |
| tblVehicleEF | LHD1 | 0.37 | 0.40 |
| tblVehicleEF | LHD1 | 5.3570e-003 | 5.3620e-003 |
| tblVehicleEF | LHD1 | 4.3500e-004 | 4.3800e-004 |
| tblVehicleEF | LHD1 | 9.0780e-003 | 9.6080e-003 |
| tblVehicleEF | LHD1 | 0.09 | 0.10 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 3.4560e-003 | 3.6360e-003 |
| tblVehicleEF | LHD1 | 0.10 | 0.11 |
| tblVehicleEF | LHD1 | 0.43 | 0.45 |
| tblVehicleEF | LHD1 | 0.40 | 0.42 |
| tblVehicleEF | LHD1 | 1.2690e-003 | 1.2700e-003 |
| tblVehicleEF | LHD1 | 9.7930e-003 | 0.01 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.18 | 0.18 |
| tblVehicleEF | LHD1 | 1.13 | 1.26 |
| tblVehicleEF | LHD1 | 4.82 | 5.14 |
| tblVehicleEF | LHD1 | 8.63 | 8.76 |
| tblVehicleEF | LHD1 | 517.21 | 525.58 |
| tblVehicleEF | LHD1 | 35.27 | 35.68 |
| tblVehicleEF | LHD1 | 0.04 | 0.04 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 1.87 | 2.06 |
| tblVehicleEF | LHD1 | 1.47 | 1.51 |
| tblVehicleEF | LHD1 | 8.4600e-004 | 8.5500e-004 |
| tblVehicleEF | LHD1 | 0.05 | 0.05 |
| tblVehicleEF | LHD1 | 0.01 | 0.01 |
| tblVehicleEF | LHD1 | 8.1000e-004 | 8.9800e-004 |
| tblVehicleEF | LHD1 | 7.7900e-004 | 7.8700e-004 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 9.2110e-003 | 9.8140e-003 |
| tblVehicleEF | LHD1 | 7.5000e-004 | 8.3100e-004 |
| tblVehicleEF | LHD1 | 1.9690e-003 | 2.0890e-003 |
| tblVehicleEF | LHD1 | 0.06 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 7.3200e-004 | 7.5200e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.09 |
| tblVehicleEF | LHD1 | 0.44 | 0.46 |
| tblVehicleEF | LHD1 | 0.46 | 0.49 |
| tblVehicleEF | LHD1 | 5.3570e-003 | 5.3610e-003 |
| tblVehicleEF | LHD1 | 4.6100e-004 | 4.6500e-004 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 1.9690e-003 | 2.0890e-003 |
| tblVehicleEF | LHD1 | 0.06 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 7.3200e-004 | 7.5200e-004 |
| tblVehicleEF | LHD1 | 0.10 | 0.11 |
| tblVehicleEF | LHD1 | 0.44 | 0.46 |
| tblVehicleEF | LHD1 | 0.49 | 0.52 |
| tblVehicleEF | LHD2 | 9.1000e-004 | 9.1100e-004 |
| tblVehicleEF | LHD2 | 7.0380e-003 | 7.8700e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.14 | 0.14 |
| tblVehicleEF | LHD2 | 0.87 | 1.00 |
| tblVehicleEF | LHD2 | 2.26 | 2.50 |
| tblVehicleEF | LHD2 | 9.49 | 9.64 |
| tblVehicleEF | LHD2 | 507.97 | 516.33 |
| tblVehicleEF | LHD2 | 21.01 | 21.44 |
| tblVehicleEF | LHD2 | 5.5930e-003 | 5.5950e-003 |
| tblVehicleEF | LHD2 | 0.13 | 0.13 |
| tblVehicleEF | LHD2 | 2.42 | 2.67 |
| tblVehicleEF | LHD2 | 0.79 | 0.82 |
| tblVehicleEF | LHD2 | 1.4380e-003 | 1.4470e-003 |
| tblVehicleEF | LHD2 | 0.07 | 0.07 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 5.2100e-004 | 6.3200e-004 |
| tblVehicleEF | LHD2 | 1.3230e-003 | 1.3310e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.03 |
| tblVehicleEF | LHD2 | 2.6680e-003 | 2.6690e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.5800e-004 | 5.5000e-004 |
| tblVehicleEF | LHD2 | 2.5270e-003 | 2.8110e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.2190e-003 | 1.3330e-003 |
| tblVehicleEF | LHD2 | 0.08 | 0.09 |
| tblVehicleEF | LHD2 | 0.25 | 0.27 |
| tblVehicleEF | LHD2 | 0.22 | 0.24 |
| tblVehicleEF | LHD2 | 5.1930e-003 | 5.1980e-003 |
| tblVehicleEF | LHD2 | 2.6300e-004 | 2.6900e-004 |
| tblVehicleEF | LHD2 | 2.5270e-003 | 2.8110e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.2190e-003 | 1.3330e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.10 |
| tblVehicleEF | LHD2 | 0.25 | 0.27 |
| tblVehicleEF | LHD2 | 0.24 | 0.26 |
| tblVehicleEF | LHD2 | 9.1000e-004 | 9.1100e-004 |
| tblVehicleEF | LHD2 | 7.0380e-003 | 7.8700e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.14 | 0.14 |
| tblVehicleEF | LHD2 | 0.89 | 1.03 |
| tblVehicleEF | LHD2 | 2.05 | 2.28 |
| tblVehicleEF | LHD2 | 9.49 | 9.64 |
| tblVehicleEF | LHD2 | 507.97 | 516.33 |
| tblVehicleEF | LHD2 | 21.01 | 21.44 |
| tblVehicleEF | LHD2 | 5.5930e-003 | 5.5950e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LHD2 | 0.13 | 0.13 |
| tblVehicleEF | LHD2 | 2.19 | 2.42 |
| tblVehicleEF | LHD2 | 0.78 | 0.81 |
| tblVehicleEF | LHD2 | 1.4380e-003 | 1.4470e-003 |
| tblVehicleEF | LHD2 | 0.07 | 0.07 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 5.2100e-004 | 6.3200e-004 |
| tblVehicleEF | LHD2 | 1.3230e-003 | 1.3310e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.03 |
| tblVehicleEF | LHD2 | 2.6680e-003 | 2.6690e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.5800e-004 | 5.5000e-004 |
| tblVehicleEF | LHD2 | 5.2230e-003 | 5.8260e-003 |
| tblVehicleEF | LHD2 | 0.06 | 0.06 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.9850e-003 | 2.1890e-003 |
| tblVehicleEF | LHD2 | 0.08 | 0.09 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |
| tblVehicleEF | LHD2 | 0.21 | 0.23 |
| tblVehicleEF | LHD2 | 5.1940e-003 | 5.1990e-003 |
| tblVehicleEF | LHD2 | 2.6000e-004 | 2.6500e-004 |
| tblVehicleEF | LHD2 | 5.2230e-003 | 5.8260e-003 |
| tblVehicleEF | LHD2 | 0.06 | 0.06 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.9850e-003 | 2.1890e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.10 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.22 | 0.25 |
| tblVehicleEF | LHD2 | 9.1000e-004 | 9.1100e-004 |
| tblVehicleEF | LHD2 | 7.0380e-003 | 7.8700e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.14 | 0.14 |
| tblVehicleEF | LHD2 | 0.86 | 0.99 |
| tblVehicleEF | LHD2 | 2.81 | 3.10 |
| tblVehicleEF | LHD2 | 9.49 | 9.64 |
| tblVehicleEF | LHD2 | 507.97 | 516.33 |
| tblVehicleEF | LHD2 | 21.01 | 21.44 |
| tblVehicleEF | LHD2 | 5.5930e-003 | 5.5950e-003 |
| tblVehicleEF | LHD2 | 0.13 | 0.13 |
| tblVehicleEF | LHD2 | 2.45 | 2.71 |
| tblVehicleEF | LHD2 | 0.83 | 0.86 |
| tblVehicleEF | LHD2 | 1.4380e-003 | 1.4470e-003 |
| tblVehicleEF | LHD2 | 0.07 | 0.07 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 5.2100e-004 | 6.3200e-004 |
| tblVehicleEF | LHD2 | 1.3230e-003 | 1.3310e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.03 |
| tblVehicleEF | LHD2 | 2.6680e-003 | 2.6690e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.5800e-004 | 5.5000e-004 |
| tblVehicleEF | LHD2 | 1.1090e-003 | 1.2360e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 3.9800e-004 | 4.2600e-004 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.08 | 0.09 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |
| tblVehicleEF | LHD2 | 0.25 | 0.28 |
| tblVehicleEF | LHD2 | 5.1930e-003 | 5.1980e-003 |
| tblVehicleEF | LHD2 | 2.7300e-004 | 2.7900e-004 |
| tblVehicleEF | LHD2 | 1.1090e-003 | 1.2360e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 3.9800e-004 | 4.2600e-004 |
| tblVehicleEF | LHD2 | 0.09 | 0.10 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |
| tblVehicleEF | LHD2 | 0.27 | 0.30 |
| tblVehicleEF | MCY | 28.21 | 29.28 |
| tblVehicleEF | MCY | 9.55 | 9.53 |
| tblVehicleEF | MCY | 150.07 | 150.22 |
| tblVehicleEF | MCY | 41.75 | 43.15 |
| tblVehicleEF | MCY | 2.3740e-003 | 2.3930e-003 |
| tblVehicleEF | MCY | 1.24 | 1.25 |
| tblVehicleEF | MCY | 0.30 | 0.30 |
| tblVehicleEF | MCY | 4.4700e-004 | 5.1600e-004 |
| tblVehicleEF | MCY | 1.2100e-003 | 1.3910e-003 |
| tblVehicleEF | MCY | 3.6800e-004 | 4.2200e-004 |
| tblVehicleEF | MCY | 9.8500e-004 | 1.1200e-003 |
| tblVehicleEF | MCY | 2.15 | 2.17 |
| tblVehicleEF | MCY | 0.68 | 0.70 |
| tblVehicleEF | MCY | 1.36 | 1.38 |
| tblVehicleEF | MCY | 2.70 | 2.74 |
| tblVehicleEF | MCY | 1.45 | 1.54 |

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|---|---|---|---|
| tblVehicleEF | MCY | 1.98 | 1.99 |
| tblVehicleEF | MCY | 2.1070e-003 | 2.1020e-003 |
| tblVehicleEF | MCY | 6.5200e-004 | 6.5900e-004 |
| tblVehicleEF | MCY | 2.15 | 2.17 |
| tblVehicleEF | MCY | 0.68 | 0.70 |
| tblVehicleEF | MCY | 1.36 | 1.38 |
| tblVehicleEF | MCY | 2.96 | 2.99 |
| tblVehicleEF | MCY | 1.45 | 1.54 |
| tblVehicleEF | MCY | 2.12 | 2.14 |
| tblVehicleEF | MCY | 31.32 | 32.54 |
| tblVehicleEF | MCY | 9.34 | 9.36 |
| tblVehicleEF | MCY | 150.07 | 150.22 |
| tblVehicleEF | MCY | 41.75 | 43.15 |
| tblVehicleEF | MCY | 2.3740e-003 | 2.3930e-003 |
| tblVehicleEF | MCY | 1.01 | 1.02 |
| tblVehicleEF | MCY | 0.29 | 0.29 |
| tblVehicleEF | MCY | 4.4700e-004 | 5.1600e-004 |
| tblVehicleEF | MCY | 1.2100e-003 | 1.3910e-003 |
| tblVehicleEF | MCY | 3.6800e-004 | 4.2200e-004 |
| tblVehicleEF | MCY | 9.8500e-004 | 1.1200e-003 |
| tblVehicleEF | MCY | 4.48 | 4.54 |
| tblVehicleEF | MCY | 1.17 | 1.19 |
| tblVehicleEF | MCY | 2.56 | 2.58 |
| tblVehicleEF | MCY | 2.74 | 2.77 |
| tblVehicleEF | MCY | 1.52 | 1.61 |
| tblVehicleEF | MCY | 1.89 | 1.91 |
| tblVehicleEF | MCY | 2.1570e-003 | 2.1550e-003 |
| tblVehicleEF | MCY | 6.4500e-004 | 6.5400e-004 |

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|---|---|---|---|
| tblVehicleEF | MCY | 4.48 | 4.54 |
| tblVehicleEF | MCY | 1.17 | 1.19 |
| tblVehicleEF | MCY | 2.56 | 2.58 |
| tblVehicleEF | MCY | 2.99 | 3.03 |
| tblVehicleEF | MCY | 1.52 | 1.61 |
| tblVehicleEF | MCY | 2.03 | 2.05 |
| tblVehicleEF | MCY | 28.43 | 29.53 |
| tblVehicleEF | MCY | 10.93 | 10.85 |
| tblVehicleEF | MCY | 150.07 | 150.22 |
| tblVehicleEF | MCY | 41.75 | 43.15 |
| tblVehicleEF | MCY | 2.3740e-003 | 2.3930e-003 |
| tblVehicleEF | MCY | 1.32 | 1.33 |
| tblVehicleEF | MCY | 0.32 | 0.32 |
| tblVehicleEF | MCY | 4.4700e-004 | 5.1600e-004 |
| tblVehicleEF | MCY | 1.2100e-003 | 1.3910e-003 |
| tblVehicleEF | MCY | 3.6800e-004 | 4.2200e-004 |
| tblVehicleEF | MCY | 9.8500e-004 | 1.1200e-003 |
| tblVehicleEF | MCY | 0.94 | 0.95 |
| tblVehicleEF | MCY | 0.50 | 0.52 |
| tblVehicleEF | MCY | 0.26 | 0.27 |
| tblVehicleEF | MCY | 2.78 | 2.82 |
| tblVehicleEF | MCY | 1.63 | 1.72 |
| tblVehicleEF | MCY | 2.29 | 2.31 |
| tblVehicleEF | MCY | 2.1130e-003 | 2.1090e-003 |
| tblVehicleEF | MCY | 6.8300e-004 | 6.9000e-004 |
| tblVehicleEF | MCY | 0.94 | 0.95 |
| tblVehicleEF | MCY | 0.50 | 0.52 |
| tblVehicleEF | MCY | 0.26 | 0.27 |

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|---|---|---|---|
| tblVehicleEF | MCY | 3.03 | 3.08 |
| tblVehicleEF | MCY | 1.63 | 1.72 |
| tblVehicleEF | MCY | 2.46 | 2.48 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 2.36 | 2.59 |
| tblVehicleEF | MDV | 5.75 | 6.27 |
| tblVehicleEF | MDV | 476.77 | 493.22 |
| tblVehicleEF | MDV | 109.52 | 112.99 |
| tblVehicleEF | MDV | 0.16 | 0.16 |
| tblVehicleEF | MDV | 0.37 | 0.42 |
| tblVehicleEF | MDV | 0.64 | 0.71 |
| tblVehicleEF | MDV | 1.6430e-003 | 1.6670e-003 |
| tblVehicleEF | MDV | 3.4800e-003 | 3.3970e-003 |
| tblVehicleEF | MDV | 1.5180e-003 | 1.5390e-003 |
| tblVehicleEF | MDV | 3.2210e-003 | 3.1410e-003 |
| tblVehicleEF | MDV | 0.17 | 0.18 |
| tblVehicleEF | MDV | 0.22 | 0.23 |
| tblVehicleEF | MDV | 0.14 | 0.14 |
| tblVehicleEF | MDV | 0.07 | 0.07 |
| tblVehicleEF | MDV | 0.76 | 0.77 |
| tblVehicleEF | MDV | 0.42 | 0.47 |
| tblVehicleEF | MDV | 5.7100e-003 | 5.7090e-003 |
| tblVehicleEF | MDV | 1.3760e-003 | 1.3830e-003 |
| tblVehicleEF | MDV | 0.17 | 0.18 |
| tblVehicleEF | MDV | 0.22 | 0.23 |
| tblVehicleEF | MDV | 0.14 | 0.14 |
| tblVehicleEF | MDV | 0.09 | 0.10 |

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|---|---|---|---|
| tblVehicleEF | MDV | 0.76 | 0.77 |
| tblVehicleEF | MDV | 0.45 | 0.50 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 2.69 | 2.95 |
| tblVehicleEF | MDV | 5.99 | 6.54 |
| tblVehicleEF | MDV | 488.78 | 505.60 |
| tblVehicleEF | MDV | 109.52 | 112.99 |
| tblVehicleEF | MDV | 0.16 | 0.16 |
| tblVehicleEF | MDV | 0.34 | 0.38 |
| tblVehicleEF | MDV | 0.65 | 0.72 |
| tblVehicleEF | MDV | 1.6430e-003 | 1.6670e-003 |
| tblVehicleEF | MDV | 3.4800e-003 | 3.3970e-003 |
| tblVehicleEF | MDV | 1.5180e-003 | 1.5390e-003 |
| tblVehicleEF | MDV | 3.2210e-003 | 3.1410e-003 |
| tblVehicleEF | MDV | 0.36 | 0.37 |
| tblVehicleEF | MDV | 0.29 | 0.30 |
| tblVehicleEF | MDV | 0.22 | 0.22 |
| tblVehicleEF | MDV | 0.07 | 0.08 |
| tblVehicleEF | MDV | 0.80 | 0.81 |
| tblVehicleEF | MDV | 0.43 | 0.47 |
| tblVehicleEF | MDV | 5.8600e-003 | 5.8580e-003 |
| tblVehicleEF | MDV | 1.3800e-003 | 1.3870e-003 |
| tblVehicleEF | MDV | 0.36 | 0.37 |
| tblVehicleEF | MDV | 0.29 | 0.30 |
| tblVehicleEF | MDV | 0.22 | 0.22 |
| tblVehicleEF | MDV | 0.10 | 0.11 |
| tblVehicleEF | MDV | 0.80 | 0.81 |

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|---|---|---|---|
| tblVehicleEF | MDV | 0.45 | 0.50 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 2.05 | 2.25 |
| tblVehicleEF | MDV | 7.13 | 7.78 |
| tblVehicleEF | MDV | 450.37 | 465.99 |
| tblVehicleEF | MDV | 109.52 | 112.99 |
| tblVehicleEF | MDV | 0.16 | 0.16 |
| tblVehicleEF | MDV | 0.38 | 0.43 |
| tblVehicleEF | MDV | 0.69 | 0.76 |
| tblVehicleEF | MDV | 1.6430e-003 | 1.6670e-003 |
| tblVehicleEF | MDV | 3.4800e-003 | 3.3970e-003 |
| tblVehicleEF | MDV | 1.5180e-003 | 1.5390e-003 |
| tblVehicleEF | MDV | 3.2210e-003 | 3.1410e-003 |
| tblVehicleEF | MDV | 0.07 | 0.07 |
| tblVehicleEF | MDV | 0.20 | 0.20 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.85 | 0.86 |
| tblVehicleEF | MDV | 0.50 | 0.56 |
| tblVehicleEF | MDV | 5.3890e-003 | 5.3880e-003 |
| tblVehicleEF | MDV | 1.4000e-003 | 1.4090e-003 |
| tblVehicleEF | MDV | 0.07 | 0.07 |
| tblVehicleEF | MDV | 0.20 | 0.20 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 0.08 | 0.09 |
| tblVehicleEF | MDV | 0.85 | 0.86 |
| tblVehicleEF | MDV | 0.53 | 0.59 |

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|---|---|---|---|
| tblVehicleEF | MH | 4.83 | 6.32 |
| tblVehicleEF | MH | 9.62 | 10.99 |
| tblVehicleEF | MH | 578.24 | 587.55 |
| tblVehicleEF | MH | 32.21 | 33.59 |
| tblVehicleEF | MH | 2.0580e-003 | 2.0540e-003 |
| tblVehicleEF | MH | 1.59 | 1.79 |
| tblVehicleEF | MH | 1.14 | 1.23 |
| tblVehicleEF | MH | 0.05 | 0.05 |
| tblVehicleEF | MH | 8.3990e-003 | 8.4010e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.5000e-003 | 1.9550e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.3270e-003 | 1.7030e-003 |
| tblVehicleEF | MH | 2.83 | 3.26 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.90 | 1.03 |
| tblVehicleEF | MH | 0.12 | 0.15 |
| tblVehicleEF | MH | 2.24 | 2.48 |
| tblVehicleEF | MH | 0.61 | 0.72 |
| tblVehicleEF | MH | 6.1080e-003 | 6.1340e-003 |
| tblVehicleEF | MH | 5.0900e-004 | 5.4300e-004 |
| tblVehicleEF | MH | 2.83 | 3.26 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.90 | 1.03 |
| tblVehicleEF | MH | 0.15 | 0.19 |
| tblVehicleEF | MH | 2.24 | 2.48 |
| tblVehicleEF | MH | 0.65 | 0.77 |

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|---|---|---|---|
| tblVehicleEF | MH | 5.03 | 6.62 |
| tblVehicleEF | MH | 8.51 | 9.76 |
| tblVehicleEF | MH | 578.24 | 587.55 |
| tblVehicleEF | MH | 32.21 | 33.59 |
| tblVehicleEF | MH | 2.0580e-003 | 2.0540e-003 |
| tblVehicleEF | MH | 1.36 | 1.53 |
| tblVehicleEF | MH | 1.12 | 1.20 |
| tblVehicleEF | MH | 0.05 | 0.05 |
| tblVehicleEF | MH | 8.3990e-003 | 8.4010e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.5000e-003 | 1.9550e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.3270e-003 | 1.7030e-003 |
| tblVehicleEF | MH | 5.90 | 6.80 |
| tblVehicleEF | MH | 0.14 | 0.16 |
| tblVehicleEF | MH | 1.37 | 1.58 |
| tblVehicleEF | MH | 0.12 | 0.16 |
| tblVehicleEF | MH | 2.27 | 2.51 |
| tblVehicleEF | MH | 0.56 | 0.66 |
| tblVehicleEF | MH | 6.1120e-003 | 6.1390e-003 |
| tblVehicleEF | MH | 4.9000e-004 | 5.2200e-004 |
| tblVehicleEF | MH | 5.90 | 6.80 |
| tblVehicleEF | MH | 0.14 | 0.16 |
| tblVehicleEF | MH | 1.37 | 1.58 |
| tblVehicleEF | MH | 0.15 | 0.19 |
| tblVehicleEF | MH | 2.27 | 2.51 |
| tblVehicleEF | MH | 0.60 | 0.71 |

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|---|---|---|---|
| tblVehicleEF | MH | 4.67 | 6.13 |
| tblVehicleEF | MH | 12.61 | 14.36 |
| tblVehicleEF | MH | 578.24 | 587.55 |
| tblVehicleEF | MH | 32.21 | 33.59 |
| tblVehicleEF | MH | 2.0580e-003 | 2.0540e-003 |
| tblVehicleEF | MH | 1.66 | 1.87 |
| tblVehicleEF | MH | 1.20 | 1.29 |
| tblVehicleEF | MH | 0.05 | 0.05 |
| tblVehicleEF | MH | 8.3990e-003 | 8.4010e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.5000e-003 | 1.9550e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.3270e-003 | 1.7030e-003 |
| tblVehicleEF | MH | 1.41 | 1.62 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.36 | 0.41 |
| tblVehicleEF | MH | 0.12 | 0.15 |
| tblVehicleEF | MH | 2.32 | 2.57 |
| tblVehicleEF | MH | 0.74 | 0.88 |
| tblVehicleEF | MH | 6.1060e-003 | 6.1310e-003 |
| tblVehicleEF | MH | 5.6000e-004 | 6.0100e-004 |
| tblVehicleEF | MH | 1.41 | 1.62 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.36 | 0.41 |
| tblVehicleEF | MH | 0.14 | 0.18 |
| tblVehicleEF | MH | 2.32 | 2.57 |
| tblVehicleEF | MH | 0.80 | 0.94 |

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|---|---|---|---|
| tblVehicleEF | MHD | 8.2170e-003 | 8.7450e-003 |
| tblVehicleEF | MHD | 3.4250e-003 | 3.9360e-003 |
| tblVehicleEF | MHD | 1.86 | 1.90 |
| tblVehicleEF | MHD | 1.42 | 1.74 |
| tblVehicleEF | MHD | 19.14 | 21.71 |
| tblVehicleEF | MHD | 593.73 | 599.36 |
| tblVehicleEF | MHD | 841.36 | 857.48 |
| tblVehicleEF | MHD | 58.04 | 61.87 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.60 | 6.98 |
| tblVehicleEF | MHD | 2.89 | 3.35 |
| tblVehicleEF | MHD | 2.12 | 2.29 |
| tblVehicleEF | MHD | 0.03 | 0.04 |
| tblVehicleEF | MHD | 0.10 | 0.10 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 0.08 | 0.10 |
| tblVehicleEF | MHD | 3.4720e-003 | 4.5650e-003 |
| tblVehicleEF | MHD | 0.03 | 0.04 |
| tblVehicleEF | MHD | 0.04 | 0.04 |
| tblVehicleEF | MHD | 2.6740e-003 | 2.6780e-003 |
| tblVehicleEF | MHD | 0.08 | 0.09 |
| tblVehicleEF | MHD | 2.8940e-003 | 3.7500e-003 |
| tblVehicleEF | MHD | 8.1560e-003 | 9.7400e-003 |
| tblVehicleEF | MHD | 0.20 | 0.25 |
| tblVehicleEF | MHD | 0.18 | 0.19 |
| tblVehicleEF | MHD | 3.8230e-003 | 4.5030e-003 |
| tblVehicleEF | MHD | 0.11 | 0.13 |
| tblVehicleEF | MHD | 0.87 | 1.03 |

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|---|---|---|---|
| tblVehicleEF | MHD | 1.44 | 1.71 |
| tblVehicleEF | MHD | 5.9630e-003 | 5.9260e-003 |
| tblVehicleEF | MHD | 8.5480e-003 | 8.5790e-003 |
| tblVehicleEF | MHD | 9.5600e-004 | 1.0350e-003 |
| tblVehicleEF | MHD | 8.1560e-003 | 9.7400e-003 |
| tblVehicleEF | MHD | 0.20 | 0.25 |
| tblVehicleEF | MHD | 0.20 | 0.21 |
| tblVehicleEF | MHD | 3.8230e-003 | 4.5030e-003 |
| tblVehicleEF | MHD | 0.13 | 0.15 |
| tblVehicleEF | MHD | 0.87 | 1.03 |
| tblVehicleEF | MHD | 1.55 | 1.83 |
| tblVehicleEF | MHD | 7.7440e-003 | 8.2410e-003 |
| tblVehicleEF | MHD | 3.4250e-003 | 3.9360e-003 |
| tblVehicleEF | MHD | 1.35 | 1.38 |
| tblVehicleEF | MHD | 1.48 | 1.81 |
| tblVehicleEF | MHD | 17.63 | 20.20 |
| tblVehicleEF | MHD | 629.00 | 634.97 |
| tblVehicleEF | MHD | 841.36 | 857.48 |
| tblVehicleEF | MHD | 58.04 | 61.87 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.81 | 7.20 |
| tblVehicleEF | MHD | 2.59 | 3.01 |
| tblVehicleEF | MHD | 2.08 | 2.25 |
| tblVehicleEF | MHD | 0.03 | 0.03 |
| tblVehicleEF | MHD | 0.10 | 0.10 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 0.08 | 0.10 |
| tblVehicleEF | MHD | 3.4720e-003 | 4.5650e-003 |

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|---|---|---|---|
| tblVehicleEF | MHD | 0.02 | 0.03 |
| tblVehicleEF | MHD | 0.04 | 0.04 |
| tblVehicleEF | MHD | 2.6740e-003 | 2.6780e-003 |
| tblVehicleEF | MHD | 0.08 | 0.09 |
| tblVehicleEF | MHD | 2.8940e-003 | 3.7500e-003 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 0.25 | 0.32 |
| tblVehicleEF | MHD | 0.17 | 0.18 |
| tblVehicleEF | MHD | 6.2270e-003 | 7.3600e-003 |
| tblVehicleEF | MHD | 0.11 | 0.13 |
| tblVehicleEF | MHD | 0.90 | 1.07 |
| tblVehicleEF | MHD | 1.36 | 1.61 |
| tblVehicleEF | MHD | 6.3170e-003 | 6.2780e-003 |
| tblVehicleEF | MHD | 8.5480e-003 | 8.5800e-003 |
| tblVehicleEF | MHD | 9.3000e-004 | 1.0080e-003 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 0.25 | 0.32 |
| tblVehicleEF | MHD | 0.19 | 0.20 |
| tblVehicleEF | MHD | 6.2270e-003 | 7.3600e-003 |
| tblVehicleEF | MHD | 0.13 | 0.15 |
| tblVehicleEF | MHD | 0.90 | 1.07 |
| tblVehicleEF | MHD | 1.46 | 1.73 |
| tblVehicleEF | MHD | 8.8710e-003 | 9.4400e-003 |
| tblVehicleEF | MHD | 3.4250e-003 | 3.9360e-003 |
| tblVehicleEF | MHD | 2.56 | 2.61 |
| tblVehicleEF | MHD | 1.40 | 1.72 |
| tblVehicleEF | MHD | 23.67 | 26.56 |
| tblVehicleEF | MHD | 545.01 | 550.19 |

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|---|---|---|---|
| tblVehicleEF | MHD | 841.36 | 857.48 |
| tblVehicleEF | MHD | 58.04 | 61.87 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.31 | 6.67 |
| tblVehicleEF | MHD | 2.93 | 3.40 |
| tblVehicleEF | MHD | 2.23 | 2.41 |
| tblVehicleEF | MHD | 0.04 | 0.05 |
| tblVehicleEF | MHD | 0.10 | 0.10 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 0.08 | 0.10 |
| tblVehicleEF | MHD | 3.4720e-003 | 4.5650e-003 |
| tblVehicleEF | MHD | 0.03 | 0.04 |
| tblVehicleEF | MHD | 0.04 | 0.04 |
| tblVehicleEF | MHD | 2.6740e-003 | 2.6780e-003 |
| tblVehicleEF | MHD | 0.08 | 0.09 |
| tblVehicleEF | MHD | 2.8940e-003 | 3.7500e-003 |
| tblVehicleEF | MHD | 3.5420e-003 | 4.2210e-003 |
| tblVehicleEF | MHD | 0.19 | 0.25 |
| tblVehicleEF | MHD | 0.19 | 0.20 |
| tblVehicleEF | MHD | 1.2300e-003 | 1.4290e-003 |
| tblVehicleEF | MHD | 0.11 | 0.13 |
| tblVehicleEF | MHD | 0.91 | 1.07 |
| tblVehicleEF | MHD | 1.70 | 2.02 |
| tblVehicleEF | MHD | 5.4730e-003 | 5.4390e-003 |
| tblVehicleEF | MHD | 8.5470e-003 | 8.5790e-003 |
| tblVehicleEF | MHD | 1.0350e-003 | 1.1210e-003 |
| tblVehicleEF | MHD | 3.5420e-003 | 4.2210e-003 |
| tblVehicleEF | MHD | 0.19 | 0.25 |

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|---|---|---|---|
| tblVehicleEF | MHD | 0.22 | 0.23 |
| tblVehicleEF | MHD | 1.2300e-003 | 1.4290e-003 |
| tblVehicleEF | MHD | 0.13 | 0.15 |
| tblVehicleEF | MHD | 0.91 | 1.07 |
| tblVehicleEF | MHD | 1.82 | 2.16 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 1.7570e-003 | 2.0040e-003 |
| tblVehicleEF | OBUS | 2.37 | 2.36 |
| tblVehicleEF | OBUS | 1.76 | 2.09 |
| tblVehicleEF | OBUS | 12.97 | 14.29 |
| tblVehicleEF | OBUS | 563.74 | 571.35 |
| tblVehicleEF | OBUS | 926.08 | 947.54 |
| tblVehicleEF | OBUS | 35.14 | 36.47 |
| tblVehicleEF | OBUS | 1.8600e-003 | 1.8690e-003 |
| tblVehicleEF | OBUS | 5.55 | 5.94 |
| tblVehicleEF | OBUS | 3.23 | 3.78 |
| tblVehicleEF | OBUS | 2.01 | 2.15 |
| tblVehicleEF | OBUS | 0.01 | 0.02 |
| tblVehicleEF | OBUS | 0.09 | 0.09 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 1.5890e-003 | 2.0050e-003 |
| tblVehicleEF | OBUS | 9.6700e-003 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.04 |
| tblVehicleEF | OBUS | 2.5360e-003 | 2.5430e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 1.4430e-003 | 1.7870e-003 |
| tblVehicleEF | OBUS | 3.4490e-003 | 3.9110e-003 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.40 | 0.41 |
| tblVehicleEF | OBUS | 1.2760e-003 | 1.4280e-003 |
| tblVehicleEF | OBUS | 0.11 | 0.13 |
| tblVehicleEF | OBUS | 0.66 | 0.73 |
| tblVehicleEF | OBUS | 0.93 | 1.05 |
| tblVehicleEF | OBUS | 5.6610e-003 | 5.6490e-003 |
| tblVehicleEF | OBUS | 9.4380e-003 | 9.5090e-003 |
| tblVehicleEF | OBUS | 6.0200e-004 | 6.3500e-004 |
| tblVehicleEF | OBUS | 3.4490e-003 | 3.9110e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.46 | 0.47 |
| tblVehicleEF | OBUS | 1.2760e-003 | 1.4280e-003 |
| tblVehicleEF | OBUS | 0.13 | 0.15 |
| tblVehicleEF | OBUS | 0.66 | 0.73 |
| tblVehicleEF | OBUS | 1.00 | 1.12 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 1.7570e-003 | 2.0040e-003 |
| tblVehicleEF | OBUS | 1.72 | 1.72 |
| tblVehicleEF | OBUS | 1.79 | 2.12 |
| tblVehicleEF | OBUS | 11.62 | 12.86 |
| tblVehicleEF | OBUS | 597.23 | 605.30 |
| tblVehicleEF | OBUS | 926.08 | 947.54 |
| tblVehicleEF | OBUS | 35.14 | 36.47 |
| tblVehicleEF | OBUS | 1.8600e-003 | 1.8690e-003 |
| tblVehicleEF | OBUS | 5.73 | 6.13 |
| tblVehicleEF | OBUS | 2.89 | 3.39 |
| tblVehicleEF | OBUS | 1.97 | 2.11 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 8.8610e-003 | 0.02 |
| tblVehicleEF | OBUS | 0.09 | 0.09 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 1.5890e-003 | 2.0050e-003 |
| tblVehicleEF | OBUS | 8.1520e-003 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.04 |
| tblVehicleEF | OBUS | 2.5360e-003 | 2.5430e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 1.4430e-003 | 1.7870e-003 |
| tblVehicleEF | OBUS | 7.1970e-003 | 8.1900e-003 |
| tblVehicleEF | OBUS | 0.05 | 0.06 |
| tblVehicleEF | OBUS | 0.38 | 0.39 |
| tblVehicleEF | OBUS | 1.9550e-003 | 2.1990e-003 |
| tblVehicleEF | OBUS | 0.11 | 0.13 |
| tblVehicleEF | OBUS | 0.67 | 0.75 |
| tblVehicleEF | OBUS | 0.88 | 0.99 |
| tblVehicleEF | OBUS | 5.9980e-003 | 5.9840e-003 |
| tblVehicleEF | OBUS | 9.4390e-003 | 9.5090e-003 |
| tblVehicleEF | OBUS | 5.7900e-004 | 6.1000e-004 |
| tblVehicleEF | OBUS | 7.1970e-003 | 8.1900e-003 |
| tblVehicleEF | OBUS | 0.05 | 0.06 |
| tblVehicleEF | OBUS | 0.43 | 0.44 |
| tblVehicleEF | OBUS | 1.9550e-003 | 2.1990e-003 |
| tblVehicleEF | OBUS | 0.13 | 0.16 |
| tblVehicleEF | OBUS | 0.67 | 0.75 |
| tblVehicleEF | OBUS | 0.94 | 1.05 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 1.7570e-003 | 2.0040e-003 |
| tblVehicleEF | OBUS | 3.26 | 3.26 |
| tblVehicleEF | OBUS | 1.72 | 2.04 |
| tblVehicleEF | OBUS | 16.54 | 18.14 |
| tblVehicleEF | OBUS | 517.49 | 524.48 |
| tblVehicleEF | OBUS | 926.08 | 947.54 |
| tblVehicleEF | OBUS | 35.14 | 36.47 |
| tblVehicleEF | OBUS | 1.8600e-003 | 1.8690e-003 |
| tblVehicleEF | OBUS | 5.30 | 5.67 |
| tblVehicleEF | OBUS | 3.29 | 3.85 |
| tblVehicleEF | OBUS | 2.11 | 2.26 |
| tblVehicleEF | OBUS | 0.01 | 0.02 |
| tblVehicleEF | OBUS | 0.09 | 0.09 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 1.5890e-003 | 2.0050e-003 |
| tblVehicleEF | OBUS | 0.01 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.04 |
| tblVehicleEF | OBUS | 2.5360e-003 | 2.5430e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 1.4430e-003 | 1.7870e-003 |
| tblVehicleEF | OBUS | 1.6380e-003 | 1.8600e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.44 | 0.45 |
| tblVehicleEF | OBUS | 4.7700e-004 | 5.2800e-004 |
| tblVehicleEF | OBUS | 0.11 | 0.13 |
| tblVehicleEF | OBUS | 0.68 | 0.76 |
| tblVehicleEF | OBUS | 1.09 | 1.22 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 5.1970e-003 | 5.1850e-003 |
| tblVehicleEF | OBUS | 9.4380e-003 | 9.5080e-003 |
| tblVehicleEF | OBUS | 6.6300e-004 | 7.0100e-004 |
| tblVehicleEF | OBUS | 1.6380e-003 | 1.8600e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.50 | 0.51 |
| tblVehicleEF | OBUS | 4.7700e-004 | 5.2800e-004 |
| tblVehicleEF | OBUS | 0.13 | 0.15 |
| tblVehicleEF | OBUS | 0.68 | 0.76 |
| tblVehicleEF | OBUS | 1.16 | 1.31 |
| tblVehicleEF | SBUS | 5.4440e-003 | 5.4360e-003 |
| tblVehicleEF | SBUS | 4.8860e-003 | 4.8500e-003 |
| tblVehicleEF | SBUS | 1.07 | 1.06 |
| tblVehicleEF | SBUS | 21.12 | 25.20 |
| tblVehicleEF | SBUS | 42.56 | 47.50 |
| tblVehicleEF | SBUS | 562.55 | 570.82 |
| tblVehicleEF | SBUS | 949.40 | 967.22 |
| tblVehicleEF | SBUS | 137.71 | 144.59 |
| tblVehicleEF | SBUS | 6.7700e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 8.05 | 8.09 |
| tblVehicleEF | SBUS | 6.11 | 6.32 |
| tblVehicleEF | SBUS | 2.23 | 2.33 |
| tblVehicleEF | SBUS | 0.03 | 0.03 |
| tblVehicleEF | SBUS | 0.36 | 0.37 |
| tblVehicleEF | SBUS | 9.8520e-003 | 9.8700e-003 |
| tblVehicleEF | SBUS | 0.06 | 0.06 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 0.16 | 0.16 |
| tblVehicleEF | SBUS | 2.4630e-003 | 2.4680e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.05 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.12 | 0.13 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |
| tblVehicleEF | SBUS | 0.12 | 0.12 |
| tblVehicleEF | SBUS | 0.04 | 0.04 |
| tblVehicleEF | SBUS | 1.49 | 1.69 |
| tblVehicleEF | SBUS | 2.81 | 3.24 |
| tblVehicleEF | SBUS | 3.85 | 4.43 |
| tblVehicleEF | SBUS | 5.6490e-003 | 5.6430e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 2.2370e-003 | 2.3820e-003 |
| tblVehicleEF | SBUS | 0.12 | 0.13 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |
| tblVehicleEF | SBUS | 0.13 | 0.13 |
| tblVehicleEF | SBUS | 0.04 | 0.04 |
| tblVehicleEF | SBUS | 1.60 | 1.82 |
| tblVehicleEF | SBUS | 2.81 | 3.24 |
| tblVehicleEF | SBUS | 4.13 | 4.76 |
| tblVehicleEF | SBUS | 5.1310e-003 | 5.1230e-003 |
| tblVehicleEF | SBUS | 4.8860e-003 | 4.8500e-003 |
| tblVehicleEF | SBUS | 0.78 | 0.77 |
| tblVehicleEF | SBUS | 22.86 | 27.38 |
| tblVehicleEF | SBUS | 40.04 | 44.98 |
| tblVehicleEF | SBUS | 595.97 | 604.73 |
| tblVehicleEF | SBUS | 949.40 | 967.22 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 137.71 | 144.59 |
| tblVehicleEF | SBUS | 6.7700e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 8.31 | 8.35 |
| tblVehicleEF | SBUS | 5.41 | 5.59 |
| tblVehicleEF | SBUS | 2.13 | 2.22 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.36 | 0.37 |
| tblVehicleEF | SBUS | 9.8520e-003 | 9.8700e-003 |
| tblVehicleEF | SBUS | 0.06 | 0.06 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.16 | 0.16 |
| tblVehicleEF | SBUS | 2.4630e-003 | 2.4680e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.05 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.25 | 0.29 |
| tblVehicleEF | SBUS | 0.57 | 0.68 |
| tblVehicleEF | SBUS | 0.11 | 0.11 |
| tblVehicleEF | SBUS | 0.06 | 0.07 |
| tblVehicleEF | SBUS | 1.51 | 1.72 |
| tblVehicleEF | SBUS | 2.70 | 3.12 |
| tblVehicleEF | SBUS | 3.56 | 4.10 |
| tblVehicleEF | SBUS | 5.9850e-003 | 5.9790e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 2.1890e-003 | 2.3320e-003 |
| tblVehicleEF | SBUS | 0.25 | 0.29 |
| tblVehicleEF | SBUS | 0.57 | 0.68 |
| tblVehicleEF | SBUS | 0.13 | 0.13 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 0.06 | 0.07 |
| tblVehicleEF | SBUS | 1.63 | 1.85 |
| tblVehicleEF | SBUS | 2.70 | 3.12 |
| tblVehicleEF | SBUS | 3.82 | 4.40 |
| tblVehicleEF | SBUS | 5.8770e-003 | 5.8680e-003 |
| tblVehicleEF | SBUS | 4.8860e-003 | 4.8500e-003 |
| tblVehicleEF | SBUS | 1.47 | 1.46 |
| tblVehicleEF | SBUS | 21.42 | 25.67 |
| tblVehicleEF | SBUS | 50.99 | 56.44 |
| tblVehicleEF | SBUS | 516.39 | 523.99 |
| tblVehicleEF | SBUS | 949.40 | 967.22 |
| tblVehicleEF | SBUS | 137.71 | 144.59 |
| tblVehicleEF | SBUS | 6.7700e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 7.69 | 7.73 |
| tblVehicleEF | SBUS | 6.26 | 6.48 |
| tblVehicleEF | SBUS | 2.43 | 2.54 |
| tblVehicleEF | SBUS | 0.03 | 0.03 |
| tblVehicleEF | SBUS | 0.36 | 0.37 |
| tblVehicleEF | SBUS | 9.8520e-003 | 9.8700e-003 |
| tblVehicleEF | SBUS | 0.06 | 0.06 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 0.03 | 0.03 |
| tblVehicleEF | SBUS | 0.16 | 0.16 |
| tblVehicleEF | SBUS | 2.4630e-003 | 2.4680e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.05 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.05 | 0.06 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 0.13 | 0.13 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.50 | 1.72 |
| tblVehicleEF | SBUS | 3.23 | 3.73 |
| tblVehicleEF | SBUS | 4.64 | 5.36 |
| tblVehicleEF | SBUS | 5.1860e-003 | 5.1800e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 2.3950e-003 | 2.5520e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.06 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |
| tblVehicleEF | SBUS | 0.14 | 0.14 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.61 | 1.84 |
| tblVehicleEF | SBUS | 3.23 | 3.73 |
| tblVehicleEF | SBUS | 4.98 | 5.76 |
| tblVehicleEF | UBUS | 7.77 | 8.70 |
| tblVehicleEF | UBUS | 32.97 | 35.88 |
| tblVehicleEF | UBUS | 991.41 | 1,011.14 |
| tblVehicleEF | UBUS | 121.37 | 123.29 |
| tblVehicleEF | UBUS | 1.5100e-004 | 1.5200e-004 |
| tblVehicleEF | UBUS | 5.82 | 6.23 |
| tblVehicleEF | UBUS | 6.17 | 6.59 |
| tblVehicleEF | UBUS | 0.05 | 0.05 |
| tblVehicleEF | UBUS | 1.0030e-003 | 1.0840e-003 |
| tblVehicleEF | UBUS | 0.04 | 0.05 |
| tblVehicleEF | UBUS | 9.3000e-004 | 1.0060e-003 |
| tblVehicleEF | UBUS | 0.03 | 0.04 |
| tblVehicleEF | UBUS | 0.37 | 0.41 |

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|---|---|---|---|
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.57 | 0.64 |
| tblVehicleEF | UBUS | 2.18 | 2.31 |
| tblVehicleEF | UBUS | 3.17 | 3.36 |
| tblVehicleEF | UBUS | 0.01 | 0.01 |
| tblVehicleEF | UBUS | 1.8930e-003 | 1.9450e-003 |
| tblVehicleEF | UBUS | 0.03 | 0.04 |
| tblVehicleEF | UBUS | 0.37 | 0.41 |
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.64 | 0.71 |
| tblVehicleEF | UBUS | 2.18 | 2.31 |
| tblVehicleEF | UBUS | 3.38 | 3.59 |
| tblVehicleEF | UBUS | 7.88 | 8.82 |
| tblVehicleEF | UBUS | 30.01 | 32.66 |
| tblVehicleEF | UBUS | 991.41 | 1,011.14 |
| tblVehicleEF | UBUS | 121.37 | 123.29 |
| tblVehicleEF | UBUS | 1.5100e-004 | 1.5200e-004 |
| tblVehicleEF | UBUS | 5.07 | 5.42 |
| tblVehicleEF | UBUS | 6.01 | 6.42 |
| tblVehicleEF | UBUS | 0.05 | 0.05 |
| tblVehicleEF | UBUS | 1.0030e-003 | 1.0840e-003 |
| tblVehicleEF | UBUS | 0.04 | 0.05 |
| tblVehicleEF | UBUS | 9.3000e-004 | 1.0060e-003 |
| tblVehicleEF | UBUS | 0.07 | 0.08 |
| tblVehicleEF | UBUS | 0.46 | 0.51 |
| tblVehicleEF | UBUS | 0.03 | 0.03 |
| tblVehicleEF | UBUS | 0.58 | 0.65 |
| tblVehicleEF | UBUS | 2.23 | 2.36 |

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|---|---|---|---|
| tblVehicleEF | UBUS | 3.00 | 3.18 |
| tblVehicleEF | UBUS | 0.01 | 0.01 |
| tblVehicleEF | UBUS | 1.8410e-003 | 1.8890e-003 |
| tblVehicleEF | UBUS | 0.07 | 0.08 |
| tblVehicleEF | UBUS | 0.46 | 0.51 |
| tblVehicleEF | UBUS | 0.03 | 0.03 |
| tblVehicleEF | UBUS | 0.64 | 0.72 |
| tblVehicleEF | UBUS | 2.23 | 2.36 |
| tblVehicleEF | UBUS | 3.20 | 3.40 |
| tblVehicleEF | UBUS | 7.58 | 8.48 |
| tblVehicleEF | UBUS | 39.84 | 43.36 |
| tblVehicleEF | UBUS | 991.41 | 1,011.14 |
| tblVehicleEF | UBUS | 121.37 | 123.29 |
| tblVehicleEF | UBUS | 1.5100e-004 | 1.5200e-004 |
| tblVehicleEF | UBUS | 5.98 | 6.41 |
| tblVehicleEF | UBUS | 6.53 | 6.98 |
| tblVehicleEF | UBUS | 0.05 | 0.05 |
| tblVehicleEF | UBUS | 1.0030e-003 | 1.0840e-003 |
| tblVehicleEF | UBUS | 0.04 | 0.05 |
| tblVehicleEF | UBUS | 9.3000e-004 | 1.0060e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.37 | 0.40 |
| tblVehicleEF | UBUS | 6.5610e-003 | 7.0430e-003 |
| tblVehicleEF | UBUS | 0.56 | 0.62 |
| tblVehicleEF | UBUS | 2.44 | 2.58 |
| tblVehicleEF | UBUS | 3.55 | 3.76 |
| tblVehicleEF | UBUS | 0.01 | 0.01 |
| tblVehicleEF | UBUS | 2.0130e-003 | 2.0750e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.37 | 0.40 |
| tblVehicleEF | UBUS | 6.5610e-003 | 7.0430e-003 |
| tblVehicleEF | UBUS | 0.62 | 0.69 |
| tblVehicleEF | UBUS | 2.44 | 2.58 |
| tblVehicleEF | UBUS | 3.79 | 4.01 |
| tblVehicleTrips | ST_TR | 1.32 | 0.00 |
| tblVehicleTrips | SU_TR | 0.68 | 0.00 |
| tblVehicleTrips | WD_TR | 6.97 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2016 | 0.0548 | 0.5650 | 0.3192 | 8.6000e-004 | 0.5634 | 0.0265 | 0.5900 | 0.0567 | 0.0252 | 0.0819 | 0.0000 | 77.1427 | 77.1427 | 0.0138 | 0.0000 | 77.4318 |
| **Total** | **0.0548** | **0.5650** | **0.3192** | **8.6000e-004** | **0.5634** | **0.0265** | **0.5900** | **0.0567** | **0.0252** | **0.0819** | **0.0000** | **77.1427** | **77.1427** | **0.0138** | **0.0000** | **77.4318** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2016 | 0.0548 | 0.5650 | 0.3192 | 8.6000e-004 | 0.4458 | 0.0265 | 0.4723 | 0.0449 | 0.0252 | 0.0701 | 0.0000 | 77.1426 | 77.1426 | 0.0138 | 0.0000 | 77.4317 |
| **Total** | **0.0548** | **0.5650** | **0.3192** | **8.6000e-004** | **0.4458** | **0.0265** | **0.4723** | **0.0449** | **0.0252** | **0.0701** | **0.0000** | **77.1426** | **77.1426** | **0.0138** | **0.0000** | **77.4317** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **20.88** | **0.00** | **19.94** | **20.80** | **0.00** | **14.40** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Plowed conduit installation | Trenching | 1/12/2016 | 1/20/2016 | 5 | 7 | |
| 2 | Bored installation | Trenching | 1/21/2016 | 3/4/2016 | 5 | 32 | |
| 3 | Node installation | Trenching | 3/7/2016 | 3/11/2016 | 5 | 5 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Plowed conduit installation | Air Compressors | 2 | 4.00 | 174 | 0.41 |
| Plowed conduit installation | Crawler Tractors | 2 | 8.00 | 97 | 0.37 |
| Bored installation | Air Compressors | 2 | 4.00 | 78 | 0.48 |
| Bored installation | Bore/Drill Rigs | 2 | 8.00 | 205 | 0.50 |
| Bored installation | Pumps | 2 | 8.00 | 208 | 0.43 |
| Bored installation | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Node installation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Plowed conduit installation | 4 | 10.00 | 8.00 | 0.00 | 7.30 | 8.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Bored installation | 8 | 20.00 | 6.00 | 0.00 | 7.30 | 8.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Node installation | 1 | 6.00 | 6.00 | 0.00 | 7.30 | 8.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.2 Plowed conduit installation - 2016

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 6.1500e-003 | 0.0504 | 0.0327 | 5.0000e-005 | | 3.7100e-003 | 3.7100e-003 | | 3.4900e-003 | 3.4900e-003 | 0.0000 | 4.3255 | 4.3255 | 8.1000e-004 | 0.0000 | 4.3425 |
| **Total** | **6.1500e-003** | **0.0504** | **0.0327** | **5.0000e-005** | | **3.7100e-003** | **3.7100e-003** | | **3.4900e-003** | **3.4900e-003** | **0.0000** | **4.3255** | **4.3255** | **8.1000e-004** | **0.0000** | **4.3425** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 3.4000e-004 | 2.8600e-003 | 4.1100e-003 | 1.0000e-005 | 0.0357 | 6.0000e-005 | 0.0357 | 3.6000e-003 | 6.0000e-005 | 3.6500e-003 | 0.0000 | 0.6400 | 0.6400 | 0.0000 | 0.0000 | 0.6401 |
| Worker | 1.9000e-004 | 2.3000e-004 | 2.0500e-003 | 0.0000 | 0.0365 | 0.0000 | 0.0366 | 3.6800e-003 | 0.0000 | 3.6800e-003 | 0.0000 | 0.1595 | 0.1595 | 1.0000e-005 | 0.0000 | 0.1598 |
| **Total** | **5.3000e-004** | **3.0900e-003** | **6.1600e-003** | **1.0000e-005** | **0.0722** | **6.0000e-005** | **0.0723** | **7.2800e-003** | **6.0000e-005** | **7.3300e-003** | **0.0000** | **0.7996** | **0.7996** | **1.0000e-005** | **0.0000** | **0.8000** |

## 3.2 Plowed conduit installation - 2016

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 6.1500e-003 | 0.0504 | 0.0327 | 5.0000e-005 | | 3.7100e-003 | 3.7100e-003 | | 3.4900e-003 | 3.4900e-003 | 0.0000 | 4.3255 | 4.3255 | 8.1000e-004 | 0.0000 | 4.3425 |
| **Total** | **6.1500e-003** | **0.0504** | **0.0327** | **5.0000e-005** | | **3.7100e-003** | **3.7100e-003** | | **3.4900e-003** | **3.4900e-003** | **0.0000** | **4.3255** | **4.3255** | **8.1000e-004** | **0.0000** | **4.3425** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 3.4000e-004 | 2.8600e-003 | 4.1100e-003 | 1.0000e-005 | 0.0282 | 6.0000e-005 | 0.0283 | 2.8500e-003 | 6.0000e-005 | 2.9100e-003 | 0.0000 | 0.6400 | 0.6400 | 0.0000 | 0.0000 | 0.6401 |
| Worker | 1.9000e-004 | 2.3000e-004 | 2.0500e-003 | 0.0000 | 0.0289 | 0.0000 | 0.0289 | 2.9100e-003 | 0.0000 | 2.9100e-003 | 0.0000 | 0.1595 | 0.1595 | 1.0000e-005 | 0.0000 | 0.1598 |
| **Total** | **5.3000e-004** | **3.0900e-003** | **6.1600e-003** | **1.0000e-005** | **0.0571** | **6.0000e-005** | **0.0572** | **5.7600e-003** | **6.0000e-005** | **5.8200e-003** | **0.0000** | **0.7996** | **0.7996** | **1.0000e-005** | **0.0000** | **0.8000** |

## 3.3 Bored installation - 2016

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0440 | 0.4899 | 0.2384 | 7.5000e-004 | | 0.0219 | 0.0219 | | 0.0209 | 0.0209 | 0.0000 | 67.2192 | 67.2192 | 0.0126 | 0.0000 | 67.4832 |
| **Total** | **0.0440** | **0.4899** | **0.2384** | **7.5000e-004** | | **0.0219** | **0.0219** | | **0.0209** | **0.0209** | **0.0000** | **67.2192** | **67.2192** | **0.0126** | **0.0000** | **67.4832** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.1500e-003 | 9.8000e-003 | 0.0141 | 2.0000e-005 | 0.1223 | 2.1000e-004 | 0.1225 | 0.0123 | 1.9000e-004 | 0.0125 | 0.0000 | 2.1944 | 2.1944 | 1.0000e-005 | 0.0000 | 2.1947 |
| Worker | 1.7800e-003 | 2.0800e-003 | 0.0188 | 2.0000e-005 | 0.3341 | 1.0000e-005 | 0.3341 | 0.0336 | 1.0000e-005 | 0.0336 | 0.0000 | 1.4586 | 1.4586 | 1.3000e-004 | 0.0000 | 1.4613 |
| **Total** | **2.9300e-003** | **0.0119** | **0.0329** | **4.0000e-005** | **0.4564** | **2.2000e-004** | **0.4567** | **0.0460** | **2.0000e-004** | **0.0462** | **0.0000** | **3.6530** | **3.6530** | **1.4000e-004** | **0.0000** | **3.6560** |

## 3.3 Bored installation - 2016

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0440 | 0.4899 | 0.2384 | 7.5000e-004 | | 0.0219 | 0.0219 | | 0.0209 | 0.0209 | 0.0000 | 67.2191 | 67.2191 | 0.0126 | 0.0000 | 67.4831 |
| **Total** | **0.0440** | **0.4899** | **0.2384** | **7.5000e-004** | | **0.0219** | **0.0219** | | **0.0209** | **0.0209** | **0.0000** | **67.2191** | **67.2191** | **0.0126** | **0.0000** | **67.4831** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.1500e-003 | 9.8000e-003 | 0.0141 | 2.0000e-005 | 0.0968 | 2.1000e-004 | 0.0970 | 9.7800e-003 | 1.9000e-004 | 9.9700e-003 | 0.0000 | 2.1944 | 2.1944 | 1.0000e-005 | 0.0000 | 2.1947 |
| Worker | 1.7800e-003 | 2.0800e-003 | 0.0188 | 2.0000e-005 | 0.2643 | 1.0000e-005 | 0.2643 | 0.0266 | 1.0000e-005 | 0.0266 | 0.0000 | 1.4586 | 1.4586 | 1.3000e-004 | 0.0000 | 1.4613 |
| **Total** | **2.9300e-003** | **0.0119** | **0.0329** | **4.0000e-005** | **0.3611** | **2.2000e-004** | **0.3613** | **0.0364** | **2.0000e-004** | **0.0366** | **0.0000** | **3.6530** | **3.6530** | **1.4000e-004** | **0.0000** | **3.6560** |

## 3.4 Node installation - 2016

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 8.5000e-004 | 8.1400e-003 | 6.0300e-003 | 1.0000e-005 | | 6.3000e-004 | 6.3000e-004 | | 5.8000e-004 | 5.8000e-004 | 0.0000 | 0.7341 | 0.7341 | 2.2000e-004 | 0.0000 | 0.7387 |
| **Total** | **8.5000e-004** | **8.1400e-003** | **6.0300e-003** | **1.0000e-005** | | **6.3000e-004** | **6.3000e-004** | | **5.8000e-004** | **5.8000e-004** | **0.0000** | **0.7341** | **0.7341** | **2.2000e-004** | **0.0000** | **0.7387** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.8000e-004 | 1.5300e-003 | 2.2000e-003 | 0.0000 | 0.0191 | 3.0000e-005 | 0.0191 | 1.9300e-003 | 3.0000e-005 | 1.9600e-003 | 0.0000 | 0.3429 | 0.3429 | 0.0000 | 0.0000 | 0.3429 |
| Worker | 8.0000e-005 | 1.0000e-004 | 8.8000e-004 | 0.0000 | 0.0157 | 0.0000 | 0.0157 | 1.5800e-003 | 0.0000 | 1.5800e-003 | 0.0000 | 0.0684 | 0.0684 | 1.0000e-005 | 0.0000 | 0.0685 |
| **Total** | **2.6000e-004** | **1.6300e-003** | **3.0800e-003** | **0.0000** | **0.0348** | **3.0000e-005** | **0.0348** | **3.5100e-003** | **3.0000e-005** | **3.5400e-003** | **0.0000** | **0.4113** | **0.4113** | **1.0000e-005** | **0.0000** | **0.4114** |

### 3.4 Node installation - 2016

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 8.5000e-004 | 8.1400e-003 | 6.0300e-003 | 1.0000e-005 | | 6.3000e-004 | 6.3000e-004 | | 5.8000e-004 | 5.8000e-004 | 0.0000 | 0.7341 | 0.7341 | 2.2000e-004 | 0.0000 | 0.7387 |
| **Total** | **8.5000e-004** | **8.1400e-003** | **6.0300e-003** | **1.0000e-005** | | **6.3000e-004** | **6.3000e-004** | | **5.8000e-004** | **5.8000e-004** | **0.0000** | **0.7341** | **0.7341** | **2.2000e-004** | **0.0000** | **0.7387** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.8000e-004 | 1.5300e-003 | 2.2000e-003 | 0.0000 | 0.0151 | 3.0000e-005 | 0.0152 | 1.5300e-003 | 3.0000e-005 | 1.5600e-003 | 0.0000 | 0.3429 | 0.3429 | 0.0000 | 0.0000 | 0.3429 |
| Worker | 8.0000e-005 | 1.0000e-004 | 8.8000e-004 | 0.0000 | 0.0124 | 0.0000 | 0.0124 | 1.2500e-003 | 0.0000 | 1.2500e-003 | 0.0000 | 0.0684 | 0.0684 | 1.0000e-005 | 0.0000 | 0.0685 |
| **Total** | **2.6000e-004** | **1.6300e-003** | **3.0800e-003** | **0.0000** | **0.0275** | **3.0000e-005** | **0.0276** | **2.7800e-003** | **3.0000e-005** | **2.8100e-003** | **0.0000** | **0.4113** | **0.4113** | **1.0000e-005** | **0.0000** | **0.4114** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Light Industry | 16.40 | 9.50 | 11.90 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.452463 | 0.070907 | 0.165532 | 0.163183 | 0.043777 | 0.005595 | 0.012812 | 0.078576 | 0.001869 | 0.000152 | 0.002393 | 0.000687 | 0.002054 |

### 4.4 Fleet Mix

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Vegetation

# CPUC Winterhaven Broadband

**Imperial County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Light Industry | 0.00 | 1000sqft | 0.00 | 0.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 3.4 | **Precipitation Freq (Days)** | 12 |
| **Climate Zone** | 15 | | | **Operational Year** | 2017 |
| **Utility Company** | Imperial Irrigation District | | | | |
| **CO2 Intensity (lb/MWhr)** | 1270.9 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Durations determined based on an assumed 2 miles/day for plow installation, 400 ft/day for bored installation, and 2 nodes/day.

Off-road Equipment - Bored installation has 2 pumps, 2 air compressors, 2 drill rigs, and 2 backhoes.

Off-road Equipment - Node construction will only have 1 backhoe.

Off-road Equipment - Plowed installation has 2 air compressors, and 2 crawler tractors.

Trips and VMT - Vendor trips include equipment delivery and water trucks for dust control. Workers in Winterhaven, vendors in Yuma. Equipment delivery rate=2/day for plowed and 1/day for bored installations. Node vaults = 1/day. Water truck = twice/day during each phase.

On-road Fugitive Dust - Approximately 10% of the roads in the project area are not paved.

Vehicle Trips - Assumed no workers.

Road Dust - Updated % road paved to be 90%.

Construction Off-road Equipment Mitigation - Assume cleaning of paved roads will provide a 10% reduction in PM.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 10 |
| tblConstructionPhase | PhaseStartDate | 3/5/2016 | 3/7/2016 |
| tblOffRoadEquipment | HorsePower | 78.00 | 174.00 |
| tblOffRoadEquipment | HorsePower | 208.00 | 97.00 |
| tblOffRoadEquipment | HorsePower | 84.00 | 208.00 |
| tblOffRoadEquipment | LoadFactor | 0.48 | 0.41 |
| tblOffRoadEquipment | LoadFactor | 0.43 | 0.37 |
| tblOffRoadEquipment | LoadFactor | 0.74 | 0.43 |
| tblOnRoadDust | VendorPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | VendorPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | VendorPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | WorkerPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | WorkerPercentPave | 50.00 | 90.00 |
| tblOnRoadDust | WorkerPercentPave | 50.00 | 90.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2017 |

| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
|---|---|---|---|
| tblRoadDust | RoadPercentPave | 50 | 90 |
| tblTripsAndVMT | VendorTripLength | 11.90 | 8.90 |
| tblTripsAndVMT | VendorTripLength | 11.90 | 8.90 |
| tblTripsAndVMT | VendorTripLength | 11.90 | 8.90 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 8.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 6.00 |
| tblTripsAndVMT | WorkerTripLength | 10.20 | 7.30 |
| tblTripsAndVMT | WorkerTripLength | 10.20 | 7.30 |
| tblTripsAndVMT | WorkerTripLength | 10.20 | 7.30 |
| tblTripsAndVMT | WorkerTripNumber | 3.00 | 6.00 |
| tblVehicleEF | HHD | 0.03 | 0.02 |
| tblVehicleEF | HHD | 7.1940e-003 | 7.6650e-003 |
| tblVehicleEF | HHD | 3.02 | 2.95 |
| tblVehicleEF | HHD | 1.71 | 1.75 |
| tblVehicleEF | HHD | 70.59 | 75.37 |
| tblVehicleEF | HHD | 557.88 | 566.80 |
| tblVehicleEF | HHD | 1,511.58 | 1,538.63 |
| tblVehicleEF | HHD | 61.94 | 65.70 |
| tblVehicleEF | HHD | 0.08 | 0.08 |
| tblVehicleEF | HHD | 4.29 | 4.62 |
| tblVehicleEF | HHD | 4.30 | 4.86 |
| tblVehicleEF | HHD | 4.71 | 4.85 |
| tblVehicleEF | HHD | 0.01 | 0.01 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.10 | 0.11 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 4.0230e-003 | 4.9800e-003 |
| tblVehicleEF | HHD | 9.8530e-003 | 0.01 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8370e-003 | 8.8390e-003 |
| tblVehicleEF | HHD | 0.09 | 0.11 |
| tblVehicleEF | HHD | 3.1900e-003 | 3.9270e-003 |
| tblVehicleEF | HHD | 6.8240e-003 | 8.0590e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.54 | 0.53 |
| tblVehicleEF | HHD | 3.2800e-003 | 3.8220e-003 |
| tblVehicleEF | HHD | 0.16 | 0.17 |
| tblVehicleEF | HHD | 0.80 | 0.95 |
| tblVehicleEF | HHD | 2.83 | 3.23 |
| tblVehicleEF | HHD | 5.6030e-003 | 5.6040e-003 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 1.8480e-003 | 1.9650e-003 |
| tblVehicleEF | HHD | 6.8240e-003 | 8.0590e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.61 | 0.60 |
| tblVehicleEF | HHD | 3.2800e-003 | 3.8220e-003 |
| tblVehicleEF | HHD | 0.19 | 0.20 |
| tblVehicleEF | HHD | 0.80 | 0.95 |
| tblVehicleEF | HHD | 3.04 | 3.47 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 7.1940e-003 | 7.6650e-003 |
| tblVehicleEF | HHD | 2.20 | 2.14 |
| tblVehicleEF | HHD | 1.72 | 1.76 |
| tblVehicleEF | HHD | 67.18 | 72.53 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 591.03 | 600.47 |
| tblVehicleEF | HHD | 1,511.58 | 1,538.63 |
| tblVehicleEF | HHD | 61.94 | 65.70 |
| tblVehicleEF | HHD | 0.08 | 0.08 |
| tblVehicleEF | HHD | 4.43 | 4.77 |
| tblVehicleEF | HHD | 3.91 | 4.42 |
| tblVehicleEF | HHD | 4.62 | 4.75 |
| tblVehicleEF | HHD | 9.0280e-003 | 0.01 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.10 | 0.11 |
| tblVehicleEF | HHD | 4.0230e-003 | 4.9800e-003 |
| tblVehicleEF | HHD | 8.3060e-003 | 9.9260e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8370e-003 | 8.8390e-003 |
| tblVehicleEF | HHD | 0.09 | 0.11 |
| tblVehicleEF | HHD | 3.1900e-003 | 3.9270e-003 |
| tblVehicleEF | HHD | 0.01 | 0.02 |
| tblVehicleEF | HHD | 0.25 | 0.30 |
| tblVehicleEF | HHD | 0.51 | 0.50 |
| tblVehicleEF | HHD | 5.2890e-003 | 6.1810e-003 |
| tblVehicleEF | HHD | 0.16 | 0.17 |
| tblVehicleEF | HHD | 0.84 | 0.99 |
| tblVehicleEF | HHD | 2.69 | 3.07 |
| tblVehicleEF | HHD | 5.9350e-003 | 5.9370e-003 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 1.7900e-003 | 1.9150e-003 |
| tblVehicleEF | HHD | 0.01 | 0.02 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 0.25 | 0.30 |
| tblVehicleEF | HHD | 0.58 | 0.57 |
| tblVehicleEF | HHD | 5.2890e-003 | 6.1810e-003 |
| tblVehicleEF | HHD | 0.19 | 0.20 |
| tblVehicleEF | HHD | 0.84 | 0.99 |
| tblVehicleEF | HHD | 2.88 | 3.30 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 7.1940e-003 | 7.6650e-003 |
| tblVehicleEF | HHD | 4.17 | 4.06 |
| tblVehicleEF | HHD | 1.69 | 1.73 |
| tblVehicleEF | HHD | 83.73 | 88.23 |
| tblVehicleEF | HHD | 512.11 | 520.30 |
| tblVehicleEF | HHD | 1,511.58 | 1,538.63 |
| tblVehicleEF | HHD | 61.94 | 65.70 |
| tblVehicleEF | HHD | 0.08 | 0.08 |
| tblVehicleEF | HHD | 4.10 | 4.42 |
| tblVehicleEF | HHD | 4.34 | 4.92 |
| tblVehicleEF | HHD | 4.95 | 5.09 |
| tblVehicleEF | HHD | 0.01 | 0.02 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.10 | 0.11 |
| tblVehicleEF | HHD | 4.0230e-003 | 4.9800e-003 |
| tblVehicleEF | HHD | 0.01 | 0.01 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8370e-003 | 8.8390e-003 |
| tblVehicleEF | HHD | 0.09 | 0.11 |
| tblVehicleEF | HHD | 3.1900e-003 | 3.9270e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 2.8910e-003 | 3.4130e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.58 | 0.57 |
| tblVehicleEF | HHD | 1.0500e-003 | 1.2110e-003 |
| tblVehicleEF | HHD | 0.16 | 0.17 |
| tblVehicleEF | HHD | 0.82 | 0.97 |
| tblVehicleEF | HHD | 3.34 | 3.83 |
| tblVehicleEF | HHD | 5.1430e-003 | 5.1440e-003 |
| tblVehicleEF | HHD | 0.02 | 0.02 |
| tblVehicleEF | HHD | 2.0710e-003 | 2.1860e-003 |
| tblVehicleEF | HHD | 2.8910e-003 | 3.4130e-003 |
| tblVehicleEF | HHD | 0.20 | 0.24 |
| tblVehicleEF | HHD | 0.66 | 0.65 |
| tblVehicleEF | HHD | 1.0500e-003 | 1.2110e-003 |
| tblVehicleEF | HHD | 0.19 | 0.20 |
| tblVehicleEF | HHD | 0.82 | 0.97 |
| tblVehicleEF | HHD | 3.59 | 4.11 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 2.47 | 2.63 |
| tblVehicleEF | LDA | 5.75 | 6.11 |
| tblVehicleEF | LDA | 246.08 | 257.62 |
| tblVehicleEF | LDA | 57.24 | 59.93 |
| tblVehicleEF | LDA | 0.45 | 0.45 |
| tblVehicleEF | LDA | 0.34 | 0.35 |
| tblVehicleEF | LDA | 0.30 | 0.32 |
| tblVehicleEF | LDA | 1.6070e-003 | 1.6480e-003 |
| tblVehicleEF | LDA | 3.5900e-003 | 3.5020e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDA | 1.4800e-003 | 1.5120e-003 |
| tblVehicleEF | LDA | 3.3110e-003 | 3.2200e-003 |
| tblVehicleEF | LDA | 0.17 | 0.19 |
| tblVehicleEF | LDA | 0.18 | 0.19 |
| tblVehicleEF | LDA | 0.11 | 0.12 |
| tblVehicleEF | LDA | 0.11 | 0.12 |
| tblVehicleEF | LDA | 0.39 | 0.42 |
| tblVehicleEF | LDA | 0.52 | 0.55 |
| tblVehicleEF | LDA | 3.3100e-003 | 3.3130e-003 |
| tblVehicleEF | LDA | 8.3900e-004 | 8.4600e-004 |
| tblVehicleEF | LDA | 0.17 | 0.19 |
| tblVehicleEF | LDA | 0.18 | 0.19 |
| tblVehicleEF | LDA | 0.11 | 0.12 |
| tblVehicleEF | LDA | 0.13 | 0.14 |
| tblVehicleEF | LDA | 0.39 | 0.42 |
| tblVehicleEF | LDA | 0.56 | 0.59 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 2.82 | 3.00 |
| tblVehicleEF | LDA | 6.01 | 6.39 |
| tblVehicleEF | LDA | 252.47 | 264.31 |
| tblVehicleEF | LDA | 57.24 | 59.93 |
| tblVehicleEF | LDA | 0.45 | 0.45 |
| tblVehicleEF | LDA | 0.30 | 0.32 |
| tblVehicleEF | LDA | 0.30 | 0.33 |
| tblVehicleEF | LDA | 1.6070e-003 | 1.6480e-003 |
| tblVehicleEF | LDA | 3.5900e-003 | 3.5020e-003 |
| tblVehicleEF | LDA | 1.4800e-003 | 1.5120e-003 |

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|---|---|---|---|
| tblVehicleEF | LDA | 3.3110e-003 | 3.2200e-003 |
| tblVehicleEF | LDA | 0.36 | 0.39 |
| tblVehicleEF | LDA | 0.26 | 0.28 |
| tblVehicleEF | LDA | 0.20 | 0.21 |
| tblVehicleEF | LDA | 0.12 | 0.13 |
| tblVehicleEF | LDA | 0.40 | 0.44 |
| tblVehicleEF | LDA | 0.52 | 0.56 |
| tblVehicleEF | LDA | 3.4020e-003 | 3.4050e-003 |
| tblVehicleEF | LDA | 8.4400e-004 | 8.5100e-004 |
| tblVehicleEF | LDA | 0.36 | 0.39 |
| tblVehicleEF | LDA | 0.26 | 0.28 |
| tblVehicleEF | LDA | 0.20 | 0.21 |
| tblVehicleEF | LDA | 0.15 | 0.16 |
| tblVehicleEF | LDA | 0.40 | 0.44 |
| tblVehicleEF | LDA | 0.56 | 0.59 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 2.12 | 2.26 |
| tblVehicleEF | LDA | 7.14 | 7.58 |
| tblVehicleEF | LDA | 232.04 | 242.93 |
| tblVehicleEF | LDA | 57.24 | 59.93 |
| tblVehicleEF | LDA | 0.45 | 0.45 |
| tblVehicleEF | LDA | 0.34 | 0.36 |
| tblVehicleEF | LDA | 0.32 | 0.35 |
| tblVehicleEF | LDA | 1.6070e-003 | 1.6480e-003 |
| tblVehicleEF | LDA | 3.5900e-003 | 3.5020e-003 |
| tblVehicleEF | LDA | 1.4800e-003 | 1.5120e-003 |
| tblVehicleEF | LDA | 3.3110e-003 | 3.2200e-003 |

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|---|---|---|---|
| tblVehicleEF | LDA | 0.07 | 0.08 |
| tblVehicleEF | LDA | 0.15 | 0.16 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 0.10 | 0.11 |
| tblVehicleEF | LDA | 0.43 | 0.46 |
| tblVehicleEF | LDA | 0.61 | 0.65 |
| tblVehicleEF | LDA | 3.1160e-003 | 3.1180e-003 |
| tblVehicleEF | LDA | 8.6400e-004 | 8.7200e-004 |
| tblVehicleEF | LDA | 0.07 | 0.08 |
| tblVehicleEF | LDA | 0.15 | 0.16 |
| tblVehicleEF | LDA | 0.03 | 0.03 |
| tblVehicleEF | LDA | 0.12 | 0.13 |
| tblVehicleEF | LDA | 0.43 | 0.46 |
| tblVehicleEF | LDA | 0.65 | 0.70 |
| tblVehicleEF | LDT1 | 0.02 | 0.03 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 3.24 | 3.76 |
| tblVehicleEF | LDT1 | 6.12 | 6.93 |
| tblVehicleEF | LDT1 | 290.71 | 303.32 |
| tblVehicleEF | LDT1 | 67.84 | 70.85 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.36 | 0.41 |
| tblVehicleEF | LDT1 | 0.37 | 0.41 |
| tblVehicleEF | LDT1 | 2.9930e-003 | 3.2950e-003 |
| tblVehicleEF | LDT1 | 5.4120e-003 | 5.7030e-003 |
| tblVehicleEF | LDT1 | 2.7510e-003 | 3.0140e-003 |
| tblVehicleEF | LDT1 | 4.9820e-003 | 5.2270e-003 |
| tblVehicleEF | LDT1 | 0.30 | 0.34 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 0.30 | 0.33 |
| tblVehicleEF | LDT1 | 0.21 | 0.23 |
| tblVehicleEF | LDT1 | 0.10 | 0.13 |
| tblVehicleEF | LDT1 | 1.03 | 1.15 |
| tblVehicleEF | LDT1 | 0.45 | 0.52 |
| tblVehicleEF | LDT1 | 3.8320e-003 | 3.8380e-003 |
| tblVehicleEF | LDT1 | 9.6000e-004 | 9.7600e-004 |
| tblVehicleEF | LDT1 | 0.30 | 0.34 |
| tblVehicleEF | LDT1 | 0.30 | 0.33 |
| tblVehicleEF | LDT1 | 0.21 | 0.23 |
| tblVehicleEF | LDT1 | 0.13 | 0.16 |
| tblVehicleEF | LDT1 | 1.03 | 1.15 |
| tblVehicleEF | LDT1 | 0.48 | 0.56 |
| tblVehicleEF | LDT1 | 0.02 | 0.03 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 3.72 | 4.31 |
| tblVehicleEF | LDT1 | 6.42 | 7.28 |
| tblVehicleEF | LDT1 | 297.84 | 310.71 |
| tblVehicleEF | LDT1 | 67.84 | 70.85 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.32 | 0.37 |
| tblVehicleEF | LDT1 | 0.38 | 0.42 |
| tblVehicleEF | LDT1 | 2.9930e-003 | 3.2950e-003 |
| tblVehicleEF | LDT1 | 5.4120e-003 | 5.7030e-003 |
| tblVehicleEF | LDT1 | 2.7510e-003 | 3.0140e-003 |
| tblVehicleEF | LDT1 | 4.9820e-003 | 5.2270e-003 |
| tblVehicleEF | LDT1 | 0.63 | 0.71 |
| tblVehicleEF | LDT1 | 0.40 | 0.45 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 0.35 | 0.39 |
| tblVehicleEF | LDT1 | 0.12 | 0.15 |
| tblVehicleEF | LDT1 | 1.09 | 1.21 |
| tblVehicleEF | LDT1 | 0.46 | 0.53 |
| tblVehicleEF | LDT1 | 3.9350e-003 | 3.9410e-003 |
| tblVehicleEF | LDT1 | 9.6500e-004 | 9.8100e-004 |
| tblVehicleEF | LDT1 | 0.63 | 0.71 |
| tblVehicleEF | LDT1 | 0.40 | 0.45 |
| tblVehicleEF | LDT1 | 0.35 | 0.39 |
| tblVehicleEF | LDT1 | 0.15 | 0.18 |
| tblVehicleEF | LDT1 | 1.09 | 1.21 |
| tblVehicleEF | LDT1 | 0.49 | 0.57 |
| tblVehicleEF | LDT1 | 0.02 | 0.03 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 2.86 | 3.33 |
| tblVehicleEF | LDT1 | 7.55 | 8.55 |
| tblVehicleEF | LDT1 | 275.04 | 287.07 |
| tblVehicleEF | LDT1 | 67.84 | 70.85 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.37 | 0.43 |
| tblVehicleEF | LDT1 | 0.39 | 0.44 |
| tblVehicleEF | LDT1 | 2.9930e-003 | 3.2950e-003 |
| tblVehicleEF | LDT1 | 5.4120e-003 | 5.7030e-003 |
| tblVehicleEF | LDT1 | 2.7510e-003 | 3.0140e-003 |
| tblVehicleEF | LDT1 | 4.9820e-003 | 5.2270e-003 |
| tblVehicleEF | LDT1 | 0.13 | 0.14 |
| tblVehicleEF | LDT1 | 0.26 | 0.30 |
| tblVehicleEF | LDT1 | 0.06 | 0.07 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 0.09 | 0.12 |
| tblVehicleEF | LDT1 | 1.15 | 1.28 |
| tblVehicleEF | LDT1 | 0.53 | 0.62 |
| tblVehicleEF | LDT1 | 3.6190e-003 | 3.6260e-003 |
| tblVehicleEF | LDT1 | 9.8500e-004 | 1.0040e-003 |
| tblVehicleEF | LDT1 | 0.13 | 0.14 |
| tblVehicleEF | LDT1 | 0.26 | 0.30 |
| tblVehicleEF | LDT1 | 0.06 | 0.07 |
| tblVehicleEF | LDT1 | 0.12 | 0.14 |
| tblVehicleEF | LDT1 | 1.15 | 1.28 |
| tblVehicleEF | LDT1 | 0.57 | 0.66 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |
| tblVehicleEF | LDT2 | 1.89 | 2.17 |
| tblVehicleEF | LDT2 | 3.90 | 4.45 |
| tblVehicleEF | LDT2 | 362.13 | 375.84 |
| tblVehicleEF | LDT2 | 83.72 | 86.86 |
| tblVehicleEF | LDT2 | 0.17 | 0.17 |
| tblVehicleEF | LDT2 | 0.24 | 0.28 |
| tblVehicleEF | LDT2 | 0.39 | 0.45 |
| tblVehicleEF | LDT2 | 1.6430e-003 | 1.7150e-003 |
| tblVehicleEF | LDT2 | 3.4820e-003 | 3.4150e-003 |
| tblVehicleEF | LDT2 | 1.5100e-003 | 1.5670e-003 |
| tblVehicleEF | LDT2 | 3.2090e-003 | 3.1320e-003 |
| tblVehicleEF | LDT2 | 0.15 | 0.17 |
| tblVehicleEF | LDT2 | 0.18 | 0.19 |
| tblVehicleEF | LDT2 | 0.11 | 0.12 |
| tblVehicleEF | LDT2 | 0.05 | 0.06 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 0.59 | 0.64 |
| tblVehicleEF | LDT2 | 0.25 | 0.30 |
| tblVehicleEF | LDT2 | 4.4820e-003 | 4.4870e-003 |
| tblVehicleEF | LDT2 | 1.0740e-003 | 1.0840e-003 |
| tblVehicleEF | LDT2 | 0.15 | 0.17 |
| tblVehicleEF | LDT2 | 0.18 | 0.19 |
| tblVehicleEF | LDT2 | 0.11 | 0.12 |
| tblVehicleEF | LDT2 | 0.07 | 0.08 |
| tblVehicleEF | LDT2 | 0.59 | 0.64 |
| tblVehicleEF | LDT2 | 0.27 | 0.32 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |
| tblVehicleEF | LDT2 | 2.16 | 2.48 |
| tblVehicleEF | LDT2 | 4.07 | 4.65 |
| tblVehicleEF | LDT2 | 371.33 | 385.36 |
| tblVehicleEF | LDT2 | 83.72 | 86.86 |
| tblVehicleEF | LDT2 | 0.17 | 0.17 |
| tblVehicleEF | LDT2 | 0.21 | 0.25 |
| tblVehicleEF | LDT2 | 0.40 | 0.46 |
| tblVehicleEF | LDT2 | 1.6430e-003 | 1.7150e-003 |
| tblVehicleEF | LDT2 | 3.4820e-003 | 3.4150e-003 |
| tblVehicleEF | LDT2 | 1.5100e-003 | 1.5670e-003 |
| tblVehicleEF | LDT2 | 3.2090e-003 | 3.1320e-003 |
| tblVehicleEF | LDT2 | 0.32 | 0.35 |
| tblVehicleEF | LDT2 | 0.23 | 0.26 |
| tblVehicleEF | LDT2 | 0.19 | 0.21 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.61 | 0.67 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 0.26 | 0.30 |
| tblVehicleEF | LDT2 | 4.6000e-003 | 4.6050e-003 |
| tblVehicleEF | LDT2 | 1.0770e-003 | 1.0870e-003 |
| tblVehicleEF | LDT2 | 0.32 | 0.35 |
| tblVehicleEF | LDT2 | 0.23 | 0.26 |
| tblVehicleEF | LDT2 | 0.19 | 0.21 |
| tblVehicleEF | LDT2 | 0.08 | 0.09 |
| tblVehicleEF | LDT2 | 0.61 | 0.67 |
| tblVehicleEF | LDT2 | 0.27 | 0.32 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |
| tblVehicleEF | LDT2 | 1.65 | 1.90 |
| tblVehicleEF | LDT2 | 4.84 | 5.52 |
| tblVehicleEF | LDT2 | 341.91 | 354.92 |
| tblVehicleEF | LDT2 | 83.72 | 86.86 |
| tblVehicleEF | LDT2 | 0.17 | 0.17 |
| tblVehicleEF | LDT2 | 0.24 | 0.28 |
| tblVehicleEF | LDT2 | 0.42 | 0.48 |
| tblVehicleEF | LDT2 | 1.6430e-003 | 1.7150e-003 |
| tblVehicleEF | LDT2 | 3.4820e-003 | 3.4150e-003 |
| tblVehicleEF | LDT2 | 1.5100e-003 | 1.5670e-003 |
| tblVehicleEF | LDT2 | 3.2090e-003 | 3.1320e-003 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.16 | 0.17 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.66 | 0.71 |
| tblVehicleEF | LDT2 | 0.30 | 0.35 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 4.2270e-003 | 4.2330e-003 |
| tblVehicleEF | LDT2 | 1.0900e-003 | 1.1020e-003 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.16 | 0.17 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 0.06 | 0.07 |
| tblVehicleEF | LDT2 | 0.66 | 0.71 |
| tblVehicleEF | LDT2 | 0.32 | 0.37 |
| tblVehicleEF | LHD1 | 1.2690e-003 | 1.2700e-003 |
| tblVehicleEF | LHD1 | 9.7930e-003 | 0.01 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.18 | 0.18 |
| tblVehicleEF | LHD1 | 1.16 | 1.29 |
| tblVehicleEF | LHD1 | 3.79 | 4.03 |
| tblVehicleEF | LHD1 | 8.63 | 8.76 |
| tblVehicleEF | LHD1 | 517.21 | 525.58 |
| tblVehicleEF | LHD1 | 35.27 | 35.68 |
| tblVehicleEF | LHD1 | 0.04 | 0.04 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 1.83 | 2.02 |
| tblVehicleEF | LHD1 | 1.40 | 1.44 |
| tblVehicleEF | LHD1 | 8.4600e-004 | 8.5500e-004 |
| tblVehicleEF | LHD1 | 0.05 | 0.05 |
| tblVehicleEF | LHD1 | 0.01 | 0.01 |
| tblVehicleEF | LHD1 | 8.1000e-004 | 8.9800e-004 |
| tblVehicleEF | LHD1 | 7.7900e-004 | 7.8700e-004 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 9.2110e-003 | 9.8140e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 7.5000e-004 | 8.3100e-004 |
| tblVehicleEF | LHD1 | 4.4200e-003 | 4.6750e-003 |
| tblVehicleEF | LHD1 | 0.07 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.1360e-003 | 2.2310e-003 |
| tblVehicleEF | LHD1 | 0.08 | 0.09 |
| tblVehicleEF | LHD1 | 0.42 | 0.44 |
| tblVehicleEF | LHD1 | 0.40 | 0.42 |
| tblVehicleEF | LHD1 | 5.3570e-003 | 5.3610e-003 |
| tblVehicleEF | LHD1 | 4.4300e-004 | 4.4600e-004 |
| tblVehicleEF | LHD1 | 4.4200e-003 | 4.6750e-003 |
| tblVehicleEF | LHD1 | 0.07 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.1360e-003 | 2.2310e-003 |
| tblVehicleEF | LHD1 | 0.10 | 0.11 |
| tblVehicleEF | LHD1 | 0.42 | 0.44 |
| tblVehicleEF | LHD1 | 0.42 | 0.45 |
| tblVehicleEF | LHD1 | 1.2690e-003 | 1.2700e-003 |
| tblVehicleEF | LHD1 | 9.7930e-003 | 0.01 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.18 | 0.18 |
| tblVehicleEF | LHD1 | 1.18 | 1.31 |
| tblVehicleEF | LHD1 | 3.38 | 3.60 |
| tblVehicleEF | LHD1 | 8.63 | 8.76 |
| tblVehicleEF | LHD1 | 517.21 | 525.58 |
| tblVehicleEF | LHD1 | 35.27 | 35.68 |
| tblVehicleEF | LHD1 | 0.04 | 0.04 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 1.64 | 1.81 |
| tblVehicleEF | LHD1 | 1.38 | 1.41 |
| tblVehicleEF | LHD1 | 8.4600e-004 | 8.5500e-004 |
| tblVehicleEF | LHD1 | 0.05 | 0.05 |
| tblVehicleEF | LHD1 | 0.01 | 0.01 |
| tblVehicleEF | LHD1 | 8.1000e-004 | 8.9800e-004 |
| tblVehicleEF | LHD1 | 7.7900e-004 | 7.8700e-004 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 9.2110e-003 | 9.8140e-003 |
| tblVehicleEF | LHD1 | 7.5000e-004 | 8.3100e-004 |
| tblVehicleEF | LHD1 | 9.0780e-003 | 9.6080e-003 |
| tblVehicleEF | LHD1 | 0.09 | 0.10 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 3.4560e-003 | 3.6360e-003 |
| tblVehicleEF | LHD1 | 0.09 | 0.09 |
| tblVehicleEF | LHD1 | 0.43 | 0.45 |
| tblVehicleEF | LHD1 | 0.37 | 0.40 |
| tblVehicleEF | LHD1 | 5.3570e-003 | 5.3620e-003 |
| tblVehicleEF | LHD1 | 4.3500e-004 | 4.3800e-004 |
| tblVehicleEF | LHD1 | 9.0780e-003 | 9.6080e-003 |
| tblVehicleEF | LHD1 | 0.09 | 0.10 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 3.4560e-003 | 3.6360e-003 |
| tblVehicleEF | LHD1 | 0.10 | 0.11 |
| tblVehicleEF | LHD1 | 0.43 | 0.45 |
| tblVehicleEF | LHD1 | 0.40 | 0.42 |
| tblVehicleEF | LHD1 | 1.2690e-003 | 1.2700e-003 |
| tblVehicleEF | LHD1 | 9.7930e-003 | 0.01 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.18 | 0.18 |
| tblVehicleEF | LHD1 | 1.13 | 1.26 |
| tblVehicleEF | LHD1 | 4.82 | 5.14 |
| tblVehicleEF | LHD1 | 8.63 | 8.76 |
| tblVehicleEF | LHD1 | 517.21 | 525.58 |
| tblVehicleEF | LHD1 | 35.27 | 35.68 |
| tblVehicleEF | LHD1 | 0.04 | 0.04 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 1.87 | 2.06 |
| tblVehicleEF | LHD1 | 1.47 | 1.51 |
| tblVehicleEF | LHD1 | 8.4600e-004 | 8.5500e-004 |
| tblVehicleEF | LHD1 | 0.05 | 0.05 |
| tblVehicleEF | LHD1 | 0.01 | 0.01 |
| tblVehicleEF | LHD1 | 8.1000e-004 | 8.9800e-004 |
| tblVehicleEF | LHD1 | 7.7900e-004 | 7.8700e-004 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 9.2110e-003 | 9.8140e-003 |
| tblVehicleEF | LHD1 | 7.5000e-004 | 8.3100e-004 |
| tblVehicleEF | LHD1 | 1.9690e-003 | 2.0890e-003 |
| tblVehicleEF | LHD1 | 0.06 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 7.3200e-004 | 7.5200e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.09 |
| tblVehicleEF | LHD1 | 0.44 | 0.46 |
| tblVehicleEF | LHD1 | 0.46 | 0.49 |
| tblVehicleEF | LHD1 | 5.3570e-003 | 5.3610e-003 |
| tblVehicleEF | LHD1 | 4.6100e-004 | 4.6500e-004 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LHD1 | 1.9690e-003 | 2.0890e-003 |
| tblVehicleEF | LHD1 | 0.06 | 0.07 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 7.3200e-004 | 7.5200e-004 |
| tblVehicleEF | LHD1 | 0.10 | 0.11 |
| tblVehicleEF | LHD1 | 0.44 | 0.46 |
| tblVehicleEF | LHD1 | 0.49 | 0.52 |
| tblVehicleEF | LHD2 | 9.1000e-004 | 9.1100e-004 |
| tblVehicleEF | LHD2 | 7.0380e-003 | 7.8700e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.14 | 0.14 |
| tblVehicleEF | LHD2 | 0.87 | 1.00 |
| tblVehicleEF | LHD2 | 2.26 | 2.50 |
| tblVehicleEF | LHD2 | 9.49 | 9.64 |
| tblVehicleEF | LHD2 | 507.97 | 516.33 |
| tblVehicleEF | LHD2 | 21.01 | 21.44 |
| tblVehicleEF | LHD2 | 5.5930e-003 | 5.5950e-003 |
| tblVehicleEF | LHD2 | 0.13 | 0.13 |
| tblVehicleEF | LHD2 | 2.42 | 2.67 |
| tblVehicleEF | LHD2 | 0.79 | 0.82 |
| tblVehicleEF | LHD2 | 1.4380e-003 | 1.4470e-003 |
| tblVehicleEF | LHD2 | 0.07 | 0.07 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 5.2100e-004 | 6.3200e-004 |
| tblVehicleEF | LHD2 | 1.3230e-003 | 1.3310e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.03 |
| tblVehicleEF | LHD2 | 2.6680e-003 | 2.6690e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.5800e-004 | 5.5000e-004 |
| tblVehicleEF | LHD2 | 2.5270e-003 | 2.8110e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.2190e-003 | 1.3330e-003 |
| tblVehicleEF | LHD2 | 0.08 | 0.09 |
| tblVehicleEF | LHD2 | 0.25 | 0.27 |
| tblVehicleEF | LHD2 | 0.22 | 0.24 |
| tblVehicleEF | LHD2 | 5.1930e-003 | 5.1980e-003 |
| tblVehicleEF | LHD2 | 2.6300e-004 | 2.6900e-004 |
| tblVehicleEF | LHD2 | 2.5270e-003 | 2.8110e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.2190e-003 | 1.3330e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.10 |
| tblVehicleEF | LHD2 | 0.25 | 0.27 |
| tblVehicleEF | LHD2 | 0.24 | 0.26 |
| tblVehicleEF | LHD2 | 9.1000e-004 | 9.1100e-004 |
| tblVehicleEF | LHD2 | 7.0380e-003 | 7.8700e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.14 | 0.14 |
| tblVehicleEF | LHD2 | 0.89 | 1.03 |
| tblVehicleEF | LHD2 | 2.05 | 2.28 |
| tblVehicleEF | LHD2 | 9.49 | 9.64 |
| tblVehicleEF | LHD2 | 507.97 | 516.33 |
| tblVehicleEF | LHD2 | 21.01 | 21.44 |
| tblVehicleEF | LHD2 | 5.5930e-003 | 5.5950e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.13 | 0.13 |
| tblVehicleEF | LHD2 | 2.19 | 2.42 |
| tblVehicleEF | LHD2 | 0.78 | 0.81 |
| tblVehicleEF | LHD2 | 1.4380e-003 | 1.4470e-003 |
| tblVehicleEF | LHD2 | 0.07 | 0.07 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 5.2100e-004 | 6.3200e-004 |
| tblVehicleEF | LHD2 | 1.3230e-003 | 1.3310e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.03 |
| tblVehicleEF | LHD2 | 2.6680e-003 | 2.6690e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.5800e-004 | 5.5000e-004 |
| tblVehicleEF | LHD2 | 5.2230e-003 | 5.8260e-003 |
| tblVehicleEF | LHD2 | 0.06 | 0.06 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.9850e-003 | 2.1890e-003 |
| tblVehicleEF | LHD2 | 0.08 | 0.09 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |
| tblVehicleEF | LHD2 | 0.21 | 0.23 |
| tblVehicleEF | LHD2 | 5.1940e-003 | 5.1990e-003 |
| tblVehicleEF | LHD2 | 2.6000e-004 | 2.6500e-004 |
| tblVehicleEF | LHD2 | 5.2230e-003 | 5.8260e-003 |
| tblVehicleEF | LHD2 | 0.06 | 0.06 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.9850e-003 | 2.1890e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.10 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.22 | 0.25 |
| tblVehicleEF | LHD2 | 9.1000e-004 | 9.1100e-004 |
| tblVehicleEF | LHD2 | 7.0380e-003 | 7.8700e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.14 | 0.14 |
| tblVehicleEF | LHD2 | 0.86 | 0.99 |
| tblVehicleEF | LHD2 | 2.81 | 3.10 |
| tblVehicleEF | LHD2 | 9.49 | 9.64 |
| tblVehicleEF | LHD2 | 507.97 | 516.33 |
| tblVehicleEF | LHD2 | 21.01 | 21.44 |
| tblVehicleEF | LHD2 | 5.5930e-003 | 5.5950e-003 |
| tblVehicleEF | LHD2 | 0.13 | 0.13 |
| tblVehicleEF | LHD2 | 2.45 | 2.71 |
| tblVehicleEF | LHD2 | 0.83 | 0.86 |
| tblVehicleEF | LHD2 | 1.4380e-003 | 1.4470e-003 |
| tblVehicleEF | LHD2 | 0.07 | 0.07 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 5.2100e-004 | 6.3200e-004 |
| tblVehicleEF | LHD2 | 1.3230e-003 | 1.3310e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.03 |
| tblVehicleEF | LHD2 | 2.6680e-003 | 2.6690e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.5800e-004 | 5.5000e-004 |
| tblVehicleEF | LHD2 | 1.1090e-003 | 1.2360e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 3.9800e-004 | 4.2600e-004 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.08 | 0.09 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |
| tblVehicleEF | LHD2 | 0.25 | 0.28 |
| tblVehicleEF | LHD2 | 5.1930e-003 | 5.1980e-003 |
| tblVehicleEF | LHD2 | 2.7300e-004 | 2.7900e-004 |
| tblVehicleEF | LHD2 | 1.1090e-003 | 1.2360e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 3.9800e-004 | 4.2600e-004 |
| tblVehicleEF | LHD2 | 0.09 | 0.10 |
| tblVehicleEF | LHD2 | 0.26 | 0.28 |
| tblVehicleEF | LHD2 | 0.27 | 0.30 |
| tblVehicleEF | MCY | 28.21 | 29.28 |
| tblVehicleEF | MCY | 9.55 | 9.53 |
| tblVehicleEF | MCY | 150.07 | 150.22 |
| tblVehicleEF | MCY | 41.75 | 43.15 |
| tblVehicleEF | MCY | 2.3740e-003 | 2.3930e-003 |
| tblVehicleEF | MCY | 1.24 | 1.25 |
| tblVehicleEF | MCY | 0.30 | 0.30 |
| tblVehicleEF | MCY | 4.4700e-004 | 5.1600e-004 |
| tblVehicleEF | MCY | 1.2100e-003 | 1.3910e-003 |
| tblVehicleEF | MCY | 3.6800e-004 | 4.2200e-004 |
| tblVehicleEF | MCY | 9.8500e-004 | 1.1200e-003 |
| tblVehicleEF | MCY | 2.15 | 2.17 |
| tblVehicleEF | MCY | 0.68 | 0.70 |
| tblVehicleEF | MCY | 1.36 | 1.38 |
| tblVehicleEF | MCY | 2.70 | 2.74 |
| tblVehicleEF | MCY | 1.45 | 1.54 |

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|---|---|---|---|
| tblVehicleEF | MCY | 1.98 | 1.99 |
| tblVehicleEF | MCY | 2.1070e-003 | 2.1020e-003 |
| tblVehicleEF | MCY | 6.5200e-004 | 6.5900e-004 |
| tblVehicleEF | MCY | 2.15 | 2.17 |
| tblVehicleEF | MCY | 0.68 | 0.70 |
| tblVehicleEF | MCY | 1.36 | 1.38 |
| tblVehicleEF | MCY | 2.96 | 2.99 |
| tblVehicleEF | MCY | 1.45 | 1.54 |
| tblVehicleEF | MCY | 2.12 | 2.14 |
| tblVehicleEF | MCY | 31.32 | 32.54 |
| tblVehicleEF | MCY | 9.34 | 9.36 |
| tblVehicleEF | MCY | 150.07 | 150.22 |
| tblVehicleEF | MCY | 41.75 | 43.15 |
| tblVehicleEF | MCY | 2.3740e-003 | 2.3930e-003 |
| tblVehicleEF | MCY | 1.01 | 1.02 |
| tblVehicleEF | MCY | 0.29 | 0.29 |
| tblVehicleEF | MCY | 4.4700e-004 | 5.1600e-004 |
| tblVehicleEF | MCY | 1.2100e-003 | 1.3910e-003 |
| tblVehicleEF | MCY | 3.6800e-004 | 4.2200e-004 |
| tblVehicleEF | MCY | 9.8500e-004 | 1.1200e-003 |
| tblVehicleEF | MCY | 4.48 | 4.54 |
| tblVehicleEF | MCY | 1.17 | 1.19 |
| tblVehicleEF | MCY | 2.56 | 2.58 |
| tblVehicleEF | MCY | 2.74 | 2.77 |
| tblVehicleEF | MCY | 1.52 | 1.61 |
| tblVehicleEF | MCY | 1.89 | 1.91 |
| tblVehicleEF | MCY | 2.1570e-003 | 2.1550e-003 |
| tblVehicleEF | MCY | 6.4500e-004 | 6.5400e-004 |

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|---|---|---|---|
| tblVehicleEF | MCY | 4.48 | 4.54 |
| tblVehicleEF | MCY | 1.17 | 1.19 |
| tblVehicleEF | MCY | 2.56 | 2.58 |
| tblVehicleEF | MCY | 2.99 | 3.03 |
| tblVehicleEF | MCY | 1.52 | 1.61 |
| tblVehicleEF | MCY | 2.03 | 2.05 |
| tblVehicleEF | MCY | 28.43 | 29.53 |
| tblVehicleEF | MCY | 10.93 | 10.85 |
| tblVehicleEF | MCY | 150.07 | 150.22 |
| tblVehicleEF | MCY | 41.75 | 43.15 |
| tblVehicleEF | MCY | 2.3740e-003 | 2.3930e-003 |
| tblVehicleEF | MCY | 1.32 | 1.33 |
| tblVehicleEF | MCY | 0.32 | 0.32 |
| tblVehicleEF | MCY | 4.4700e-004 | 5.1600e-004 |
| tblVehicleEF | MCY | 1.2100e-003 | 1.3910e-003 |
| tblVehicleEF | MCY | 3.6800e-004 | 4.2200e-004 |
| tblVehicleEF | MCY | 9.8500e-004 | 1.1200e-003 |
| tblVehicleEF | MCY | 0.94 | 0.95 |
| tblVehicleEF | MCY | 0.50 | 0.52 |
| tblVehicleEF | MCY | 0.26 | 0.27 |
| tblVehicleEF | MCY | 2.78 | 2.82 |
| tblVehicleEF | MCY | 1.63 | 1.72 |
| tblVehicleEF | MCY | 2.29 | 2.31 |
| tblVehicleEF | MCY | 2.1130e-003 | 2.1090e-003 |
| tblVehicleEF | MCY | 6.8300e-004 | 6.9000e-004 |
| tblVehicleEF | MCY | 0.94 | 0.95 |
| tblVehicleEF | MCY | 0.50 | 0.52 |
| tblVehicleEF | MCY | 0.26 | 0.27 |

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|---|---|---|---|
| tblVehicleEF | MCY | 3.03 | 3.08 |
| tblVehicleEF | MCY | 1.63 | 1.72 |
| tblVehicleEF | MCY | 2.46 | 2.48 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 2.36 | 2.59 |
| tblVehicleEF | MDV | 5.75 | 6.27 |
| tblVehicleEF | MDV | 476.77 | 493.22 |
| tblVehicleEF | MDV | 109.52 | 112.99 |
| tblVehicleEF | MDV | 0.16 | 0.16 |
| tblVehicleEF | MDV | 0.37 | 0.42 |
| tblVehicleEF | MDV | 0.64 | 0.71 |
| tblVehicleEF | MDV | 1.6430e-003 | 1.6670e-003 |
| tblVehicleEF | MDV | 3.4800e-003 | 3.3970e-003 |
| tblVehicleEF | MDV | 1.5180e-003 | 1.5390e-003 |
| tblVehicleEF | MDV | 3.2210e-003 | 3.1410e-003 |
| tblVehicleEF | MDV | 0.17 | 0.18 |
| tblVehicleEF | MDV | 0.22 | 0.23 |
| tblVehicleEF | MDV | 0.14 | 0.14 |
| tblVehicleEF | MDV | 0.07 | 0.07 |
| tblVehicleEF | MDV | 0.76 | 0.77 |
| tblVehicleEF | MDV | 0.42 | 0.47 |
| tblVehicleEF | MDV | 5.7100e-003 | 5.7090e-003 |
| tblVehicleEF | MDV | 1.3760e-003 | 1.3830e-003 |
| tblVehicleEF | MDV | 0.17 | 0.18 |
| tblVehicleEF | MDV | 0.22 | 0.23 |
| tblVehicleEF | MDV | 0.14 | 0.14 |
| tblVehicleEF | MDV | 0.09 | 0.10 |

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|---|---|---|---|
| tblVehicleEF | MDV | 0.76 | 0.77 |
| tblVehicleEF | MDV | 0.45 | 0.50 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 2.69 | 2.95 |
| tblVehicleEF | MDV | 5.99 | 6.54 |
| tblVehicleEF | MDV | 488.78 | 505.60 |
| tblVehicleEF | MDV | 109.52 | 112.99 |
| tblVehicleEF | MDV | 0.16 | 0.16 |
| tblVehicleEF | MDV | 0.34 | 0.38 |
| tblVehicleEF | MDV | 0.65 | 0.72 |
| tblVehicleEF | MDV | 1.6430e-003 | 1.6670e-003 |
| tblVehicleEF | MDV | 3.4800e-003 | 3.3970e-003 |
| tblVehicleEF | MDV | 1.5180e-003 | 1.5390e-003 |
| tblVehicleEF | MDV | 3.2210e-003 | 3.1410e-003 |
| tblVehicleEF | MDV | 0.36 | 0.37 |
| tblVehicleEF | MDV | 0.29 | 0.30 |
| tblVehicleEF | MDV | 0.22 | 0.22 |
| tblVehicleEF | MDV | 0.07 | 0.08 |
| tblVehicleEF | MDV | 0.80 | 0.81 |
| tblVehicleEF | MDV | 0.43 | 0.47 |
| tblVehicleEF | MDV | 5.8600e-003 | 5.8580e-003 |
| tblVehicleEF | MDV | 1.3800e-003 | 1.3870e-003 |
| tblVehicleEF | MDV | 0.36 | 0.37 |
| tblVehicleEF | MDV | 0.29 | 0.30 |
| tblVehicleEF | MDV | 0.22 | 0.22 |
| tblVehicleEF | MDV | 0.10 | 0.11 |
| tblVehicleEF | MDV | 0.80 | 0.81 |

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|---|---|---|---|
| tblVehicleEF | MDV | 0.45 | 0.50 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 2.05 | 2.25 |
| tblVehicleEF | MDV | 7.13 | 7.78 |
| tblVehicleEF | MDV | 450.37 | 465.99 |
| tblVehicleEF | MDV | 109.52 | 112.99 |
| tblVehicleEF | MDV | 0.16 | 0.16 |
| tblVehicleEF | MDV | 0.38 | 0.43 |
| tblVehicleEF | MDV | 0.69 | 0.76 |
| tblVehicleEF | MDV | 1.6430e-003 | 1.6670e-003 |
| tblVehicleEF | MDV | 3.4800e-003 | 3.3970e-003 |
| tblVehicleEF | MDV | 1.5180e-003 | 1.5390e-003 |
| tblVehicleEF | MDV | 3.2210e-003 | 3.1410e-003 |
| tblVehicleEF | MDV | 0.07 | 0.07 |
| tblVehicleEF | MDV | 0.20 | 0.20 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.85 | 0.86 |
| tblVehicleEF | MDV | 0.50 | 0.56 |
| tblVehicleEF | MDV | 5.3890e-003 | 5.3880e-003 |
| tblVehicleEF | MDV | 1.4000e-003 | 1.4090e-003 |
| tblVehicleEF | MDV | 0.07 | 0.07 |
| tblVehicleEF | MDV | 0.20 | 0.20 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 0.08 | 0.09 |
| tblVehicleEF | MDV | 0.85 | 0.86 |
| tblVehicleEF | MDV | 0.53 | 0.59 |

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|---|---|---|---|
| tblVehicleEF | MH | 4.83 | 6.32 |
| tblVehicleEF | MH | 9.62 | 10.99 |
| tblVehicleEF | MH | 578.24 | 587.55 |
| tblVehicleEF | MH | 32.21 | 33.59 |
| tblVehicleEF | MH | 2.0580e-003 | 2.0540e-003 |
| tblVehicleEF | MH | 1.59 | 1.79 |
| tblVehicleEF | MH | 1.14 | 1.23 |
| tblVehicleEF | MH | 0.05 | 0.05 |
| tblVehicleEF | MH | 8.3990e-003 | 8.4010e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.5000e-003 | 1.9550e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.3270e-003 | 1.7030e-003 |
| tblVehicleEF | MH | 2.83 | 3.26 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.90 | 1.03 |
| tblVehicleEF | MH | 0.12 | 0.15 |
| tblVehicleEF | MH | 2.24 | 2.48 |
| tblVehicleEF | MH | 0.61 | 0.72 |
| tblVehicleEF | MH | 6.1080e-003 | 6.1340e-003 |
| tblVehicleEF | MH | 5.0900e-004 | 5.4300e-004 |
| tblVehicleEF | MH | 2.83 | 3.26 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.90 | 1.03 |
| tblVehicleEF | MH | 0.15 | 0.19 |
| tblVehicleEF | MH | 2.24 | 2.48 |
| tblVehicleEF | MH | 0.65 | 0.77 |

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|---|---|---|---|
| tblVehicleEF | MH | 5.03 | 6.62 |
| tblVehicleEF | MH | 8.51 | 9.76 |
| tblVehicleEF | MH | 578.24 | 587.55 |
| tblVehicleEF | MH | 32.21 | 33.59 |
| tblVehicleEF | MH | 2.0580e-003 | 2.0540e-003 |
| tblVehicleEF | MH | 1.36 | 1.53 |
| tblVehicleEF | MH | 1.12 | 1.20 |
| tblVehicleEF | MH | 0.05 | 0.05 |
| tblVehicleEF | MH | 8.3990e-003 | 8.4010e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.5000e-003 | 1.9550e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.3270e-003 | 1.7030e-003 |
| tblVehicleEF | MH | 5.90 | 6.80 |
| tblVehicleEF | MH | 0.14 | 0.16 |
| tblVehicleEF | MH | 1.37 | 1.58 |
| tblVehicleEF | MH | 0.12 | 0.16 |
| tblVehicleEF | MH | 2.27 | 2.51 |
| tblVehicleEF | MH | 0.56 | 0.66 |
| tblVehicleEF | MH | 6.1120e-003 | 6.1390e-003 |
| tblVehicleEF | MH | 4.9000e-004 | 5.2200e-004 |
| tblVehicleEF | MH | 5.90 | 6.80 |
| tblVehicleEF | MH | 0.14 | 0.16 |
| tblVehicleEF | MH | 1.37 | 1.58 |
| tblVehicleEF | MH | 0.15 | 0.19 |
| tblVehicleEF | MH | 2.27 | 2.51 |
| tblVehicleEF | MH | 0.60 | 0.71 |

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|---|---|---|---|
| tblVehicleEF | MH | 4.67 | 6.13 |
| tblVehicleEF | MH | 12.61 | 14.36 |
| tblVehicleEF | MH | 578.24 | 587.55 |
| tblVehicleEF | MH | 32.21 | 33.59 |
| tblVehicleEF | MH | 2.0580e-003 | 2.0540e-003 |
| tblVehicleEF | MH | 1.66 | 1.87 |
| tblVehicleEF | MH | 1.20 | 1.29 |
| tblVehicleEF | MH | 0.05 | 0.05 |
| tblVehicleEF | MH | 8.3990e-003 | 8.4010e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.5000e-003 | 1.9550e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.3270e-003 | 1.7030e-003 |
| tblVehicleEF | MH | 1.41 | 1.62 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.36 | 0.41 |
| tblVehicleEF | MH | 0.12 | 0.15 |
| tblVehicleEF | MH | 2.32 | 2.57 |
| tblVehicleEF | MH | 0.74 | 0.88 |
| tblVehicleEF | MH | 6.1060e-003 | 6.1310e-003 |
| tblVehicleEF | MH | 5.6000e-004 | 6.0100e-004 |
| tblVehicleEF | MH | 1.41 | 1.62 |
| tblVehicleEF | MH | 0.11 | 0.13 |
| tblVehicleEF | MH | 0.36 | 0.41 |
| tblVehicleEF | MH | 0.14 | 0.18 |
| tblVehicleEF | MH | 2.32 | 2.57 |
| tblVehicleEF | MH | 0.80 | 0.94 |

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|---|---|---|---|
| tblVehicleEF | MHD | 8.2170e-003 | 8.7450e-003 |
| tblVehicleEF | MHD | 3.4250e-003 | 3.9360e-003 |
| tblVehicleEF | MHD | 1.86 | 1.90 |
| tblVehicleEF | MHD | 1.42 | 1.74 |
| tblVehicleEF | MHD | 19.14 | 21.71 |
| tblVehicleEF | MHD | 593.73 | 599.36 |
| tblVehicleEF | MHD | 841.36 | 857.48 |
| tblVehicleEF | MHD | 58.04 | 61.87 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.60 | 6.98 |
| tblVehicleEF | MHD | 2.89 | 3.35 |
| tblVehicleEF | MHD | 2.12 | 2.29 |
| tblVehicleEF | MHD | 0.03 | 0.04 |
| tblVehicleEF | MHD | 0.10 | 0.10 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 0.08 | 0.10 |
| tblVehicleEF | MHD | 3.4720e-003 | 4.5650e-003 |
| tblVehicleEF | MHD | 0.03 | 0.04 |
| tblVehicleEF | MHD | 0.04 | 0.04 |
| tblVehicleEF | MHD | 2.6740e-003 | 2.6780e-003 |
| tblVehicleEF | MHD | 0.08 | 0.09 |
| tblVehicleEF | MHD | 2.8940e-003 | 3.7500e-003 |
| tblVehicleEF | MHD | 8.1560e-003 | 9.7400e-003 |
| tblVehicleEF | MHD | 0.20 | 0.25 |
| tblVehicleEF | MHD | 0.18 | 0.19 |
| tblVehicleEF | MHD | 3.8230e-003 | 4.5030e-003 |
| tblVehicleEF | MHD | 0.11 | 0.13 |
| tblVehicleEF | MHD | 0.87 | 1.03 |

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|---|---|---|---|
| tblVehicleEF | MHD | 1.44 | 1.71 |
| tblVehicleEF | MHD | 5.9630e-003 | 5.9260e-003 |
| tblVehicleEF | MHD | 8.5480e-003 | 8.5790e-003 |
| tblVehicleEF | MHD | 9.5600e-004 | 1.0350e-003 |
| tblVehicleEF | MHD | 8.1560e-003 | 9.7400e-003 |
| tblVehicleEF | MHD | 0.20 | 0.25 |
| tblVehicleEF | MHD | 0.20 | 0.21 |
| tblVehicleEF | MHD | 3.8230e-003 | 4.5030e-003 |
| tblVehicleEF | MHD | 0.13 | 0.15 |
| tblVehicleEF | MHD | 0.87 | 1.03 |
| tblVehicleEF | MHD | 1.55 | 1.83 |
| tblVehicleEF | MHD | 7.7440e-003 | 8.2410e-003 |
| tblVehicleEF | MHD | 3.4250e-003 | 3.9360e-003 |
| tblVehicleEF | MHD | 1.35 | 1.38 |
| tblVehicleEF | MHD | 1.48 | 1.81 |
| tblVehicleEF | MHD | 17.63 | 20.20 |
| tblVehicleEF | MHD | 629.00 | 634.97 |
| tblVehicleEF | MHD | 841.36 | 857.48 |
| tblVehicleEF | MHD | 58.04 | 61.87 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.81 | 7.20 |
| tblVehicleEF | MHD | 2.59 | 3.01 |
| tblVehicleEF | MHD | 2.08 | 2.25 |
| tblVehicleEF | MHD | 0.03 | 0.03 |
| tblVehicleEF | MHD | 0.10 | 0.10 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 0.08 | 0.10 |
| tblVehicleEF | MHD | 3.4720e-003 | 4.5650e-003 |

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|---|---|---|---|
| tblVehicleEF | MHD | 0.02 | 0.03 |
| tblVehicleEF | MHD | 0.04 | 0.04 |
| tblVehicleEF | MHD | 2.6740e-003 | 2.6780e-003 |
| tblVehicleEF | MHD | 0.08 | 0.09 |
| tblVehicleEF | MHD | 2.8940e-003 | 3.7500e-003 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 0.25 | 0.32 |
| tblVehicleEF | MHD | 0.17 | 0.18 |
| tblVehicleEF | MHD | 6.2270e-003 | 7.3600e-003 |
| tblVehicleEF | MHD | 0.11 | 0.13 |
| tblVehicleEF | MHD | 0.90 | 1.07 |
| tblVehicleEF | MHD | 1.36 | 1.61 |
| tblVehicleEF | MHD | 6.3170e-003 | 6.2780e-003 |
| tblVehicleEF | MHD | 8.5480e-003 | 8.5800e-003 |
| tblVehicleEF | MHD | 9.3000e-004 | 1.0080e-003 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 0.25 | 0.32 |
| tblVehicleEF | MHD | 0.19 | 0.20 |
| tblVehicleEF | MHD | 6.2270e-003 | 7.3600e-003 |
| tblVehicleEF | MHD | 0.13 | 0.15 |
| tblVehicleEF | MHD | 0.90 | 1.07 |
| tblVehicleEF | MHD | 1.46 | 1.73 |
| tblVehicleEF | MHD | 8.8710e-003 | 9.4400e-003 |
| tblVehicleEF | MHD | 3.4250e-003 | 3.9360e-003 |
| tblVehicleEF | MHD | 2.56 | 2.61 |
| tblVehicleEF | MHD | 1.40 | 1.72 |
| tblVehicleEF | MHD | 23.67 | 26.56 |
| tblVehicleEF | MHD | 545.01 | 550.19 |

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|---|---|---|---|
| tblVehicleEF | MHD | 841.36 | 857.48 |
| tblVehicleEF | MHD | 58.04 | 61.87 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.31 | 6.67 |
| tblVehicleEF | MHD | 2.93 | 3.40 |
| tblVehicleEF | MHD | 2.23 | 2.41 |
| tblVehicleEF | MHD | 0.04 | 0.05 |
| tblVehicleEF | MHD | 0.10 | 0.10 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 0.08 | 0.10 |
| tblVehicleEF | MHD | 3.4720e-003 | 4.5650e-003 |
| tblVehicleEF | MHD | 0.03 | 0.04 |
| tblVehicleEF | MHD | 0.04 | 0.04 |
| tblVehicleEF | MHD | 2.6740e-003 | 2.6780e-003 |
| tblVehicleEF | MHD | 0.08 | 0.09 |
| tblVehicleEF | MHD | 2.8940e-003 | 3.7500e-003 |
| tblVehicleEF | MHD | 3.5420e-003 | 4.2210e-003 |
| tblVehicleEF | MHD | 0.19 | 0.25 |
| tblVehicleEF | MHD | 0.19 | 0.20 |
| tblVehicleEF | MHD | 1.2300e-003 | 1.4290e-003 |
| tblVehicleEF | MHD | 0.11 | 0.13 |
| tblVehicleEF | MHD | 0.91 | 1.07 |
| tblVehicleEF | MHD | 1.70 | 2.02 |
| tblVehicleEF | MHD | 5.4730e-003 | 5.4390e-003 |
| tblVehicleEF | MHD | 8.5470e-003 | 8.5790e-003 |
| tblVehicleEF | MHD | 1.0350e-003 | 1.1210e-003 |
| tblVehicleEF | MHD | 3.5420e-003 | 4.2210e-003 |
| tblVehicleEF | MHD | 0.19 | 0.25 |

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|---|---|---|---|
| tblVehicleEF | MHD | 0.22 | 0.23 |
| tblVehicleEF | MHD | 1.2300e-003 | 1.4290e-003 |
| tblVehicleEF | MHD | 0.13 | 0.15 |
| tblVehicleEF | MHD | 0.91 | 1.07 |
| tblVehicleEF | MHD | 1.82 | 2.16 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 1.7570e-003 | 2.0040e-003 |
| tblVehicleEF | OBUS | 2.37 | 2.36 |
| tblVehicleEF | OBUS | 1.76 | 2.09 |
| tblVehicleEF | OBUS | 12.97 | 14.29 |
| tblVehicleEF | OBUS | 563.74 | 571.35 |
| tblVehicleEF | OBUS | 926.08 | 947.54 |
| tblVehicleEF | OBUS | 35.14 | 36.47 |
| tblVehicleEF | OBUS | 1.8600e-003 | 1.8690e-003 |
| tblVehicleEF | OBUS | 5.55 | 5.94 |
| tblVehicleEF | OBUS | 3.23 | 3.78 |
| tblVehicleEF | OBUS | 2.01 | 2.15 |
| tblVehicleEF | OBUS | 0.01 | 0.02 |
| tblVehicleEF | OBUS | 0.09 | 0.09 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 1.5890e-003 | 2.0050e-003 |
| tblVehicleEF | OBUS | 9.6700e-003 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.04 |
| tblVehicleEF | OBUS | 2.5360e-003 | 2.5430e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 1.4430e-003 | 1.7870e-003 |
| tblVehicleEF | OBUS | 3.4490e-003 | 3.9110e-003 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.40 | 0.41 |
| tblVehicleEF | OBUS | 1.2760e-003 | 1.4280e-003 |
| tblVehicleEF | OBUS | 0.11 | 0.13 |
| tblVehicleEF | OBUS | 0.66 | 0.73 |
| tblVehicleEF | OBUS | 0.93 | 1.05 |
| tblVehicleEF | OBUS | 5.6610e-003 | 5.6490e-003 |
| tblVehicleEF | OBUS | 9.4380e-003 | 9.5090e-003 |
| tblVehicleEF | OBUS | 6.0200e-004 | 6.3500e-004 |
| tblVehicleEF | OBUS | 3.4490e-003 | 3.9110e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.46 | 0.47 |
| tblVehicleEF | OBUS | 1.2760e-003 | 1.4280e-003 |
| tblVehicleEF | OBUS | 0.13 | 0.15 |
| tblVehicleEF | OBUS | 0.66 | 0.73 |
| tblVehicleEF | OBUS | 1.00 | 1.12 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 1.7570e-003 | 2.0040e-003 |
| tblVehicleEF | OBUS | 1.72 | 1.72 |
| tblVehicleEF | OBUS | 1.79 | 2.12 |
| tblVehicleEF | OBUS | 11.62 | 12.86 |
| tblVehicleEF | OBUS | 597.23 | 605.30 |
| tblVehicleEF | OBUS | 926.08 | 947.54 |
| tblVehicleEF | OBUS | 35.14 | 36.47 |
| tblVehicleEF | OBUS | 1.8600e-003 | 1.8690e-003 |
| tblVehicleEF | OBUS | 5.73 | 6.13 |
| tblVehicleEF | OBUS | 2.89 | 3.39 |
| tblVehicleEF | OBUS | 1.97 | 2.11 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 8.8610e-003 | 0.02 |
| tblVehicleEF | OBUS | 0.09 | 0.09 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 1.5890e-003 | 2.0050e-003 |
| tblVehicleEF | OBUS | 8.1520e-003 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.04 |
| tblVehicleEF | OBUS | 2.5360e-003 | 2.5430e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 1.4430e-003 | 1.7870e-003 |
| tblVehicleEF | OBUS | 7.1970e-003 | 8.1900e-003 |
| tblVehicleEF | OBUS | 0.05 | 0.06 |
| tblVehicleEF | OBUS | 0.38 | 0.39 |
| tblVehicleEF | OBUS | 1.9550e-003 | 2.1990e-003 |
| tblVehicleEF | OBUS | 0.11 | 0.13 |
| tblVehicleEF | OBUS | 0.67 | 0.75 |
| tblVehicleEF | OBUS | 0.88 | 0.99 |
| tblVehicleEF | OBUS | 5.9980e-003 | 5.9840e-003 |
| tblVehicleEF | OBUS | 9.4390e-003 | 9.5090e-003 |
| tblVehicleEF | OBUS | 5.7900e-004 | 6.1000e-004 |
| tblVehicleEF | OBUS | 7.1970e-003 | 8.1900e-003 |
| tblVehicleEF | OBUS | 0.05 | 0.06 |
| tblVehicleEF | OBUS | 0.43 | 0.44 |
| tblVehicleEF | OBUS | 1.9550e-003 | 2.1990e-003 |
| tblVehicleEF | OBUS | 0.13 | 0.16 |
| tblVehicleEF | OBUS | 0.67 | 0.75 |
| tblVehicleEF | OBUS | 0.94 | 1.05 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 1.7570e-003 | 2.0040e-003 |
| tblVehicleEF | OBUS | 3.26 | 3.26 |
| tblVehicleEF | OBUS | 1.72 | 2.04 |
| tblVehicleEF | OBUS | 16.54 | 18.14 |
| tblVehicleEF | OBUS | 517.49 | 524.48 |
| tblVehicleEF | OBUS | 926.08 | 947.54 |
| tblVehicleEF | OBUS | 35.14 | 36.47 |
| tblVehicleEF | OBUS | 1.8600e-003 | 1.8690e-003 |
| tblVehicleEF | OBUS | 5.30 | 5.67 |
| tblVehicleEF | OBUS | 3.29 | 3.85 |
| tblVehicleEF | OBUS | 2.11 | 2.26 |
| tblVehicleEF | OBUS | 0.01 | 0.02 |
| tblVehicleEF | OBUS | 0.09 | 0.09 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 1.5890e-003 | 2.0050e-003 |
| tblVehicleEF | OBUS | 0.01 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.04 |
| tblVehicleEF | OBUS | 2.5360e-003 | 2.5430e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 1.4430e-003 | 1.7870e-003 |
| tblVehicleEF | OBUS | 1.6380e-003 | 1.8600e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.44 | 0.45 |
| tblVehicleEF | OBUS | 4.7700e-004 | 5.2800e-004 |
| tblVehicleEF | OBUS | 0.11 | 0.13 |
| tblVehicleEF | OBUS | 0.68 | 0.76 |
| tblVehicleEF | OBUS | 1.09 | 1.22 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 5.1970e-003 | 5.1850e-003 |
| tblVehicleEF | OBUS | 9.4380e-003 | 9.5080e-003 |
| tblVehicleEF | OBUS | 6.6300e-004 | 7.0100e-004 |
| tblVehicleEF | OBUS | 1.6380e-003 | 1.8600e-003 |
| tblVehicleEF | OBUS | 0.04 | 0.05 |
| tblVehicleEF | OBUS | 0.50 | 0.51 |
| tblVehicleEF | OBUS | 4.7700e-004 | 5.2800e-004 |
| tblVehicleEF | OBUS | 0.13 | 0.15 |
| tblVehicleEF | OBUS | 0.68 | 0.76 |
| tblVehicleEF | OBUS | 1.16 | 1.31 |
| tblVehicleEF | SBUS | 5.4440e-003 | 5.4360e-003 |
| tblVehicleEF | SBUS | 4.8860e-003 | 4.8500e-003 |
| tblVehicleEF | SBUS | 1.07 | 1.06 |
| tblVehicleEF | SBUS | 21.12 | 25.20 |
| tblVehicleEF | SBUS | 42.56 | 47.50 |
| tblVehicleEF | SBUS | 562.55 | 570.82 |
| tblVehicleEF | SBUS | 949.40 | 967.22 |
| tblVehicleEF | SBUS | 137.71 | 144.59 |
| tblVehicleEF | SBUS | 6.7700e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 8.05 | 8.09 |
| tblVehicleEF | SBUS | 6.11 | 6.32 |
| tblVehicleEF | SBUS | 2.23 | 2.33 |
| tblVehicleEF | SBUS | 0.03 | 0.03 |
| tblVehicleEF | SBUS | 0.36 | 0.37 |
| tblVehicleEF | SBUS | 9.8520e-003 | 9.8700e-003 |
| tblVehicleEF | SBUS | 0.06 | 0.06 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 0.16 | 0.16 |
| tblVehicleEF | SBUS | 2.4630e-003 | 2.4680e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.05 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.12 | 0.13 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |
| tblVehicleEF | SBUS | 0.12 | 0.12 |
| tblVehicleEF | SBUS | 0.04 | 0.04 |
| tblVehicleEF | SBUS | 1.49 | 1.69 |
| tblVehicleEF | SBUS | 2.81 | 3.24 |
| tblVehicleEF | SBUS | 3.85 | 4.43 |
| tblVehicleEF | SBUS | 5.6490e-003 | 5.6430e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 2.2370e-003 | 2.3820e-003 |
| tblVehicleEF | SBUS | 0.12 | 0.13 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |
| tblVehicleEF | SBUS | 0.13 | 0.13 |
| tblVehicleEF | SBUS | 0.04 | 0.04 |
| tblVehicleEF | SBUS | 1.60 | 1.82 |
| tblVehicleEF | SBUS | 2.81 | 3.24 |
| tblVehicleEF | SBUS | 4.13 | 4.76 |
| tblVehicleEF | SBUS | 5.1310e-003 | 5.1230e-003 |
| tblVehicleEF | SBUS | 4.8860e-003 | 4.8500e-003 |
| tblVehicleEF | SBUS | 0.78 | 0.77 |
| tblVehicleEF | SBUS | 22.86 | 27.38 |
| tblVehicleEF | SBUS | 40.04 | 44.98 |
| tblVehicleEF | SBUS | 595.97 | 604.73 |
| tblVehicleEF | SBUS | 949.40 | 967.22 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 137.71 | 144.59 |
| tblVehicleEF | SBUS | 6.7700e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 8.31 | 8.35 |
| tblVehicleEF | SBUS | 5.41 | 5.59 |
| tblVehicleEF | SBUS | 2.13 | 2.22 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.36 | 0.37 |
| tblVehicleEF | SBUS | 9.8520e-003 | 9.8700e-003 |
| tblVehicleEF | SBUS | 0.06 | 0.06 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.16 | 0.16 |
| tblVehicleEF | SBUS | 2.4630e-003 | 2.4680e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.05 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.25 | 0.29 |
| tblVehicleEF | SBUS | 0.57 | 0.68 |
| tblVehicleEF | SBUS | 0.11 | 0.11 |
| tblVehicleEF | SBUS | 0.06 | 0.07 |
| tblVehicleEF | SBUS | 1.51 | 1.72 |
| tblVehicleEF | SBUS | 2.70 | 3.12 |
| tblVehicleEF | SBUS | 3.56 | 4.10 |
| tblVehicleEF | SBUS | 5.9850e-003 | 5.9790e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 2.1890e-003 | 2.3320e-003 |
| tblVehicleEF | SBUS | 0.25 | 0.29 |
| tblVehicleEF | SBUS | 0.57 | 0.68 |
| tblVehicleEF | SBUS | 0.13 | 0.13 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 0.06 | 0.07 |
| tblVehicleEF | SBUS | 1.63 | 1.85 |
| tblVehicleEF | SBUS | 2.70 | 3.12 |
| tblVehicleEF | SBUS | 3.82 | 4.40 |
| tblVehicleEF | SBUS | 5.8770e-003 | 5.8680e-003 |
| tblVehicleEF | SBUS | 4.8860e-003 | 4.8500e-003 |
| tblVehicleEF | SBUS | 1.47 | 1.46 |
| tblVehicleEF | SBUS | 21.42 | 25.67 |
| tblVehicleEF | SBUS | 50.99 | 56.44 |
| tblVehicleEF | SBUS | 516.39 | 523.99 |
| tblVehicleEF | SBUS | 949.40 | 967.22 |
| tblVehicleEF | SBUS | 137.71 | 144.59 |
| tblVehicleEF | SBUS | 6.7700e-004 | 6.8700e-004 |
| tblVehicleEF | SBUS | 7.69 | 7.73 |
| tblVehicleEF | SBUS | 6.26 | 6.48 |
| tblVehicleEF | SBUS | 2.43 | 2.54 |
| tblVehicleEF | SBUS | 0.03 | 0.03 |
| tblVehicleEF | SBUS | 0.36 | 0.37 |
| tblVehicleEF | SBUS | 9.8520e-003 | 9.8700e-003 |
| tblVehicleEF | SBUS | 0.06 | 0.06 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 0.03 | 0.03 |
| tblVehicleEF | SBUS | 0.16 | 0.16 |
| tblVehicleEF | SBUS | 2.4630e-003 | 2.4680e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.05 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.05 | 0.06 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 0.13 | 0.13 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.50 | 1.72 |
| tblVehicleEF | SBUS | 3.23 | 3.73 |
| tblVehicleEF | SBUS | 4.64 | 5.36 |
| tblVehicleEF | SBUS | 5.1860e-003 | 5.1800e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 2.3950e-003 | 2.5520e-003 |
| tblVehicleEF | SBUS | 0.05 | 0.06 |
| tblVehicleEF | SBUS | 0.48 | 0.58 |
| tblVehicleEF | SBUS | 0.14 | 0.14 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.61 | 1.84 |
| tblVehicleEF | SBUS | 3.23 | 3.73 |
| tblVehicleEF | SBUS | 4.98 | 5.76 |
| tblVehicleEF | UBUS | 7.77 | 8.70 |
| tblVehicleEF | UBUS | 32.97 | 35.88 |
| tblVehicleEF | UBUS | 991.41 | 1,011.14 |
| tblVehicleEF | UBUS | 121.37 | 123.29 |
| tblVehicleEF | UBUS | 1.5100e-004 | 1.5200e-004 |
| tblVehicleEF | UBUS | 5.82 | 6.23 |
| tblVehicleEF | UBUS | 6.17 | 6.59 |
| tblVehicleEF | UBUS | 0.05 | 0.05 |
| tblVehicleEF | UBUS | 1.0030e-003 | 1.0840e-003 |
| tblVehicleEF | UBUS | 0.04 | 0.05 |
| tblVehicleEF | UBUS | 9.3000e-004 | 1.0060e-003 |
| tblVehicleEF | UBUS | 0.03 | 0.04 |
| tblVehicleEF | UBUS | 0.37 | 0.41 |

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|---|---|---|---|
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.57 | 0.64 |
| tblVehicleEF | UBUS | 2.18 | 2.31 |
| tblVehicleEF | UBUS | 3.17 | 3.36 |
| tblVehicleEF | UBUS | 0.01 | 0.01 |
| tblVehicleEF | UBUS | 1.8930e-003 | 1.9450e-003 |
| tblVehicleEF | UBUS | 0.03 | 0.04 |
| tblVehicleEF | UBUS | 0.37 | 0.41 |
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.64 | 0.71 |
| tblVehicleEF | UBUS | 2.18 | 2.31 |
| tblVehicleEF | UBUS | 3.38 | 3.59 |
| tblVehicleEF | UBUS | 7.88 | 8.82 |
| tblVehicleEF | UBUS | 30.01 | 32.66 |
| tblVehicleEF | UBUS | 991.41 | 1,011.14 |
| tblVehicleEF | UBUS | 121.37 | 123.29 |
| tblVehicleEF | UBUS | 1.5100e-004 | 1.5200e-004 |
| tblVehicleEF | UBUS | 5.07 | 5.42 |
| tblVehicleEF | UBUS | 6.01 | 6.42 |
| tblVehicleEF | UBUS | 0.05 | 0.05 |
| tblVehicleEF | UBUS | 1.0030e-003 | 1.0840e-003 |
| tblVehicleEF | UBUS | 0.04 | 0.05 |
| tblVehicleEF | UBUS | 9.3000e-004 | 1.0060e-003 |
| tblVehicleEF | UBUS | 0.07 | 0.08 |
| tblVehicleEF | UBUS | 0.46 | 0.51 |
| tblVehicleEF | UBUS | 0.03 | 0.03 |
| tblVehicleEF | UBUS | 0.58 | 0.65 |
| tblVehicleEF | UBUS | 2.23 | 2.36 |

| | | | |
|---|---|---|---|
| tblVehicleEF | UBUS | 3.00 | 3.18 |
| tblVehicleEF | UBUS | 0.01 | 0.01 |
| tblVehicleEF | UBUS | 1.8410e-003 | 1.8890e-003 |
| tblVehicleEF | UBUS | 0.07 | 0.08 |
| tblVehicleEF | UBUS | 0.46 | 0.51 |
| tblVehicleEF | UBUS | 0.03 | 0.03 |
| tblVehicleEF | UBUS | 0.64 | 0.72 |
| tblVehicleEF | UBUS | 2.23 | 2.36 |
| tblVehicleEF | UBUS | 3.20 | 3.40 |
| tblVehicleEF | UBUS | 7.58 | 8.48 |
| tblVehicleEF | UBUS | 39.84 | 43.36 |
| tblVehicleEF | UBUS | 991.41 | 1,011.14 |
| tblVehicleEF | UBUS | 121.37 | 123.29 |
| tblVehicleEF | UBUS | 1.5100e-004 | 1.5200e-004 |
| tblVehicleEF | UBUS | 5.98 | 6.41 |
| tblVehicleEF | UBUS | 6.53 | 6.98 |
| tblVehicleEF | UBUS | 0.05 | 0.05 |
| tblVehicleEF | UBUS | 1.0030e-003 | 1.0840e-003 |
| tblVehicleEF | UBUS | 0.04 | 0.05 |
| tblVehicleEF | UBUS | 9.3000e-004 | 1.0060e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.37 | 0.40 |
| tblVehicleEF | UBUS | 6.5610e-003 | 7.0430e-003 |
| tblVehicleEF | UBUS | 0.56 | 0.62 |
| tblVehicleEF | UBUS | 2.44 | 2.58 |
| tblVehicleEF | UBUS | 3.55 | 3.76 |
| tblVehicleEF | UBUS | 0.01 | 0.01 |
| tblVehicleEF | UBUS | 2.0130e-003 | 2.0750e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | UBUS | 0.02 | 0.02 |
| tblVehicleEF | UBUS | 0.37 | 0.40 |
| tblVehicleEF | UBUS | 6.5610e-003 | 7.0430e-003 |
| tblVehicleEF | UBUS | 0.62 | 0.69 |
| tblVehicleEF | UBUS | 2.44 | 2.58 |
| tblVehicleEF | UBUS | 3.79 | 4.01 |
| tblVehicleTrips | ST_TR | 1.32 | 0.00 |
| tblVehicleTrips | SU_TR | 0.68 | 0.00 |
| tblVehicleTrips | WD_TR | 6.97 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2016 | 2.9337 | 31.3707 | 17.0270 | 0.0493 | 29.4930 | 1.3819 | 30.8749 | 2.9680 | 1.3160 | 4.2840 | 0.0000 | 4,876.6421 | 4,876.6421 | 0.8758 | 0.0000 | 4,895.0344 |
| **Total** | **2.9337** | **31.3707** | **17.0270** | **0.0493** | **29.4930** | **1.3819** | **30.8749** | **2.9680** | **1.3160** | **4.2840** | **0.0000** | **4,876.6421** | **4,876.6421** | **0.8758** | **0.0000** | **4,895.0344** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2016 | 2.9337 | 31.3707 | 17.0270 | 0.0493 | 23.3334 | 1.3819 | 24.7153 | 2.3503 | 1.3160 | 3.6663 | 0.0000 | 4,876.6421 | 4,876.6421 | 0.8758 | 0.0000 | 4,895.0344 |
| **Total** | **2.9337** | **31.3707** | **17.0270** | **0.0493** | **23.3334** | **1.3819** | **24.7153** | **2.3503** | **1.3160** | **3.6663** | **0.0000** | **4,876.6421** | **4,876.6421** | **0.8758** | **0.0000** | **4,895.0344** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **20.88** | **0.00** | **19.95** | **20.81** | **0.00** | **14.42** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Plowed conduit installation | Trenching | 1/12/2016 | 1/20/2016 | 5 | 7 | |
| 2 | Bored installation | Trenching | 1/21/2016 | 3/4/2016 | 5 | 32 | |
| 3 | Node installation | Trenching | 3/7/2016 | 3/11/2016 | 5 | 5 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Plowed conduit installation | Air Compressors | 2 | 4.00 | 174 | 0.41 |
| Plowed conduit installation | Crawler Tractors | 2 | 8.00 | 97 | 0.37 |
| Bored installation | Air Compressors | 2 | 4.00 | 78 | 0.48 |
| Bored installation | Bore/Drill Rigs | 2 | 8.00 | 205 | 0.50 |
| Bored installation | Pumps | 2 | 8.00 | 208 | 0.43 |
| Bored installation | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Node installation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Plowed conduit installation | 4 | 10.00 | 8.00 | 0.00 | 7.30 | 8.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Bored installation | 8 | 20.00 | 6.00 | 0.00 | 7.30 | 8.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Node installation | 1 | 6.00 | 6.00 | 0.00 | 7.30 | 8.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

## 3.2 Plowed conduit installation - 2016

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7572 | 14.3981 | 9.3389 | 0.0138 | | 1.0592 | 1.0592 | | 0.9966 | 0.9966 | | 1,362.3028 | 1,362.3028 | 0.2544 | | 1,367.6446 |
| **Total** | **1.7572** | **14.3981** | **9.3389** | **0.0138** | | **1.0592** | **1.0592** | | **0.9966** | **0.9966** | | **1,362.3028** | **1,362.3028** | **0.2544** | | **1,367.6446** |

## 3.2 Plowed conduit installation - 2016

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1050 | 0.8240 | 1.3447 | 2.0100e-003 | 10.5380 | 0.0174 | 10.5554 | 1.0624 | 0.0160 | 1.0784 | | 200.7353 | 200.7353 | 1.2400e-003 | | 200.7613 |
| Worker | 0.0515 | 0.0673 | 0.5589 | 6.0000e-004 | 10.7948 | 4.3000e-004 | 10.7952 | 1.0856 | 3.9000e-004 | 1.0860 | | 47.5297 | 47.5297 | 4.4500e-003 | | 47.6232 |
| **Total** | **0.1565** | **0.8913** | **1.9035** | **2.6100e-003** | **21.3327** | **0.0179** | **21.3506** | **2.1480** | **0.0164** | **2.1644** | | **248.2649** | **248.2649** | **5.6900e-003** | | **248.3844** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7572 | 14.3981 | 9.3389 | 0.0138 | | 1.0592 | 1.0592 | | 0.9966 | 0.9966 | 0.0000 | 1,362.3028 | 1,362.3028 | 0.2544 | | 1,367.6446 |
| **Total** | **1.7572** | **14.3981** | **9.3389** | **0.0138** | | **1.0592** | **1.0592** | | **0.9966** | **0.9966** | **0.0000** | **1,362.3028** | **1,362.3028** | **0.2544** | | **1,367.6446** |

## 3.2 Plowed conduit installation - 2016

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1050 | 0.8240 | 1.3447 | 2.0100e-003 | 8.3385 | 0.0174 | 8.3560 | 0.8419 | 0.0160 | 0.8579 | | 200.7353 | 200.7353 | 1.2400e-003 | | 200.7613 |
| Worker | 0.0515 | 0.0673 | 0.5589 | 6.0000e-004 | 8.5398 | 4.3000e-004 | 8.5402 | 0.8595 | 3.9000e-004 | 0.8599 | | 47.5297 | 47.5297 | 4.4500e-003 | | 47.6232 |
| **Total** | **0.1565** | **0.8913** | **1.9035** | **2.6100e-003** | **16.8783** | **0.0179** | **16.8961** | **1.7013** | **0.0164** | **1.7177** | | **248.2649** | **248.2649** | **5.6900e-003** | | **248.3844** |

## 3.3 Bored installation - 2016

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.7520 | 30.6181 | 14.9008 | 0.0466 | | 1.3680 | 1.3680 | | 1.3032 | 1.3032 | | 4,631.0313 | 4,631.0313 | 0.8660 | | 4,649.2172 |
| **Total** | **2.7520** | **30.6181** | **14.9008** | **0.0466** | | **1.3680** | **1.3680** | | **1.3032** | **1.3032** | | **4,631.0313** | **4,631.0313** | **0.8660** | | **4,649.2172** |

## 3.3 Bored installation - 2016

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0787 | 0.6180 | 1.0085 | 1.5100e-003 | 7.9035 | 0.0131 | 7.9165 | 0.7968 | 0.0120 | 0.8088 | | 150.5515 | 150.5515 | 9.3000e-004 | | 150.5709 |
| Worker | 0.1030 | 0.1347 | 1.1177 | 1.1900e-003 | 21.5896 | 8.6000e-004 | 21.5904 | 2.1712 | 7.8000e-004 | 2.1720 | | 95.0594 | 95.0594 | 8.9000e-003 | | 95.2463 |
| **Total** | **0.1818** | **0.7526** | **2.1262** | **2.7000e-003** | **29.4930** | **0.0139** | **29.5070** | **2.9680** | **0.0128** | **2.9808** | | **245.6108** | **245.6108** | **9.8300e-003** | | **245.8173** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.7520 | 30.6181 | 14.9008 | 0.0466 | | 1.3680 | 1.3680 | | 1.3032 | 1.3032 | 0.0000 | 4,631.0313 | 4,631.0313 | 0.8660 | | 4,649.2172 |
| **Total** | **2.7520** | **30.6181** | **14.9008** | **0.0466** | | **1.3680** | **1.3680** | | **1.3032** | **1.3032** | **0.0000** | **4,631.0313** | **4,631.0313** | **0.8660** | | **4,649.2172** |

## 3.3 Bored installation - 2016

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0787 | 0.6180 | 1.0085 | 1.5100e-003 | 6.2539 | 0.0131 | 6.2670 | 0.6314 | 0.0120 | 0.6434 | | 150.5515 | 150.5515 | 9.3000e-004 | | 150.5709 |
| Worker | 0.1030 | 0.1347 | 1.1177 | 1.1900e-003 | 17.0795 | 8.6000e-004 | 17.0804 | 1.7189 | 7.8000e-004 | 1.7197 | | 95.0594 | 95.0594 | 8.9000e-003 | | 95.2463 |
| **Total** | **0.1818** | **0.7526** | **2.1262** | **2.7000e-003** | **23.3334** | **0.0139** | **23.3473** | **2.3503** | **0.0128** | **2.3631** | | **245.6108** | **245.6108** | **9.8300e-003** | | **245.8173** |

## 3.4 Node installation - 2016

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.3406 | 3.2551 | 2.4126 | 3.1100e-003 | | 0.2506 | 0.2506 | | 0.2306 | 0.2306 | | 323.6773 | 323.6773 | 0.0976 | | 325.7276 |
| **Total** | **0.3406** | **3.2551** | **2.4126** | **3.1100e-003** | | **0.2506** | **0.2506** | | **0.2306** | **0.2306** | | **323.6773** | **323.6773** | **0.0976** | | **325.7276** |

## 3.4 Node installation - 2016

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0787 | 0.6180 | 1.0085 | 1.5100e-003 | 7.9035 | 0.0131 | 7.9165 | 0.7968 | 0.0120 | 0.8088 | | 150.5515 | 150.5515 | 9.3000e-004 | | 150.5709 |
| Worker | 0.0309 | 0.0404 | 0.3353 | 3.6000e-004 | 6.4769 | 2.6000e-004 | 6.4771 | 0.6514 | 2.4000e-004 | 0.6516 | | 28.5178 | 28.5178 | 2.6700e-003 | | 28.5739 |
| **Total** | **0.1096** | **0.6584** | **1.3438** | **1.8700e-003** | **14.3803** | **0.0133** | **14.3937** | **1.4482** | **0.0123** | **1.4604** | | **179.0693** | **179.0693** | **3.6000e-003** | | **179.1448** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.3406 | 3.2551 | 2.4126 | 3.1100e-003 | | 0.2506 | 0.2506 | | 0.2306 | 0.2306 | 0.0000 | 323.6773 | 323.6773 | 0.0976 | | 325.7276 |
| **Total** | **0.3406** | **3.2551** | **2.4126** | **3.1100e-003** | | **0.2506** | **0.2506** | | **0.2306** | **0.2306** | **0.0000** | **323.6773** | **323.6773** | **0.0976** | | **325.7276** |

### 3.4 Node installation - 2016

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0787 | 0.6180 | 1.0085 | 1.5100e-003 | 6.2539 | 0.0131 | 6.2670 | 0.6314 | 0.0120 | 0.6434 | | 150.5515 | 150.5515 | 9.3000e-004 | | 150.5709 |
| Worker | 0.0309 | 0.0404 | 0.3353 | 3.6000e-004 | 5.1239 | 2.6000e-004 | 5.1241 | 0.5157 | 2.4000e-004 | 0.5159 | | 28.5178 | 28.5178 | 2.6700e-003 | | 28.5739 |
| **Total** | **0.1096** | **0.6584** | **1.3438** | **1.8700e-003** | **11.3778** | **0.0133** | **11.3911** | **1.1471** | **0.0123** | **1.1593** | | **179.0693** | **179.0693** | **3.6000e-003** | | **179.1448** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Light Industry | 16.40 | 9.50 | 11.90 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.452463 | 0.070907 | 0.165532 | 0.163183 | 0.043777 | 0.005595 | 0.012812 | 0.078576 | 0.001869 | 0.000152 | 0.002393 | 0.000687 | 0.002054 |

### 4.4 Fleet Mix

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| General Light Industry | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

### 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | | **0.0000** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Vegetation

# Appendix D

## Biological Resources Evaluation

# TDS Telecom
# Winterhaven Last Mile Underserved Broadband Project
# Imperial County, California

## Biological Resources Evaluation

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## ABSTRACT

Winterhaven Telephone Company d.b.a. TDS Telecom proposes to construct the Winterhaven Last Mile Underserved Broadband Project (the project), which will provide high-speed internet services to portions of the Fort Yuma-Quechan Indian Reservation, as well as portions of unincorporated Imperial County, California.

This Biological Resources Evaluation (BRE) has been prepared to provide a summary of existing biological conditions, the potential presence of special status species and resources, an initial evaluation of impacts of the project on biological resources, and feasible avoidance and minimization measures to reduce potential impacts to a level typically considered less than significant under the California Environmental Quality Act (CEQA). This report is useful for the preparation of the proposed project's CEQA Proponent's Environmental Assessment/Mitigated Negative Declaration and is in compliance with the National Environmental Policy Act (NEPA).

As discussed herein, the BRE determines to what extent the proposed project may potentially impact biological resources that are subject to provisions of CEQA and NEPA. Based on existing conditions and characteristics of the study area, Sonoran Desert Toad *(Incilius alvarius)*, Lowland Leopard Frog *(Lithobates yavapaiensis)*, Loggerhead Shrike *(Lanius ludovicianus)*, Vermilion Flycatcher *(Pyrocephalus rubinus)*, Yellow-headed Blackbird *(Xanthocephalus xanthocephalus)*, Townsend's Big-eared Bat *(Corynorhinus townsendii)*, and Yuma Hispid Cotton Rat *(Sigmodon hispidus eremicus)* are known to occur or have the potential to occur in the study area; therefore these species are evaluated for potential impacts.

It was determined that the proposed project would have no effect on species or critical habitats listed under the Endangered Species Act and that the project would have no impact on habitats meeting the criteria of sensitive natural communities as defined by the California Department of Fish and Wildlife (CDFW). In addition, it was determined that irrigation canals in the study area that may be Waters of the U.S. subject to U.S. Army Corps of Engineers, Regional Water Quality Control Board, and/or CDFW jurisdiction would not be impacted by the proposed project.

The BRE concludes that the proposed project would potentially impact special status species listed by CDFW and it may result in the spread of invasive plant species; however, implementation of the recommended avoidance and minimization measures will reduce these potential impacts to a less than significant level.

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# 1.0 INTRODUCTION

Winterhaven Telephone Company d.b.a. TDS Telecom (TDS) proposes to construct the Winterhaven Last Mile Underserved Broadband Project (the Project) which will provide high-speed internet services to portions of the Fort Yuma-Quechan Indian Reservation, as well as portions of unincorporated Imperial County, California.

This Biological Resource Evaluation (BRE) presents the results of a database search and a reconnaissance level biological survey of regionally-occurring special-status species and sensitive biological resources within the project area. The purpose of this report is to document the dominant plant and animal species observed at the time of the survey, to discuss the general habitat types present, and to evaluate the potential for the project site and vicinity to contain, or provide habitat for, Federal or State listed special status plant and animal species and sensitive natural communities. Additionally, this report provides standard recommended avoidance and minimization measures to reduce potential impacts to sensitive biological resources.

## *1.1 Project Location*

The project area is located in southeastern Imperial County, California, just north of Yuma, Arizona, and the Colorado River. Baseline Road, which runs north-south, marks the boundary between the Fort Yuma-Quechan Reservation and private land; the Reservation is west of Baseline, and private land is to the east. The southern edge of the project area is roughly bounded by the Union Pacific Railroad (UPRR) tracks, the community of Winterhaven, and the Paradise Casino on Picacho Road. The Cocopah Canal runs along the eastern boundary of the project area, and the community of Bard is located at the northeastern limits of the project area. Stalnacker and Ross Roads along with the community of Ross Corner make up the approximate northern limits of the project area, and the western edge of the project area is near Arnold Road where the road approaches the UPRR. Specifically, the project area is located in portions of Section 2, Township 15 South, Range 24 East; Sections 11, 14, and 21–27, Township 16 South, Range 22 East; and Sections 4, 5, 7–9, 18, and 19 Township 16 South Range 23 East; San Bernardino Baseline and Meridian (SBB&M), as depicted on the Araz, Bard, Yuma East, and Yuma West, AZ/CA, 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle maps (Figures 1 and 2).

## *1.2 Project Description*

The proposed project involves the construction of a second-generation, very-high-bit-rate digital subscriber line (VDSL2) fiber-optic network capable of 25 Mbps/5 Mbps (download/upload) speeds. In total, approximately 24.65 km (15.31 miles) of new fiber-optic cable will be buried within protective conduit along existing roads in the project area and approximately 2.25 km (1.40 miles) of existing buried copper line will be used to connect a proposed DLC site on Arnold Road to the new system. A summary of the associated lengths to be installed on and off the Fort Yuma–Quechan Reservation can be found in Table 1. The buried line installation, which consists of the telecommunications cable and its protective conduit, will be performed using plowing construction techniques, and a directional boring machine will be used to install the line at canal and road crossings. Ancillary equipment to be installed includes 10 new equipment cabinets that will serve as connecting "nodes" for customers, splice boxes, and line markers. The equipment cabinets will be approximately 0.6 by 1.0 by 1.2 m (2.0 by 3.0 by 4.0 feet) in size and will be installed on top of buried concrete vaults within an approximately 6-m-square (20-foot-square) area. Splice boxes are small rectangular metal enclosures that will be installed between lengths of cable.

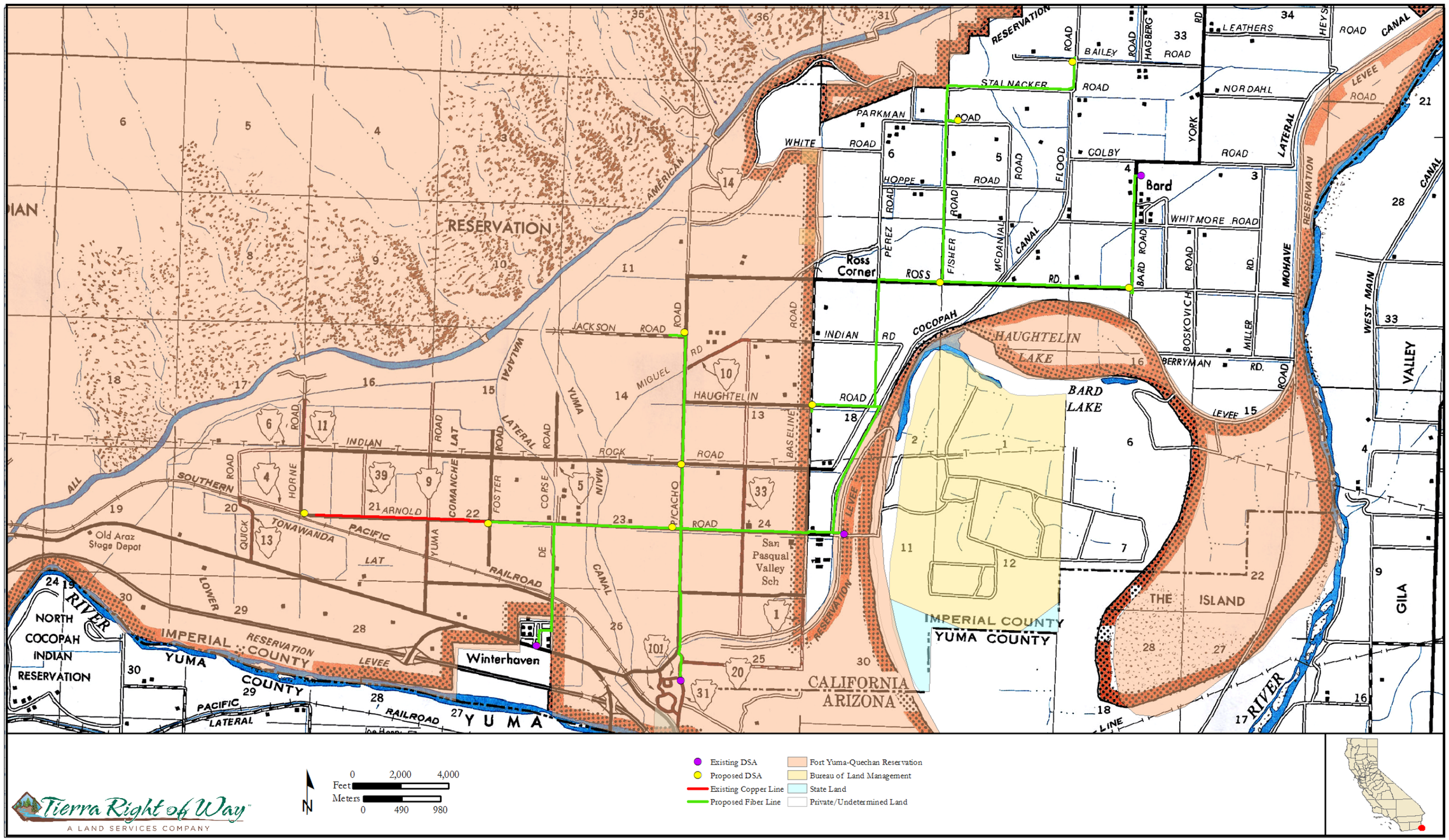



**Figure 1. Project location.**

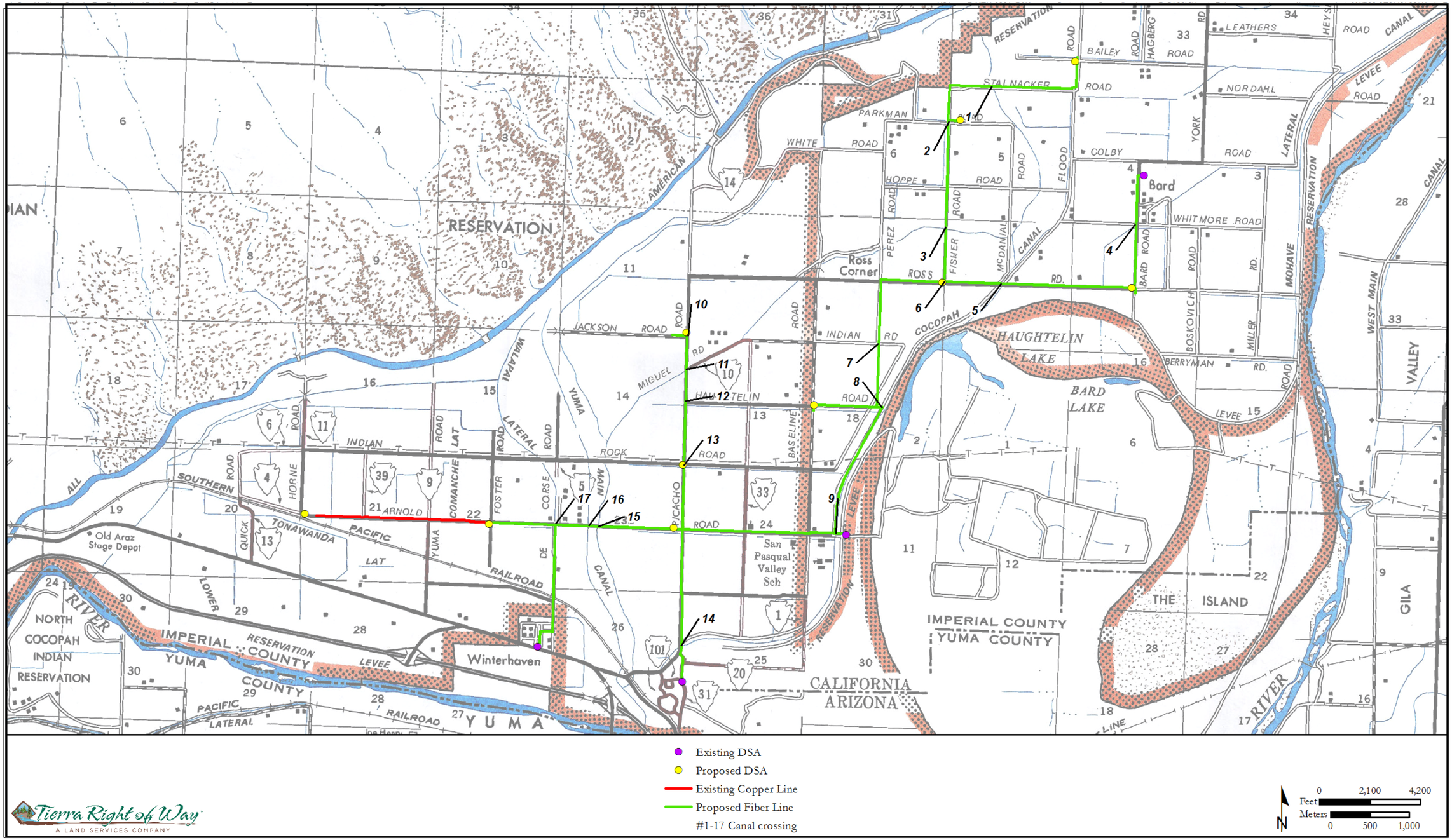



**Figure 2. Project area.**

**Table 1. Cable Installation Lengths**

| Installation | Length (m) | Length (km) | Length (feet) | Length (miles) |
|---|---|---|---|---|
| On-Reservation | 10,139 | 10.14 | 33,264 | 6.30 |
| Off-Reservation | 14,507 | 14.51 | 47,595 | 9.01 |
| Total | **24,646** | **24.65** | **80,859** | **15.31** |

Line markers, which will be installed at intervals of approximately 305 m (1,000 feet), are approximately 1.2 m (4.0 feet) tall and made of flexible fiberglass.

The line installation will be performed in two steps. First, a protective conduit for the fiber-optic cable will be installed by either plowing or directional boring construction methods. Second, the fiber-optic cable will be "blown" through the conduit using compressed air. The total combined ground disturbance associated with the project, including both the plowed and bored installations, would not exceed an area approximately 5.1 ha (12.5 acres) in size.

### 1.2.1 Plowed Conduit Installation

Plowed conduit is installed using a machine equipped with a specialized single ripper that loosens the soil along the installation path. Conduit is fed either from the plow machine or from a separate truck-mounted reel through a plow chute attached to the ripper and laid directly at a nominal depth of 1 m (3 feet). A compaction machine follows directly behind the plow machine, restoring the ground surface to its original contour. The installation path may be "pre-ripped" if necessary to loosen the soil in areas where subsurface rock or other buried obstructions may be present. Ground disturbance associated with the plowed installation will be limited to an approximately 2.4-m-wide (8.0-foot-wide) corridor.

### 1.2.2 Bored Conduit Installation

Directional boring is a method used to install underground utilities without the need for trenching. Typically it is used to install utility lines under waterways, roads, and other areas where the avoidance of surface disturbance is desirable (Figure 3). Directional boring machines are essentially horizontal drilling rigs and have a drill bit that is steerable. The drill bit is guided by the operator as it progresses along the desired boring path. After boring, the drill pipe is pulled out and conduit is threaded through the bore. In "drill and leave" installations, the drill pipe is left in place and serves as the conduit.

Two boring pits for bore ingress and egress would be required for each canal crossing installation—one on each side of the canal. These bore pits would be located at varying distances from the canals and roads. The depth of the bore would be a minimum of 1.5 m (5.0 feet) below the bottom of the canals and roads, and the bore lengths would be variable. The bores would be of sufficient diameter to accommodate the 5-cm (2-inch) conduit and would be drilled using drilling fluid "mud." This mud is nontoxic, consisting of clay, bentonite, and water; and it would be disposed of accordingly.

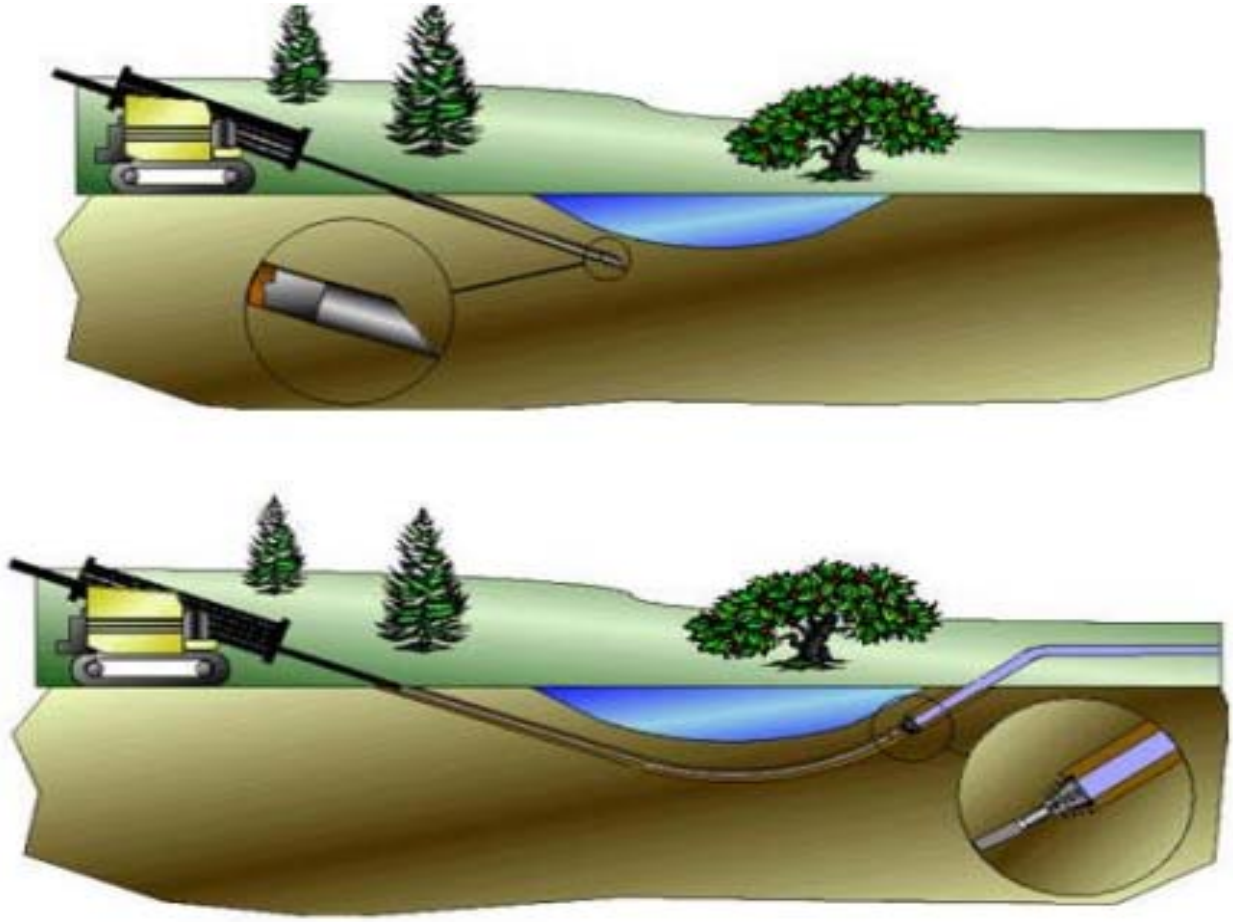


**Figure 3. Example of a directional bore beneath a waterway.**

Following the installation of the pipe beneath the canal or road, the bore pits would be filled in and compacted and the ground surface restored to its original contour. The locations of all canal bores associated with the project are summarized in Table 2. Ground disturbance associated with the bored conduit installations will occur within the same 2.4-m-wide (8.0-foot-wide) corridor as the plowed installations.

### 1.2.3 Project Schedule

The anticipated start date for the proposed project is mid-January, 2016 and construction would take approximately two months.

**Table 2. Canal Bore Locations**

| Map No. | Canal Name | Location | Canal Width |
|---|---|---|---|
| 1 | Reservation Main Drain | Stahlnacker Road | 20.5 m (67 feet) |
| 2 | Unnamed canal | Fisher and Parkman Roads | 3.6 m (12 feet) |
| 3 | Reservation Main Drain | Fisher Road | 19.6 m (64 feet) |
| 4 | Hopi Canal | Bard and Whitmore Roads | 6.3 m (21 feet) |
| 5 | Cocopah Canal | Ross Road | 9.0 m (30 feet) |
| 6 | Unnamed canal | Fisher and Ross Roads | 5.3 m (17 feet) |
| 7 | Papago Canal | Perez Road | 4.5 m (15 feet) |
| 8 | Pima Canal | Haughtelin and Perez Roads | 4.5 m (15 feet) |
| 9 | Cocopah Canal | Flood and Arnold Roads | 7.0 m (23 feet) |
| 10 | Navajo Canal | Picacho and Jackson Roads | 7.3 m (24 feet) |
| 11 | Reservation Main Drain | Picacho Road | 27.3 m (90 feet) |
| 12 | Pima Canal | Picacho and Haughtelin Roads | 3.7 m (12 feet) |
| 13 | Pueblo Canal | Picacho and Indian Rock Roads | 3.6 m (12 feet) |
| 14 | Cocopah Canal | Picacho Road | 8.3 m (27 feet) |
| 15 | Reservation Main Drain | Arnold Road | 27.3 m (90 feet) |
| 16 | Yuma Main Canal | Arnold Road | 46.0 m (151 feet) |
| 17 | Walapai Canal | Arnold Road | 2.4 m (8 feet) |

## *1.3 Applicable Environmental Regulations*

### 1.3.1 Federal Requirements for Species Protection

***Endangered Species Act—***The U.S. Fish and Wildlife Service (FWS) and the National Oceanographic and Atmospheric Administration's National Marine Fisheries Service (NMFS) enforce the provisions stipulated within the Endangered Species Act (ESA) of 1973 (16 USC Section 1531 et seq.). Threatened and Endangered species on the Federal list (50 CFR Section 17.11 and 17.12) are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a Federal agency or a Biological Opinion with incidental take provisions is rendered to a Federal lead agency via a Section 7 consultation. Pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any Federally listed species may be present in the project site and determine whether the proposed project will have a potentially significant impact upon such species. Under the ESA, habitat loss is considered to be an impact to a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species that is proposed for listing under the ESA or to result in the destruction or adverse modification of critical habitat proposed or designated for such species (16 USC 1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation.

***Executive Order 13186: Migratory Bird Treaty Act—*** The Migratory Bird Treaty Act (MBTA) of 1918 (United States Code, Title 16, Chapter 7, Subchapter II) prohibits the "pursuit, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer

to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof." The ensuing Executive Order 13186, signed January 10, 2001, by President Clinton "directs executive departments and agencies to take certain actions to further implement the (MBTA)." Such actions include the responsibility that Federal agencies "taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations … develop and implement, within 2 years, a Memorandum of Understanding with the Fish and Wildlife Service, that shall promote the conservation of migratory bird populations."

***Executive Order 11990: Protection of Wetlands***—Executive Order 11990, signed May 24, 1997, directs Federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that Federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. A project that encroaches on wetlands may not be undertaken unless the agency has determined that (1) there are no practicable alternatives to construction, (2) the project includes all practicable measures to minimize harm to wetlands affected, and (3) the impact will be minor.

***Executive Order 13112: Invasive Species Prevention***—On Feb 3, 1999, Executive Order 13112 was signed establishing the National Invasive Species Council. Executive Order 13112 required that each Federal agency whose actions may affect the status of invasive species will, to the extent practicable and permitted by law, (1) identify such actions; (2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species, (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner, (iii) monitor invasive species populations accurately and reliably, (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded, (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species, and (vi) promote public education on invasive species and the means to address them; and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions. In addition, it requires that Federal agencies will pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the Invasive Species Management Plan and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.

### 1.3.2 State Requirements for Species Protection

***California Endangered Species Act/California Environmental Quality Act***—The California Endangered Species Act (CESA) of 1970 (Fish and Game Code Section 2050 et seq., and CCR Title 14, Subsection 670.2, 670.51) prohibits the take (interpreted to mean the direct killing of a species) of species listed under CESA (14 CCR Subsection 670.2, 670.5). Under CESA, State agencies are required to consult with the California Department of Fish and Wildlife (CDFW) (formerly

California Department of Fish and Game [CDFG]) when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on State listed species. During consultation, CDFW determines whether take would occur and identifies "reasonable and prudent alternatives" for the project and conservation of special-status species. CDFW can authorize take of a State-listed species under Sections 2080.1 and 2081(b) of CDFW code in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under Section 2081(b) must be minimized and fully mitigated. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of Threatened and Endangered species designated under State law (CDFG Code 2070). CDFW also maintains lists of Species of Special Concern, which serve as "watch lists." Pursuant to the requirements of CESA, a State or local agency reviewing a proposed project within its jurisdiction must determine whether any State-listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation. Impacts to Species of Concern and fully protected species would be considered significant under certain circumstances.

The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000-21178) requires that CDFW be consulted during the CEQA review process regarding impacts of proposed projects on rare or Endangered species. These "special status" species are defined under CEQA Guidelines Subsection 15380(b) and (d) as those listed under the ESA and CESA, and species that are not currently protected by statute or regulation, but would be considered rare, Threatened, or Endangered under these criteria, or by the scientific community. Therefore, species that are considered rare or Endangered are addressed in this study regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity; plants on Lists 1A, 1B, and 2 are considered special status species under CEQA.

Although Threatened and Endangered species are protected by specific Federal and State statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the Federal or State list of protected species may be considered rare or Endangered if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the ESA and the section of the California Fish and Game Code dealing with rare or Endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the U.S. Fish and Wildlife Service (USFWS) or CDFW (i.e., Candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

***California Native Plant Protection Act***—The California Native Plant Protection Act of 1977 (CDFG Code Section 1900-1913) requires all State agencies to use their authority to carry out programs to conserve Endangered and otherwise rare species of native plants. Provisions of the Act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFW at least 10 days in advance of any change in land use, which allows CDFW to salvage listed plants that would otherwise be destroyed.

***Nesting Birds***—California Fish and Game Code Subsections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are "Fully Protected" as those that may not be taken or possessed except under specific permit.

### 1.3.3 Protection of Wetlands, Waters of the United States, and Waters of the State

Any person, firm, or agency planning to alter or work in Waters of the U.S. (WUS), including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA; 33 U.S.C. 1344). Permits, licenses, variances, or similar authorization may also be required by other Federal, State, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable WUS without a permit from USACE (33 U.S.C. 403). The CDFW requires notification prior to commencement and possibly a Streambed Alteration Agreement pursuant to California Fish and Game Code Subsection 1601-1603, 5650F, if a proposed project would result in the alteration or degradation of a stream, river, or lake in California. The Regional Water Quality Control Board (RWQCB) may require State Water Quality Certification (CWA Section 401 permit) prior to the alteration of or discharge to WUS and the State.

WUS are defined as: all waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters (33 CFR Part 328). With non-tidal waters, in the absence of adjacent wetlands, the extent of USACE jurisdiction extends to the ordinary high water mark (OHWM)—the line on the shore established by fluctuations of water and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code Section 13050(e)."

Water quality in California is governed by the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code § 13000 et. seq.) This Act delegates responsibility to the State Water Resource Control Board (SWRCB) for water rights and water quality protection and directs the nine statewide RWQCBs to develop and enforce water quality standards within their jurisdiction. The Porter-Cologne Act requires any entity discharging waste or proposing to discharge waste within any region that could affect the quality of the Waters of the State to file a report of waste discharge with the appropriate RWQCB. The appropriate RWQCB then must issue a permit, referred to as a waste discharge requirement (WDR). WDRs implement water quality control plans and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisances (California Water Code § 13263).

### 1.3.4 Lower Colorado River Multi-Species Conservation Program

The Lower Colorado River Multi-Species Conservation Program **(**LCR MSCP) was created to balance the use of the Colorado River water resources with the conservation of native species and

their habitats. The program works toward the recovery of species currently listed under the ESA. It also reduces the likelihood of additional species listings. Implemented over a 50-year period, the program accommodates current water diversions and power production and will optimize opportunities for future water and power development by providing ESA compliance through the implementation of a Habitat Conservation Plan (HCP) which was finalized in December 2004. The program area extends over 643.7 km (400 miles) of the lower Colorado River from Lake Mead to the southernmost border with Mexico and includes Lakes Mead, Mohave, and Havasu, as well as the historic 100-year floodplain where the proposed project is located, along the main stem of the lower Colorado River. The HCP calls for the creation of more than 3,278 ha (8,100 acres) of habitat for fish and wildlife species and the production of over 1.2 million native fish to augment existing populations. The plan will benefit at least 26 species, most of which are State or Federally listed Endangered, Threatened, or Sensitive species.

The Bureau of Reclamation (BOR) is the implementing agency for the LCR MSCP. Partnership involvement occurs primarily through the LCR MSCP Steering Committee (currently representing 57 entities, including State and Federal agencies, water and power users, municipalities, Native American Tribes, conservation organizations, and other interested parties), which provides input and oversight functions in support of LCR MSCP implementation. Program costs are evenly divided between the Federal government and non-Federal partners (Lower Colorado River Multi-Species Conservation Program 2013).

### 1.3.5 Imperial County General Plan

The Imperial County General Plan (GP), which applies to all public and private projects in unincorporated Imperial County, consists of 10 Elements entitled Land Use, Housing, Circulation and Scenic Highways, Noise, Seismic and Public Safety, Agricultural, Conservation and Open Space, Geothermal/Alternative Energy and Transmission, Water, and Parks & Recreation.

The Conservation and Open Space Element of the GP provides detailed plans and measures for the preservation and management of biological and cultural resources, soils, minerals, energy, regional aesthetics, air quality, and open space. The purpose of the Conservation and Open Space Element is to promote the protection, maintenance, and use of the County's natural resources with particular emphasis on scarce resources and to prevent wasteful exploitation, destruction, and neglect of the State's natural resources. Additionally, the purpose of this Element is to recognize that natural resources must be maintained for their ecological value for the direct benefit to the public, protect open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and for public health and safety (Imperial County Planning and Development Services 2014). Recommended mitigation for invasive species control has been included in this report that will be consistent with the conservation objectives of the GP.

## 2.0 METHODOLOGY

Tierra Right of Way Services, Ltd. (Tierra), senior biologist, Tim Jordan, conducted a reconnaissance survey of the project area on July 15 and 16, 2014 (Table 3). Special status species (listed in Appendix A) were assessed for their potential to occur in the project area based on the existing characteristics that were observed. In addition to special status species and their habitats, the project corridors were assessed for general wildlife species, migratory birds, plant species and noxious weeds, sensitive natural communities, and the presence or absence of waterways.

**Table 3. Field Survey Schedule**

| Date/Weather Conditions | Surveyor | Survey Time/Survey Purpose |
|---|---|---|
| 7/15/2014; 100–101° F, calm, slight haze | Tim Jordan | 1200–1430, general biological |
| 7/16/2014; 82–104° F, calm to slight breeze, clear | Tim Jordan | 0700–1230, general biological, canal location recording |

For the purposes of this report, the entire area assessed during the reconnaissance survey includes the project corridor centerlines with an approximately 15.2-m (50.0-foot) buffer to either side, which is comprehensively referred to as the study area. All areas within the study area were visually assessed during the surveys.

Prior to the reconnaissance surveys, a comprehensive list of regionally occurring special-status species and sensitive natural communities was compiled from the list of reported occurrences in the CDFW's California Natural Diversity Database (CNDDB) for the Araz, Bard, Imperial Reservoir, Laguna Dam, Little Picacho Peak, Picacho Peak, Yuma East, and Yuma West 7.5-minute USGS topographic quadrangles (CNDDB 2014) (Figure 4) and a list of Natural Resources of Concern that includes Federally listed special-status species for Imperial County that was obtained from the FWS Information, Planning, and Conservation (IPAC) system. CNDDB occurrence records include those that are mapped—meaning that occurrence data has been verified by CDFW—and unprocessed records that have not been verified. The CNDDB and FWS lists are included in Appendix A. Habitats present in the study area were compared to the habitat requirements of these regionally occurring special-status species; this comparison was used to determine which of these species had the potential to occur in the study area. Those species with a potential to occur within the study area and/or be adversely affected by the proposed project are addressed in Section 4.3. Species whose range (geographic or elevation) does not include the study area or for which the study area does not provide suitable habitat, were excluded from further consideration. This analysis is included in Appendix B.

# 3.0 BIOLOGICAL RESOURCES IN THE PROJECT AREA

## *3.1 Environmental Setting*

The project area is located in southeastern California on the lower Colorado River in an area primarily used for agricultural cultivation. Several irrigation canals operated by the BOR Imperial Irrigation District and Bard Water District either cross or run parallel to the project corridors. Elevations in the project area range from approximately 38–43 m (126–140 feet) above mean sea level (AMSL).

The Western Regional Climate Center (WRCC) recorded seasonal climatic data from 1993–2013 at the Yuma Quartermaster Depot, located just south of the project area (WRCC 2014). These data include average maximum temperature, average minimum temperature, average total precipitation, and average snowfall. The average annual maximum temperature within the project area is 90.1° F (32.2° C); the hottest month of the year is July with an average maximum temperature of 109.4° F (43.0° C). The average annual minimum temperature within the project area is 59.0° F (15.0° C), with December having the coldest average temperature of 43.4° F (6.3° C). The project area receives an average of 6.80 cm (2.67 inches) of precipitation annually; February has the highest average precipitation at 1.20 cm (0.48 inches). The project area receives no snowfall in the average year.

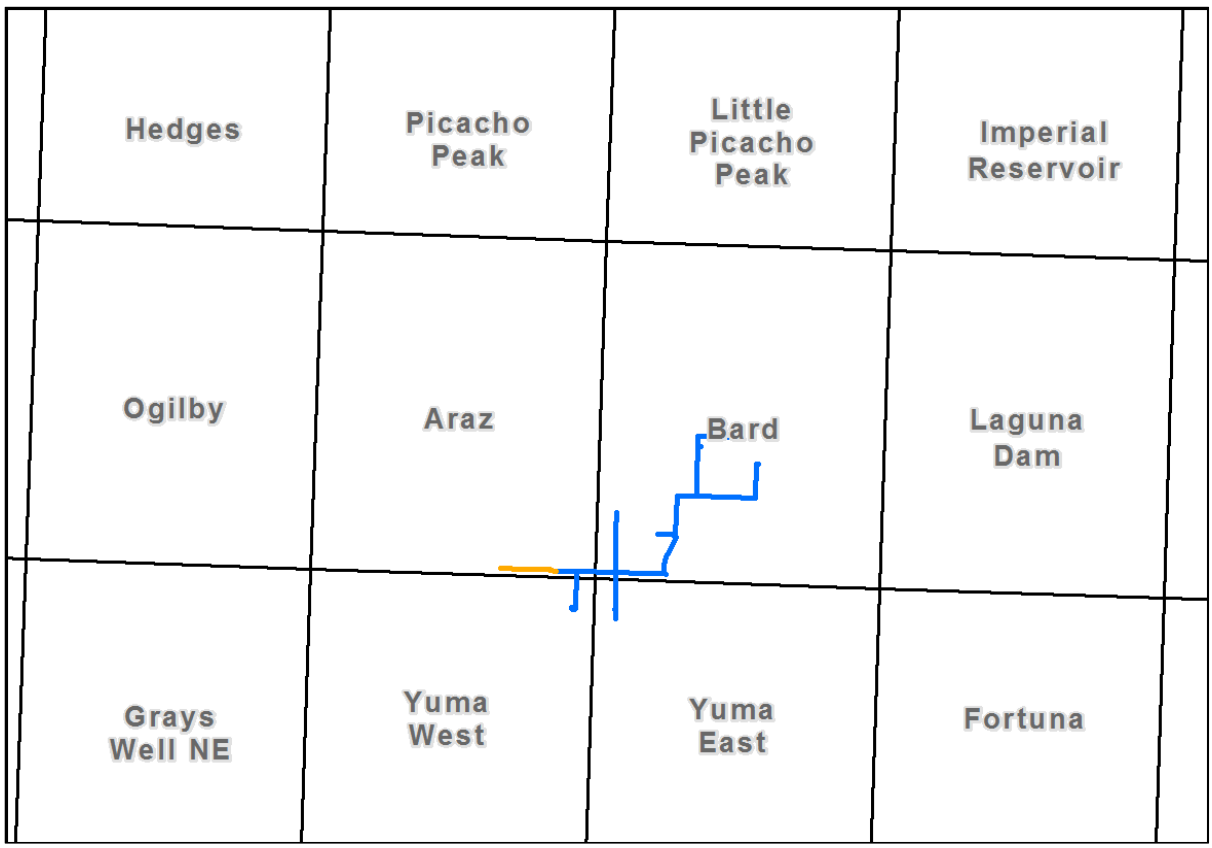



**Figure 4. USGS topographic quadrangles in CNDDB search.**

## *3.2 Habitat Types*

### 3.2.1 Terrestrial Habitat

The study area is located within the Colorado Desert, as classified in *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 2009); however, the dominant type of terrestrial habitat present in the project area consists of agricultural land that is being actively cultivated to produce Sudangrass, wheat, cotton, alfalfa, dates, citrus, and other crops. The road shoulders where the proposed telecommunications line is to be installed are mostly devoid of vegetation as a result of blading activities associated with road maintenance and agricultural activities. Because of this previous disturbance, little-to-no native vegetation remains in the project area. Complete lists of plants and wildlife species identified in the study area at the time of the surveys can be found in Appendices C and D.

### 3.2.2 Aquatic Habitat

Aquatic habitat in the study area is limited to that associated with agricultural canals. There are no ponds or ephemeral or perennial waterways within the study area.

Grass Carp *(Ctenopharyngodon idella)*, a fish species native to southeastern Russia and northwestern China, has been stocked in the Yuma Main Canal by the Yuma County Water User's Association since October 2013 for vegetation control purposes.

### 3.2.3 Sensitive Natural Communities

**Riparian Areas**

No sensitive natural communities, as defined by CDFW, are present in the study area. However, the margins of unlined canals in the study area, especially the Reservation Main Drain, contain limited riparian vegetation consisting mostly of dense Common Reed *(Phragmites australis)* and invasive species such as Salt Cedar *(Tamarix ramosissima)* (see Photos 4 and 9 in Appendix E). This vegetation is mostly low-growing, is not structurally complex, and does not have a tree overstory.

**Wetlands**

Riverine wetlands may be present along the unlined canals that are crossed by the project corridors. These potential wetlands were not delineated during the field surveys because TDS will be boring beneath all of the canals crossed by the line installations with sufficient set backs from either the canal edges or the extent of associated vegetation, if present, thus avoiding any potential impacts to wetlands.

## *3.3 Special Status Species*

Based on the assessment methodology outlined in Section 2.0, seven Special Status wildlife species are either known to occur or have the potential to occur in the study area (Table 4). Because of the previously disturbed nature of the study area and its lack of native vegetation, no Special Status plant species were expected to be found during the surveys, and none were identified.

### 3.3.1 Special Status Wildlife Species

**Table 4. Special Status Species with the Potential to Occur in the Study Area**

| Scientific Name | Common Name | Status (FWS/State/CNPS) |
|---|---|---|
| **Amphibians** | | |
| *Incilius alvarius* | Sonoran Desert Toad | –/SSC/– |
| *Lithobates yavapaiensis* | Lowland Leopard Frog | –/SSC/– |
| **Birds** | | |
| *Lanius ludovicianus* | Loggerhead Shrike | –/SSC/– |
| *Pyrocephalus rubinus* | Vermilion Flycatcher | –/SSC/– |
| *Xanthocephalus xanthocephalus* | Yellow-headed Blackbird | –/SSC/– |
| **Mammals** | | |
| *Corynorhinus townsendii* | Townsend's Big-eared Bat | –/CT, SSC/– |
| *Sigmodon hispidus eremicus* | Yuma Hispid Cotton Rat | –/SSC/– |

*Key:* SSC = Species of Special Concern, CT = Candidate Threatened.

#### 3.3.1.1 Sonoran Desert (Colorado River) Toad *(Incilius alvarius)*

**Federal Status:** None

**State/CDFW Status:** Species of Special Concern

**Habitat/Biology:** The Colorado River Toad is found in the lower Colorado River and in irrigated lowlands of the extreme southeast portion of Imperial County. In the main part of its range it can be found at elevations from sea level to 1,600 m (5,300 feet) AMSL. It can be found in a variety of desert and semi-arid habitats, including brushy desert with creosote bush, washes with mesquite, and semi-arid grasslands and woodlands. It is semi-aquatic and is usually found associated with large, somewhat permanent streams. It is occasionally found near small springs, temporary rain pools, and human-made canals and irrigation ditches. This species is active from March to July during periods of warm rainfall (CDFW 2014).

**Critical Habitat Designation:** Not applicable

**CNDDB Records:** This species has mapped occurrences on the Araz and Bard USGS quadrangles.

**Potential to Occur within the Study Area:** No Sonoran Desert Toad individuals were identified during the biological survey. Sonoran Desert Toad has a moderate potential to occur along the unlined and vegetated canals crossed by the project corridors because they contain suitable cover, foraging, and general habitat for this species. It would be unlikely for this species to occur along the lined canals crossed by the project corridors and in the remaining portions of the study area located away from the canals because of the general lack of cover in these areas.

#### 3.3.1.2 Lowland Leopard Frog *(Lithobates yavapaiensis)*

**Federal Status:** None

**State/CDFW Status:** Species of Special Concern

**Habitat/Biology:** Historically, the Lowland Leopard Frog ranged from northwestern Arizona through central and southeastern Arizona, southwestern New Mexico, and northern Sonora, Mexico. Populations were also known from southwestern Arizona and southeastern California along the lower Colorado River and in the Coachella Valley. This species inhabits aquatic systems in lower elevation desert grasslands up to mid-elevation pinyon-juniper woodland. They are habitat generalists and breed in a variety of natural and human-made aquatic systems. Natural systems include rivers, permanent streams and permanent pools in intermittent streams, beaver ponds, cienegas, wetlands, and springs; while human-made systems include earthen cattle tanks, livestock drinkers, canals, irrigation sloughs, wells, mine adits, abandoned swimming pools, and ornamental backyard ponds. Most historical localities are from small-to-medium-sized streams and rivers. In these stream and river habitats, Lowland Leopard Frogs are typically concentrated at springs, near debris piles, at heads of pools, and near deep pools associated with root masses (Arizona Game and Fish Department 2006).

**Critical Habitat Designation:** Not applicable

**CNDDB Records:** This species has mapped occurrences on the Imperial Reservoir and Laguna USGS quadrangles.

**Potential to Occur within the Study Area:** No Lowland Leopard Frog individuals were identified during the biological survey. Lowland Leopard Frog has a moderate potential to occur along the unlined and vegetated canals crossed by the project corridors because they contain suitable cover, foraging, and general habitat for this species. It would be unlikely for this species to occur along the lined canals crossed by the project corridors and in the remaining portions of the study area located away from the canals because of the general lack of cover in these areas.

#### 3.3.1.3 Loggerhead Shrike *(Lanius ludovicianus)*

**Federal Status:** None

**State/CDFW Status:** Species of Special Concern

**Habitat/Biology:** Loggerhead Shrike is a common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest population density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. This species rarely occurs in heavily urbanized areas but is often found in open cropland. It sometimes uses edges of denser habitats (CDFW 2014).

**Critical Habitat Designation:** Not applicable

**CNDDB Records:** This species has an unprocessed occurrence on the Laguna Dam USGS quadrangle.

**Potential to Occur within the Study Area:** No Loggerhead Shrike individuals were identified during the biological survey. Loggerhead Shrike has a low potential to occur in the study area because of the presence of scattered residences and commercial areas with their associated activity levels; however, the agricultural fields in and adjacent to the study area located away from these developed areas may provide suitable open habitat for this species.

#### 3.3.1.4 Vermilion Flycatcher *(Pyrocephalus rubinus)*

**Federal Status:** None

**State/CDFW Status:** Species of Special Concern

**Habitat/Biology:** Vermilion Flycatcher is a rare, local, yearlong resident along the Colorado River, especially in vicinity of Blythe, Riverside County. Nesting individuals inhabit cottonwood, willow, mesquite, and other vegetation in desert riparian habitat adjacent to irrigated fields, irrigation ditches, pastures and other open, mesic areas in isolated patches throughout central southern California. Populations of this species have declined drastically in the Imperial and Coachella Valleys and along the Colorado River, primarily as a result of loss of habitat. Despite local extirpations in these two valleys, the overall breeding range of Vermilion Flycatcher has expanded in recent years to the north and west (CDFW 2014).

**Critical Habitat Designation:** Not applicable

**CNDDB Records:** This species has mapped occurrences on the Yuma East and Laguna USGS quadrangles. It also has unprocessed and mapped occurrences on the Little Picacho Peak and Imperial Reservoir quadrangles.

**Potential to Occur within the Study Area:** No Vermilion Flycatcher individuals were identified during the biological survey. Vermilion Flycatcher has a low potential to nest in the study area because of the lack of well-developed riparian areas. This species has a moderate potential to occur in the irrigated fields and vegetated canals in and adjacent to the study area because these areas may provide suitable foraging habitat for this species.

#### 3.3.1.5 Yellow-headed Blackbird *(Xanthocephalus xanthocephalus)*

**Federal Status:** None

**State/CDFW Status:** Species of Special Concern

**Habitat/Biology:** In California, the Yellow-headed Blackbird breeds commonly but locally east of the Cascade Range and Sierra Nevada, in the Imperial and Colorado River Valleys, in the Central Valley, and at selected locations in the coast ranges west of the Central Valley. This species nests in fresh emergent wetlands with dense vegetation and deep water, often along the borders of lakes or ponds. Individuals forage in emergent wetlands and moist, open areas, especially cropland and the muddy shores of lakes. Yellow-headed Blackbird has a restricted distribution in the Central Valley in winter, occurring mainly in the western portion. This species is fairly common in winter in the Imperial Valley and it occurs as a migrant and local breeder in desert and along the Orange County coast. Yellow-headed Blackbird has bred, at least irregularly, as high as 2,000 m (6,600 feet) AMSL in the San Bernardino Mountains (CDFW 2014).
**Critical Habitat Designation:** Not applicable

**CNDDB Records:** This species has unprocessed occurrences on the Bard and Imperial Reservoir quadrangles.

**Potential to Occur within the Study Area:** No Yellow-headed Blackbird individuals were identified during the biological survey. There are no emergent wetlands in the study area suitable for nesting Yellow-headed Blackbirds; however, this species has a moderate potential to occur because the agricultural field in and adjacent to the study area may provide suitable foraging habitat.

#### 3.3.1.6 Townsend's Big-eared Bat *(Corynorhinus townsendii)*

**Federal Status:** None

**State/CDFW Status:** Candidate Threatened, Species of Special Concern

**Habitat/Biology:** Townsend's Big-eared Bat is found throughout California, but the details of its distribution are not well-known. This species is found in all but subalpine and alpine habitats, and may be found at any season throughout its range. Once considered common, Townsend's Big-eared Bat is now considered uncommon in California. It is most abundant in mesic habitats. This species requires caves, mines, tunnels, buildings, or other human-made structures for roosting. It may use separate sites for night, day, hibernation, or maternity roosts. Hibernation roosts are cold but not

below freezing, and individuals may move within the hibernacula to find suitable temperatures. Maternity roosts are warmer than hibernation roosts.

Small moths are the principal food source for Townsend's Big-eared Bat, although beetles and a variety of soft-bodied insects are also consumed. This species captures prey in flight using echolocation or by gleaning from foliage. Flight is slow and maneuverable, and this bat is capable of hovering (CDFW 2014).

**Critical Habitat Designation**: Not applicable

**CNDDB Records:** This species has mapped occurrences on the Bard, Yuma East, Yuma West, Imperial Reservoir, Little Picacho Peak, and Picacho Peak quadrangles.

**Potential to Occur within the Study Area:** No Townsend's Big-eared Bat individuals or potential roosting sites were identified in the study area during the biological survey. Townsend's Big-eared Bat has a moderate potential to occur in the study area while foraging because the vegetated areas, including agricultural fields, in and adjacent to the study area may provide suitable foraging habitat.

#### 3.3.1.7 Yuma Hispid Cotton Rat *(Sigmodon hispidus eremicus)*

**Federal Status:** None

**State/CDFW Status:** Species of Special Concern

**Habitat/Biology**: In California, Yuma Hispid Cotton Rat occurs only along the Colorado River and in the Imperial Valley. Establishment of cotton rats in the Imperial Valley apparently was in response to agricultural irrigation practices. This species is most common in grassland and cropland habitats near water, including grass-forb understory vegetation in early successional stages of other habitats. Cotton rats also occur in overgrown clearings and herbaceous borders of fields and brushy areas (CDFW 2014). Grass height and density have been documented as important habitat components for hispid cotton rats; they utilize runways through dense herbaceous growth and nests are built of woven grass (BOR 2008).

**Critical Habitat Designation:** Not applicable

**CNDDB Records:** This species has mapped occurrences on the Bard, Yuma West, Little Picacho Peak, and Laguna Dam quadrangles. It also has mapped and unprocessed occurrences on the Yuma East quadrangle.

**Potential to Occur within the Study Area:** No Yuma Hispid Cotton Rat individuals were identified in the study area during the biological survey. Yuma Hispid Cotton Rat has a moderate potential to occur in the study area along the unlined Reservation Main Drain because the dense vegetation present represents suitable cover and foraging habitat. It would be unlikely for this species to occur along the lined canals crossed by the project corridors and in the remaining portions of the study area located away from the canals because of the lack of dense cover vegetation in these areas.

### 3.3.2 Migratory Birds

The study area and areas adjacent to it were determined to contain suitable habitat for two migratory birds appearing on the American Bird Conservancy's *U.S. Watchlist of Birds of Conservation Concern*. Both of these species were identified in the CNDDB search, which included mapped and unprocessed occurrences of Prairie Falcon *(Falco mexicanus)* on the Picacho Peak quadrangle and unprocessed occurrences of White-faced Ibis *(Plegadis chihi)* on the Bard quadrangle.

No bird nests were observed in the project corridors at the time of the surveys; this lack of nests was because the project corridors being essentially devoid of vegetation large enough to support bird nests. However, areas adjacent to the project corridors and the study area contain trees and other vegetation that may be utilized by migratory birds. A list of bird species appearing on the 2008 FWS Birds of Conservation Concern list for Bird Conservation Region 33, Sonoran and Mojave Deserts U.S. Portion Only, can be found in Table 5.

**Table 5. Bird Conservation Region 33 Migratory Bird List**

| | |
|---|---|
| Least Bittern | Elf Owl |
| Bald Eagle | Burrowing Owl |
| Peregrine Falcon | Costa's Hummingbird |
| Prairie Falcon | Gila Woodpecker |
| Black Rail | Gilded Flicker |
| Snowy Plover | Bell's Vireo |
| Mountain Plover | Gray Vireo |
| Whimbrel | Bendire's Thrasher |
| Long-billed Curlew | LeConte's Thrasher |
| Marbled Godwit | Lucy's Warbler |
| Red Knot | Yellow Warbler |
| Gull-billed Tern | Rufous-winged Sparrow |
| Black Skimmer | Black-chinned Sparrow |
| Yellow-billed Cuckoo | Lawrence's Goldfinch |

## *3.4 Invasive Species*

Three invasive plant species appearing on the California Department of Food and Agriculture (CDFA) Noxious Weed Species List and/or the California Invasive Plant Council (CIPC) Invasive Plant Inventory list were identified in the study area. These invasive species include Russian Thistle *(Salsola kali)*, Kariba Weed *(Salvinia molesta)*, and Salt Cedar *(Tamarix ramosissima)* (See Appendix C).

With the exception of Russian Thistle and a few scattered dryland infestations of Salt Cedar, all of these invasive species were found associated with the irrigation canals crossed by the project corridors. The only aquatic invasive species identified, Kariba Weed, was found in the Reservation Main Drain at the proposed corridor crossings on Fisher, Picacho, and Stalnacker, Roads (crossings 7–9 indicated in Figure 2).

Two of the invasive species, Kariba Weed and Salt Cedar, have a High rating assigned by CIPC and the remaining species, Russian Thistle, has a Limited rating. The CIPC rating system is as follows:

> **High**: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate-to-high rates of dispersal and establishment. Most are widely distributed ecologically.
>
> **Moderate**: These species have substantial and apparent but generally not severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate-to-high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
>
> **Limited:** These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low-to-moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

## *3.5 Jurisdictional Waters*

There are no ephemeral drainages such as washes within or in the vicinity of the study area. There are several irrigation canals in the project area, and it was assumed that they flow at least intermittently and in some cases, perennially. An example of the latter would be the Yuma Main Canal and the Reservation Main Drain, two of the largest canals observed during the surveys. In total, the proposed fiber installations would cross irrigation canals at 17 locations.

The USACE and/or CDFW jurisdictional status of the canals in the project area was not determined conclusively because all of the canals would be avoided during the proposed telecommunications line installations (See the *Waterway Delineation and Assessment Report*, under separate cover). No dredge and fill operations will occur within the canals and no subsequent loss of WUS will take place because all canals in the project area will be bored beneath during the proposed installations. Likewise, a stream alteration permit from CDFW is unnecessary for the proposed installations because the canals and any potential wildlife habitat, either in the canals themselves or riparian habitat along the canal margins, will be avoided. A summary of the crossings, including the names of the canals, their locations, and corresponding identification numbers as indicated on Figure 2, can be found in Table 6.

**Table 6. Irrigation Canal Crossings in the Study Area**

| Map No. | Canal Name | Location | Lined? |
|---|---|---|---|
| 1 | Reservation Main Drain | Stahlnacker Road | no |
| 2 | unnamed canal | Fisher and Parkman Roads | no |
| 3 | Reservation Main Drain | Fisher Road | no |
| 4 | Hopi Canal | Bard and Whitmore Road | no |

| Map No. | Canal Name | Location | Lined? |
|---|---|---|---|
| 5 | Cocopah Canal | Ross Road | yes |
| 6 | unnamed canal | Fisher and Ross Roads | yes |
| 7 | Papago Canal | Perez Road | no |
| 8 | Pima Canal | Haughtelin and Perez Roads | yes |
| 9 | Cocopah Canal | Flood Road | yes |
| 10 | Navajo Canal | Picacho and Jackson Roads | no |
| 11 | Reservation Main Drain | Picacho Road | no |
| 12 | Pima Canal | Picacho and Haughtelin Roads | yes |
| 13 | Pueblo Canal | Picacho and Indian Rock Roads | yes |
| 14 | Cocopah Canal | Picacho Road | no |
| 15 | Reservation Main Drain | Arnold Road | no |
| 16 | Yuma Main Canal | Arnold Road | no |
| 17 | Walapai Canal | Arnold Road | no |

# 4.0 IMPACTS OF THE PROPOSED PROJECT

## *4.1 Significance Criteria*

Per the regulatory requirements outlined in Section 1.3, including CEQA and NEPA statutes and guidelines, the proposed project will have a significant adverse impact on biological resources if it will:

- Have a substantial adverse effect, either directly through "take" or indirectly through habitat modifications, on any species identified as Threatened, Endangered, Candidate, or Proposed for Candidacy by FWS, or as Sensitive or as a Special-status Species in local or regional plans, policies, or regulations, or by FWS, CDFW, or CNPS;
- Have a substantial adverse effect on a species' Critical Habitat as designated by USFWS;
- Result in the introduction or spread of an invasive species;
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, regulations, or by the FWS or CDFW;
- Have a substantial adverse effect on Federally protected wetlands or other WUS as defined by Sections 10 and 404 of the Clean Water Act, including special aquatic sites such as wetlands, through direct removal, filling, hydrologic disruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources;
- Have a substantial adverse effect on habitat for commercially or recreationally important fisheries;
- Have a substantial adverse effect on waterfowl breeding or wintering habitat by reducing acreage or quality, or have a substantial adverse effect on the acreage or quality of migrant or wintering shorebird habitat; or,

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

## *4.2 Effects of the Proposed Project*

The proposed project will involve the installation of a buried telecommunications line in the previously disturbed road shoulders of existing roads. Following line installation, the only surface-level ancillary equipment that will be visible will be line markers, splice boxes, and ten equipment cabinets mounted on concrete pads. The majority of the ground disturbance associated with the installation would be temporary and would occur during plowing operations and at the bore pit locations used for the bored installations. The only permanent ground disturbance would occur at the new equipment cabinet locations. Impacts to wildlife and wildlife habitat from the proposed project would be temporary. Equipment noise and the presence of work crews may disturb wildlife in the areas surrounding the project corridors. Because the installations would occur along existing roads that carry regular vehicular traffic, any increases in noise and activity levels during construction would be minimal.

## *4.3 Impact Assessment and Recommended Avoidance and Minimization Measures*

The following impact assessment is based on the criteria summarized in Section 4.1. For each impact identified, recommended avoidance, minimization, or mitigation measures are identified.

### 4.3.1 Special Status Species

**Potential Impact #1: Construction of the proposed project has the potential to impact Sonoran Desert Toad and Lowland Leopard Frog.**

Sonoran Desert Toad and Lowland Leopard Frog have the potential to occur along the irrigation canals in the study area. Implementation of the proposed project has the potential to impact these two species if individuals come into contact with construction equipment or personnel or individuals attempt to flee the construction area and are subject to increased chances of predation or other harm. With the implementation of avoidance and minimization measures listed below, impacts are expected to be reduced to a less than significant level.

Recommended Avoidance and Minimization Measures for Impact #1:

- All irrigation canals in the study area will be avoided during construction.
- Bore pits will be placed a minimum distance of 5 m (16 feet) beyond either the top of the canal bank or the maximum extent of any vegetation present along the canal's margin.

**Potential Impact #2: Construction of the proposed project has the potential to impact Loggerhead Shrike, Yellow-headed Blackbird, and Townsend's Big-eared Bat.**

Loggerhead Shrike and Yellow-headed Blackbird have the potential to occur in the agricultural fields adjacent to the study area. In addition to potentially occurring in the agricultural fields, Townsend's Big-eared Bat has the potential to occur in vegetated areas adjacent to the study area.

Recommended Avoidance and Minimization Measures for Impact #2:

- All agricultural fields will be avoided during construction.
- It is extremely unlikely that any vegetation trimming will be necessary during project implementation; however, if trimming is required to facilitate the installations, it will be kept to the absolute minimum necessary.

**Potential Impact #3: Construction of the proposed project has the potential to impact Vermilion Flycatcher and Yuma Hispid Cotton Rat.**

Vermilion Flycatcher and Yuma Hispid Cotton Rat have the potential to occur in the agricultural fields adjacent to the study area and along the vegetated irrigation canals within the study area.

Recommended Avoidance and Minimization Measures for Impact #3:

- All agricultural fields will be avoided during construction.
- All irrigation canals in the study area will be avoided during construction.
- Bore pits will be placed a minimum distance of 5 m (16 feet) beyond either the top of the canal bank or the maximum extent of any vegetation present along the canal's margin.

### 4.3.2 Invasive Species

**Potential Impact #4: Construction of the proposed project has the potential to result in the spread of invasive plant species.**

Because of the presence of invasive plant species in the study area, implementation of the proposed project has the potential to result in further spread of existing noxious weeds. Invasive species could also be introduced into the study area by construction equipment, vehicles, personnel, or imported fill or other material. Further introduction of invasive plant species could adversely impact the irrigation canals in the project area and their associated riparian areas, where present. However, with the implementation of the avoidance and minimization measures listed below, impacts are expected to be reduced to a less than significant level.

Recommended Avoidance and Minimization Measures for Impact #4:

- All irrigation canals in the study area will be avoided during construction.
- Bore pits will be placed a minimum distance of 5 m (16 feet) beyond either the top of the canal bank or the maximum extent of any vegetation present along the canal's margin.
- All equipment and vehicles will be thoroughly cleaned to remove dirt and weed seeds prior to being transported or driven to or from the study area.

## 5.0 SUMMARY

This BRE has been prepared for the Winterhaven Last Mile Underserved Broadband Project in order to evaluate the potential for the proposed project to impact sensitive biological resources. Based on the results of the analysis conducted in preparation of this report, the proposed project has the potential to impact special-status species and result in the introduction or spread of invasive species. With the implementation of the proposed avoidance and minimization measures, all potential adverse impacts are expected to be reduced to a less than significant level.

## 6.0 REPORT PREPARERS AND CERTIFICATION

Tierra believes that the proposed project would not violate any of the regulatory requirements outlined in Section 1.3, provided that all recommended avoidance and minimization measures indicated in Section 1.4 are implemented during construction. Results and conclusions contained in this report are based on actual field reconnaissance and represent my best professional judgment, based on information provided by the project proponent, applicable agencies, and other sources.

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11/17/2014

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# APPENDIX A. REGIONALLY OCCURRING SPECIAL STATUS SPECIES LISTS

**Table A.1. Regionally Occurring Special Status Species Lists**

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Amphibians | *Incilius alvarius* | Sonoran Desert Toad | AAABB01010 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Amphibians - *Bufonidae - Incilius alvarius* |
| Animals - Amphibians | *Incilius alvarius* | Sonoran Desert Toad | AAABB01010 | none | none | SSC | - | 3211476 | Araz | mapped | Animals - Amphibians - *Bufonidae - Incilius alvarius* |
| Animals - Amphibians | *Lithobates yavapaiensis* | Lowland (=Yavapai, San Sebastian, and San Felipe) Leopard Frog | AAABH01250 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped | Animals - Amphibians - *Ranidae - Lithobates yavapaiensis* |
| Animals - Amphibians | *Lithobates yavapaiensis* | Lowland (=Yavapai, San Sebastian, and San Felipe) Leopard Frog | AAABH01250 | none | none | SSC | - | 3211474 | Laguna Dam | mapped | Animals - Amphibians - *Ranidae - Lithobates yavapaiensis* |
| Animals - Birds | *Accipiter cooperii* | Cooper's Hawk | ABNKC12040 | none | none | WL | - | 3211474 | Laguna Dam | mapped | Animals - Birds - *Accipitridae - Accipiter cooperii* |
| Animals - Birds | *Accipiter cooperii* | Cooper's Hawk | ABNKC12040 | none | none | WL | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Accipitridae - Accipiter cooperii* |
| Animals - Birds | *Accipiter cooperii* | Cooper's Hawk | ABNKC12040 | none | none | WL | - | 3211475 | Bard | mapped and unprocessed | Animals - Birds - *Accipitridae - Accipiter cooperii* |
| Animals - Birds | *Aquila chrysaetos* | Golden Eagle | ABNKC22010 | none | none | FP; WL | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Accipitridae - Aquila chrysaetos* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Haliaeetus leucocephalus* | Bald Eagle | ABNKC10010 | delisted | Endangered | FP | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Accipitridae* - *Haliaeetus leucocephalus* |
| Animals - Birds | *Haliaeetus leucocephalus* | Bald Eagle | ABNKC10010 | delisted | Endangered | FP | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Accipitridae* - *Haliaeetus leucocephalus* |
| Animals - Birds | *Pandion haliaetus* | Osprey | ABNKC01010 | none | none | WL | - | 3211475 | Bard | unprocessed | Animals - Birds - *Accipitridae* - *Pandion haliaetus* |
| Animals - Birds | *Chaetura vauxi* | Vaux's Swift | ABNUA03020 | none | none | SSC | - | 3211475 | Bard | unprocessed | Animals - Birds - *Apodidae* - *Chaetura vauxi* |
| Animals - Birds | *Chaetura vauxi* | Vaux's Swift | ABNUA03020 | none | none | SSC | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Apodidae* - *Chaetura vauxi* |
| Animals - Birds | *Ardea herodias* | Great Blue Heron | ABNGA04010 | none | none | - | - | 3211475 | Bard | mapped | Animals - Birds - *Ardeidae* - *Ardea herodias* |
| Animals - Birds | *Ardea herodias* | Great Blue Heron | ABNGA04010 | none | none | - | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Ardeidae* - *Ardea herodias* |
| Animals - Birds | *Ardea herodias* | Great Blue Heron | ABNGA04010 | none | none | - | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Ardeidae* - *Ardea herodias* |
| Animals - Birds | *Ixobrychus exilis* | Least Bittern | ABNGA02010 | none | none | SSC | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Ardeidae* - *Ixobrychus exilis* |
| Animals - Birds | *Ixobrychus exilis* | Least Bittern | ABNGA02010 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Ardeidae* - *Ixobrychus exilis* |
| Animals - Birds | *Ixobrychus exilis* | Least Bittern | ABNGA02010 | none | none | SSC | - | 3211474 | Laguna Dam | unprocessed | Animals - Birds - *Ardeidae* - *Ixobrychus exilis* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Nycticorax nycticorax* | Black-Crowned Night Heron | ABNGA11010 | none | none | - | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Ardeidae* - *Nycticorax nycticorax* |
| Animals - Birds | *Nycticorax nycticorax* | Black-Crowned Night Heron | ABNGA11010 | none | none | - | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Ardeidae* - *Nycticorax nycticorax* |
| Animals - Birds | *Mycteria americana* | Wood Stork | ABNGF02010 | none | none | SSC | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Ciconiidae* - *Mycteria americana* |
| Animals - Birds | *Coccyzus americanus occidentalis* | Western Yellow-Billed Cuckoo | ABNRB02022 | Proposed Threatened | Endangered | - | - | 3211484 | Imperial Reservoir | mapped | Animals - Birds - *Cuculidae* - *Coccyzus americanus occidentalis* |
| Animals - Birds | *Coccyzus americanus occidentalis* | Western Yellow-Billed Cuckoo | ABNRB02022 | Proposed Threatened | Endangered | - | - | 3211475 | Bard | mapped | Animals - Birds - *Cuculidae* - *Coccyzus americanus occidentalis* |
| Animals - Birds | *Coccyzus americanus occidentalis* | Western Yellow-Billed Cuckoo | ABNRB02022 | Proposed Threatened | Endangered | - | - | 3211465 | Yuma East | unprocessed | Animals - Birds - *Cuculidae* - *Coccyzus americanus occidentalis* |
| Animals - Birds | *Coccyzus americanus occidentalis* | Western Yellow-Billed Cuckoo | ABNRB02022 | Proposed Threatened | Endangered | - | - | 3211466 | Yuma West | mapped | Animals - Birds - *Cuculidae* - *Coccyzus americanus occidentalis* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Coccyzus americanus occidentalis* | Western Yellow-Billed Cuckoo | ABNRB02022 | Proposed Threatened | Endangered | - | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Cuculidae - Coccyzus americanus occidentalis* |
| Animals - Birds | *Coccyzus americanus occidentalis* | Western Yellow-Billed Cuckoo | ABNRB02022 | Proposed Threatened | Endangered | - | - | 3211485 | Little Picacho Peak | mapped | Animals - Birds - *Cuculidae - Coccyzus americanus occidentalis* |
| Animals - Birds | *Melozone aberti* | Abert's Towhee | ABPBX74050 | none | none | - | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Emberizidae - Melozone aberti* |
| Animals - Birds | *Melozone aberti* | Abert's Towhee | ABPBX74050 | none | none | - | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Emberizidae - Melozone aberti* |
| Animals - Birds | *Melozone aberti* | Abert's Towhee | ABPBX74050 | none | none | - | - | 3211475 | Bard | unprocessed | Animals - Birds - *Emberizidae - Melozone aberti* |
| Animals - Birds | *Spizella passerina* | Chipping Sparrow | ABPBX94020 | none | none | - | - | 3211475 | Bard | unprocessed | Animals - Birds - *Emberizidae - Spizella passerina* |
| Animals - Birds | *Falco mexicanus* | Prairie Falcon | ABNKD06090 | none | none | WL | - | 3211486 | Picacho Peak | mapped and unprocessed | Animals - Birds - *Falconidae - Falco mexicanus* |
| Animals - Birds | *Xanthocephalus xanthocephalus* | Yellow-Headed Blackbird | ABPBXB3010 | none | none | SSC | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Icteridae - Xanthocephalus xanthocephalus* |
| Animals - Birds | *Xanthocephalus xanthocephalus* | Yellow-Headed Blackbird | ABPBXB3010 | none | none | SSC | - | 3211475 | Bard | unprocessed | Animals - Birds - *Icteridae - Xanthocephalus xanthocephalus* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Lanius ludovicianus* | Loggerhead Shrike | ABPBR01030 | none | none | SSC | - | 3211474 | Laguna Dam | unprocessed | Animals - Birds - *Laniidae - Lanius ludovicianus* |
| Animals - Birds | *Toxostoma crissale* | Crissal Thrasher | ABPBK06090 | none | none | SSC | - | 3211474 | Laguna Dam | mapped | Animals - Birds - *Mimidae - Toxostoma crissale* |
| Animals - Birds | *Toxostoma crissale* | Crissal Thrasher | ABPBK06090 | none | none | SSC | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Mimidae - Toxostoma crissale* |
| Animals - Birds | *Toxostoma crissale* | Crissal Thrasher | ABPBK06090 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Birds - *Mimidae - Toxostoma crissale* |
| Animals - Birds | *Toxostoma crissale* | Crissal Thrasher | ABPBK06090 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Mimidae - Toxostoma crissale* |
| Animals - Birds | *Toxostoma crissale* | Crissal Thrasher | ABPBK06090 | none | none | SSC | - | 3211485 | Little Picacho Peak | mapped | Animals - Birds - *Mimidae - Toxostoma crissale* |
| Animals - Birds | *Toxostoma lecontei* | Le Conte's Thrasher | ABPBK06100 | none | none | SSC | - | 3211476 | Araz | unprocessed | Animals - Birds - *Mimidae - Toxostoma lecontei* |
| Animals - Birds | *Toxostoma lecontei* | Le Conte's Thrasher | ABPBK06100 | none | none | SSC | - | 3211475 | Bard | unprocessed | Animals - Birds - *Mimidae - Toxostoma lecontei* |
| Animals - Birds | *Dendroica occidentalis* | Hermit Warbler | ABPBX03090 | none | none | - | - | 3211475 | Bard | unprocessed | Animals - Birds - *Parulidae - Dendroica occidentalis* |
| Animals - Birds | *Dendroica occidentalis* | Hermit Warbler | ABPBX03090 | none | none | - | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Parulidae - Dendroica occidentalis* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Dendroica occidentalis* | Hermit Warbler | ABPBX03090 | none | none | - | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Parulidae* - *Dendroica occidentalis* |
| Animals - Birds | *Dendroica petechia brewsteri* | Yellow Warbler | ABPBX03018 | none | none | SSC | - | 3211474 | Laguna Dam | unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia brewsteri* |
| Animals - Birds | *Dendroica petechia brewsteri* | Yellow Warbler | ABPBX03018 | none | none | SSC | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia brewsteri* |
| Animals - Birds | *Dendroica petechia sonorana* | Sonoran Yellow Warbler | ABPBX03017 | none | none | SSC | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia sonorana* |
| Animals - Birds | *Dendroica petechia sonorana* | Sonoran Yellow Warbler | ABPBX03017 | none | none | SSC | - | 3211475 | Bard | mapped and unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia sonorana* |
| Animals - Birds | *Dendroica petechia sonorana* | Sonoran Yellow Warbler | ABPBX03017 | none | none | SSC | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia sonorana* |
| Animals - Birds | *Dendroica petechia sonorana* | Sonoran Yellow Warbler | ABPBX03017 | none | none | SSC | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia sonorana* |
| Animals - Birds | *Dendroica petechia sonorana* | Sonoran Yellow Warbler | ABPBX03017 | none | none | SSC | - | 3211465 | Yuma East | unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia sonorana* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Dendroica petechia sonorana* | Sonoran Yellow Warbler | ABPBX03017 | none | none | SSC | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Parulidae* - *Dendroica petechia sonorana* |
| Animals - Birds | *Icteria virens* | Yellow-Breasted Chat | ABPBX24010 | none | none | SSC | - | 3211485 | Little Picacho Peak | mapped and unprocessed | Animals - Birds - *Parulidae* - *Icteria virens* |
| Animals - Birds | *Icteria virens* | Yellow-Breasted Chat | ABPBX24010 | none | none | SSC | - | 3211465 | Yuma East | unprocessed | Animals - Birds - *Parulidae* - *Icteria virens* |
| Animals - Birds | *Icteria virens* | Yellow-Breasted Chat | ABPBX24010 | none | none | SSC | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Parulidae* - *Icteria virens* |
| Animals - Birds | *Icteria virens* | Yellow-Breasted Chat | ABPBX24010 | none | none | SSC | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Parulidae* - *Icteria virens* |
| Animals - Birds | *Icteria virens* | Yellow-Breasted Chat | ABPBX24010 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Parulidae* - *Icteria virens* |
| Animals - Birds | *Icteria virens* | Yellow-Breasted Chat | ABPBX24010 | none | none | SSC | - | 3211475 | Bard | mapped and unprocessed | Animals - Birds - *Parulidae* - *Icteria virens* |
| Animals - Birds | *Oreothlypis luciae* | Lucy's Warbler | ABPBX01090 | none | none | SSC | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Parulidae* - *Oreothlypis luciae* |
| Animals - Birds | *Oreothlypis luciae* | Lucy's Warbler | ABPBX01090 | none | none | SSC | - | 3211474 | Laguna Dam | unprocessed | Animals - Birds - *Parulidae* - *Oreothlypis luciae* |
| Animals - Birds | *Oreothlypis luciae* | Lucy's Warbler | ABPBX01090 | none | none | SSC | - | 3211465 | Yuma East | unprocessed | Animals - Birds - *Parulidae* - *Oreothlypis luciae* |
| Animals - Birds | *Oreothlypis luciae* | Lucy's Warbler | ABPBX01090 | none | none | SSC | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Parulidae* - *Oreothlypis luciae* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Phalacrocorax auritus* | Double-Crested Cormorant | ABNFD01020 | none | none | WL | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Birds - *Phalacrocoracidae* - *Phalacrocorax auritus* |
| Animals - Birds | *Colaptes chrysoides* | Gilded Flicker | ABNYF10040 | none | Endangered | - | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Picidae* - *Colaptes chrysoides* |
| Animals - Birds | *Colaptes chrysoides* | Gilded Flicker | ABNYF10040 | none | Endangered | - | - | 3211475 | Bard | mapped | Animals - Birds - *Picidae* - *Colaptes chrysoides* |
| Animals - Birds | *Colaptes chrysoides* | Gilded Flicker | ABNYF10040 | none | Endangered | - | - | 3211465 | Yuma East | mapped and unprocessed | Animals - Birds - *Picidae* - *Colaptes chrysoides* |
| Animals - Birds | *Colaptes chrysoides* | Gilded Flicker | ABNYF10040 | none | Endangered | - | - | 3211466 | Yuma West | mapped | Animals - Birds - *Picidae* - *Colaptes chrysoides* |
| Animals - Birds | *Colaptes chrysoides* | Gilded Flicker | ABNYF10040 | none | Endangered | - | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Picidae* - *Colaptes chrysoides* |
| Animals - Birds | *Colaptes chrysoides* | Gilded Flicker | ABNYF10040 | none | Endangered | - | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Picidae* - *Colaptes chrysoides* |
| Animals - Birds | *Melanerpes lewis* | Lewis' Woodpecker | ABNYF04010 | none | none | - | - | 3211475 | Bard | unprocessed | Animals - Birds - *Picidae* - *Melanerpes lewis* |
| Animals - Birds | *Melanerpes uropygialis* | Gila Woodpecker | ABNYF04150 | none | Endangered | - | - | 3211475 | Bard | mapped | Animals - Birds - *Picidae* - *Melanerpes uropygialis* |
| Animals - Birds | *Melanerpes uropygialis* | Gila Woodpecker | ABNYF04150 | none | Endangered | - | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Picidae* - *Melanerpes uropygialis* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Melanerpes uropygialis* | Gila Woodpecker | ABNYF04150 | none | Endangered | - | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Picidae - Melanerpes uropygialis* |
| Animals - Birds | *Melanerpes uropygialis* | Gila Woodpecker | ABNYF04150 | none | Endangered | - | - | 3211466 | Yuma West | mapped | Animals - Birds - *Picidae - Melanerpes uropygialis* |
| Animals - Birds | *Melanerpes uropygialis* | Gila Woodpecker | ABNYF04150 | none | Endangered | - | - | 3211485 | Little Picacho Peak | mapped | Animals - Birds - *Picidae - Melanerpes uropygialis* |
| Animals - Birds | *Laterallus jamaicensis coturniculus* | California Black Rail | ABNME03041 | none | Threatened | FP | - | 3211485 | Little Picacho Peak | mapped | Animals - Birds - *Rallidae - Laterallus jamaicensis coturniculus* |
| Animals - Birds | *Laterallus jamaicensis coturniculus* | California Black Rail | ABNME03041 | none | Threatened | FP | - | 3211466 | Yuma West | mapped | Animals - Birds - *Rallidae - Laterallus jamaicensis coturniculus* |
| Animals - Birds | *Laterallus jamaicensis coturniculus* | California Black Rail | ABNME03041 | none | Threatened | FP | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Rallidae - Laterallus jamaicensis coturniculus* |
| Animals - Birds | *Laterallus jamaicensis coturniculus* | California Black Rail | ABNME03041 | none | Threatened | FP | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Rallidae - Laterallus jamaicensis coturniculus* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Laterallus jamaicensis coturniculus* | California Black Rail | ABNME03041 | none | Threatened | FP | - | 3211475 | Bard | mapped | Animals - Birds - *Rallidae* - *Laterallus jamaicensis coturniculus* |
| Animals - Birds | *Rallus longirostris yumanensis* | Yuma Clapper Rail | ABNME0501A | Endangered | Threatened | FP | - | 3211475 | Bard | mapped | Animals - Birds - *Rallidae* - *Rallus longirostris yumanensis* |
| Animals - Birds | *Rallus longirostris yumanensis* | Yuma Clapper Rail | ABNME0501A | Endangered | Threatened | FP | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Rallidae* - *Rallus longirostris yumanensis* |
| Animals - Birds | *Rallus longirostris yumanensis* | Yuma Clapper Rail | ABNME0501A | Endangered | Threatened | FP | - | 3211474 | Laguna Dam | mapped | Animals - Birds - *Rallidae* - *Rallus longirostris yumanensis* |
| Animals - Birds | *Rallus longirostris yumanensis* | Yuma Clapper Rail | ABNME0501A | Endangered | Threatened | FP | - | 3211466 | Yuma West | mapped | Animals - Birds - *Rallidae* - *Rallus longirostris yumanensis* |
| Animals - Birds | *Rallus longirostris yumanensis* | Yuma Clapper Rail | ABNME0501A | Endangered | Threatened | FP | - | 3211465 | Yuma East | mapped and unprocessed | Animals - Birds - *Rallidae* - *Rallus longirostris yumanensis* |
| Animals - Birds | *Rallus longirostris yumanensis* | Yuma Clapper Rail | ABNME0501A | Endangered | Threatened | FP | - | 3211485 | Little Picacho Peak | mapped and unprocessed | Animals - Birds - *Rallidae* - *Rallus longirostris yumanensis* |
| Animals - Birds | *Micrathene whitneyi* | Elf Owl | ABNSB09010 | none | Endangered | - | - | 3211474 | Laguna Dam | mapped | Animals - Birds - *Strigidae* - *Micrathene whitneyi* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Micrathene whitneyi* | Elf Owl | ABNSB09010 | none | Endangered | - | - | 3211484 | Imperial Reservoir | mapped | Animals - Birds - *Strigidae* - *Micrathene whitneyi* |
| Animals - Birds | *Micrathene whitneyi* | Elf Owl | ABNSB09010 | none | Endangered | - | - | 3211475 | Bard | mapped | Animals - Birds - *Strigidae* - *Micrathene whitneyi* |
| Animals - Birds | *Polioptila melanura* | Black-Tailed Gnatcatcher | ABPBJ08030 | none | none | - | - | 3211475 | Bard | mapped | Animals - Birds - *Sylviidae* - *Polioptila melanura* |
| Animals - Birds | *Polioptila melanura* | Black-Tailed Gnatcatcher | ABPBJ08030 | none | none | - | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Sylviidae* - *Polioptila melanura* |
| Animals - Birds | *Polioptila melanura* | Black-Tailed Gnatcatcher | ABPBJ08030 | none | none | - | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Sylviidae* - *Polioptila melanura* |
| Animals - Birds | *Polioptila melanura* | Black-Tailed Gnatcatcher | ABPBJ08030 | none | none | - | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Sylviidae* - *Polioptila melanura* |
| Animals - Birds | *Piranga rubra* | Summer Tanager | ABPBX45030 | none | none | SSC | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Thraupidae* - *Piranga rubra* |
| Animals - Birds | *Piranga rubra* | Summer Tanager | ABPBX45030 | none | none | SSC | - | 3211465 | Yuma East | unprocessed | Animals - Birds - *Thraupidae* - *Piranga rubra* |
| Animals - Birds | *Piranga rubra* | Summer Tanager | ABPBX45030 | none | none | SSC | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Thraupidae* - *Piranga rubra* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Piranga rubra* | Summer Tanager | ABPBX45030 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Thraupidae - Piranga rubra* |
| Animals - Birds | *Piranga rubra* | Summer Tanager | ABPBX45030 | none | none | SSC | - | 3211475 | Bard | mapped and unprocessed | Animals - Birds - *Thraupidae - Piranga rubra* |
| Animals - Birds | *Piranga rubra* | Summer Tanager | ABPBX45030 | none | none | SSC | - | 3211485 | Little Picacho Peak | unprocessed | Animals - Birds - *Thraupidae - Piranga rubra* |
| Animals - Birds | *Plegadis chihi* | White-Faced Ibis | ABNGE02020 | none | none | WL | - | 3211475 | Bard | unprocessed | Animals - Birds - *Threskiornithidae - Plegadis chihi* |
| Animals - Birds | *Calypte costae* | Costa's Hummingbird | ABNUC47020 | none | none | - | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Trochilidae - Calypte costae* |
| Animals - Birds | *Contopus cooperi* | Olive-Sided Flycatcher | ABPAE32010 | none | none | SSC | - | 3211466 | Yuma West | unprocessed | Animals - Birds - *Tyrannidae - Contopus cooperi* |
| Animals - Birds | *Empidonax traillii extimus* | Southwestern Willow Flycatcher | ABPAE33043 | Endangered | Endangered | - | - | 3211474 | Laguna Dam | mapped | Animals - Birds - *Tyrannidae - Empidonax traillii extimus* |
| Animals - Birds | *Myiarchus tyrannulus* | Brown-Crested Flycatcher | ABPAE43080 | none | none | WL | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Tyrannidae - Myiarchus tyrannulus* |
| Animals - Birds | *Myiarchus tyrannulus* | Brown-Crested Flycatcher | ABPAE43080 | none | none | WL | - | 3211465 | Yuma East | unprocessed | Animals - Birds - *Tyrannidae - Myiarchus tyrannulus* |
| Animals - Birds | *Myiarchus tyrannulus* | Brown-Crested Flycatcher | ABPAE43080 | none | none | WL | - | 3211475 | Bard | mapped | Animals - Birds - *Tyrannidae - Myiarchus tyrannulus* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Myiarchus tyrannulus* | Brown-Crested Flycatcher | ABPAE43080 | none | none | WL | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Tyrannidae* - *Myiarchus tyrannulus* |
| Animals - Birds | *Myiarchus tyrannulus* | Brown-Crested Flycatcher | ABPAE43080 | none | none | WL | - | 3211485 | Little Picacho Peak | mapped and unprocessed | Animals - Birds - *Tyrannidae* - *Myiarchus tyrannulus* |
| Animals - Birds | *Pyrocephalus rubinus* | Vermilion Flycatcher | ABPAE36010 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Tyrannidae* - *Pyrocephalus rubinus* |
| Animals - Birds | *Pyrocephalus rubinus* | Vermilion Flycatcher | ABPAE36010 | none | none | SSC | - | 3211475 | Bard | mapped and unprocessed | Animals - Birds - *Tyrannidae* - *Pyrocephalus rubinus* |
| Animals - Birds | *Pyrocephalus rubinus* | Vermilion Flycatcher | ABPAE36010 | none | none | SSC | - | 3211465 | Yuma East | mapped | Animals - Birds - *Tyrannidae* - *Pyrocephalus rubinus* |
| Animals - Birds | *Pyrocephalus rubinus* | Vermilion Flycatcher | ABPAE36010 | none | none | SSC | - | 3211474 | Laguna Dam | mapped | Animals - Birds - *Tyrannidae* - *Pyrocephalus rubinus* |
| Animals - Birds | *Vireo bellii arizonae* | Arizona Bell's Vireo | ABPBW01111 | none | Endangered | - | - | 3211474 | Laguna Dam | mapped and unprocessed | Animals - Birds - *Vireonidae* - *Vireo bellii arizonae* |
| Animals - Birds | *Vireo bellii arizonae* | Arizona Bell's Vireo | ABPBW01111 | none | Endangered | - | - | 3211465 | Yuma East | mapped and unprocessed | Animals - Birds - *Vireonidae* - *Vireo bellii arizonae* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Birds | *Vireo bellii arizonae* | Arizona Bell's Vireo | ABPBW01111 | none | Endangered | - | - | 3211466 | Yuma West | mapped | Animals - Birds - *Vireonidae - Vireo bellii arizonae* |
| Animals - Birds | *Vireo bellii arizonae* | Arizona Bell's Vireo | ABPBW01111 | none | Endangered | - | - | 3211475 | Bard | mapped | Animals - Birds - *Vireonidae - Vireo bellii arizonae* |
| Animals - Birds | *Vireo bellii arizonae* | Arizona Bell's Vireo | ABPBW01111 | none | Endangered | - | - | 3211484 | Imperial Reservoir | mapped and unprocessed | Animals - Birds - *Vireonidae - Vireo bellii arizonae* |
| Animals - Birds | *Vireo bellii arizonae* | Arizona Bell's Vireo | ABPBW01111 | none | Endangered | - | - | 3211485 | Little Picacho Peak | mapped and unprocessed | Animals - Birds - *Vireonidae - Vireo bellii arizonae* |
| Animals - Fish | *Xyrauchen texanus* | Razorback Sucker | AFCJC11010 | Endangered | Endangered | FP | - | 3211484 | Imperial Reservoir | mapped | *Animals - Fish - Catostomidae - Xyrauchen texanus* |
| Animals - Fish | *Xyrauchen texanus* | Razorback Sucker | AFCJC11010 | Endangered | Endangered | FP | - | 3211475 | Bard | mapped | *Animals - Fish - Catostomidae - Xyrauchen texanus* |
| Animals - Fish | *Xyrauchen texanus* | Razorback Sucker | AFCJC11010 | Endangered | Endangered | FP | - | 3211474 | Laguna Dam | mapped | *Animals - Fish - Catostomidae - Xyrauchen texanus* |
| Animals - Fish | *Ptychocheilus lucius* | Colorado Pikeminnow | AFCJB35020 | Endangered | Endangered | FP | - | 3211474 | Laguna Dam | mapped | *Animals - Fish - Cyprinidae - Ptychocheilus lucius* |
| Animals - Fish | *Ptychocheilus lucius* | Colorado Pikeminnow | AFCJB35020 | Endangered | Endangered | FP | - | 3211475 | Bard | mapped | *Animals - Fish - Cyprinidae - Ptychocheilus lucius* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Mammals | *Ovis canadensis nelsoni* | Desert Bighorn Sheep | AMALE04013 | none | none | FP | - | 3211486 | Picacho Peak | mapped and unprocessed | Animals - Mammals - *Bovidae - Ovis canadensis nelsoni* |
| Animals - Mammals | *Neotoma albigula venusta* | Colorado Valley Woodrat | AMAFF08031 | none | none | - | - | 3211484 | Imperial Reservoir | mapped | Animals - Mammals - *Muridae - Neotoma albigula venusta* |
| Animals - Mammals | *Neotoma albigula venusta* | Colorado Valley Woodrat | AMAFF08031 | none | none | - | - | 3211485 | Little Picacho Peak | mapped | Animals - Mammals - *Muridae - Neotoma albigula venusta* |
| Animals - Mammals | *Neotoma albigula venusta* | Colorado Valley Woodrat | AMAFF08031 | none | none | - | - | 3211475 | Bard | mapped | Animals - Mammals - *Muridae - Neotoma albigula venusta* |
| Animals - Mammals | *Neotoma albigula venusta* | Colorado Valley Woodrat | AMAFF08031 | none | none | - | - | 3211466 | Yuma West | mapped | Animals - Mammals - *Muridae - Neotoma albigula venusta* |
| Animals - Mammals | *Sigmodon hispidus eremicus* | Yuma Hispid Cotton Rat | AMAFF07013 | none | none | SSC | - | 3211474 | Laguna Dam | mapped | Animals - Mammals - *Muridae - Sigmodon hispidus eremicus* |
| Animals - Mammals | *Sigmodon hispidus eremicus* | Yuma Hispid Cotton Rat | AMAFF07013 | none | none | SSC | - | 3211466 | Yuma West | mapped | Animals - Mammals - *Muridae - Sigmodon hispidus eremicus* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Mammals | *Sigmodon hispidus eremicus* | Yuma Hispid Cotton Rat | AMAFF07013 | none | none | SSC | - | 3211465 | Yuma East | mapped and unprocessed | Animals - Mammals - *Muridae - Sigmodon hispidus eremicus* |
| Animals - Mammals | *Sigmodon hispidus eremicus* | Yuma Hispid Cotton Rat | AMAFF07013 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Mammals - *Muridae - Sigmodon hispidus eremicus* |
| Animals - Mammals | *Sigmodon hispidus eremicus* | Yuma Hispid Cotton Rat | AMAFF07013 | none | none | SSC | - | 3211485 | Little Picacho Peak | mapped | Animals - Mammals - *Muridae - Sigmodon hispidus eremicus* |
| Animals - Mammals | *Taxidea taxus* | American Badger | AMAJF04010 | none | none | SSC | - | 3211485 | Little Picacho Peak | mapped | Animals - Mammals - *Mustelidae - Taxidea taxus* |
| Animals - Mammals | *Taxidea taxus* | American Badger | AMAJF04010 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped | Animals - Mammals - *Mustelidae - Taxidea taxus* |
| Animals - Mammals | *Taxidea taxus* | American Badger | AMAJF04010 | none | none | SSC | - | 3211476 | Araz | mapped | Animals - Mammals - *Mustelidae - Taxidea taxus* |
| Animals - Mammals | *Taxidea taxus* | American Badger | AMAJF04010 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Mammals - *Mustelidae - Taxidea taxus* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Mammals | *Macrotus californicus* | California Leaf-Nosed Bat | AMACB01010 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Mammals - *Phyllostomidae - Macrotus californicus* |
| Animals - Mammals | *Macrotus californicus* | California Leaf-Nosed Bat | AMACB01010 | none | none | SSC | - | 3211484 | Imperial Reservoir | unprocessed | Animals - Mammals - *Phyllostomidae - Macrotus californicus* |
| Animals - Mammals | *Corynorhinus townsendii* | Townsend's Big-Eared Bat | AMACC08010 | none | Candidate Threatened | SSC | - | 3211484 | Imperial Reservoir | mapped | Animals - Mammals - *Vespertilionidae - Corynorhinus townsendii* |
| Animals - Mammals | *Corynorhinus townsendii* | Townsend's Big-Eared Bat | AMACC08010 | none | Candidate Threatened | SSC | - | 3211485 | Little Picacho Peak | mapped | Animals - Mammals - *Vespertilionidae - Corynorhinus townsendii* |
| Animals - Mammals | *Corynorhinus townsendii* | Townsend's Big-Eared Bat | AMACC08010 | none | Candidate Threatened | SSC | - | 3211486 | Picacho Peak | mapped | Animals - Mammals - *Vespertilionidae - Corynorhinus townsendii* |
| Animals - Mammals | *Corynorhinus townsendii* | Townsend's Big-Eared Bat | AMACC08010 | none | Candidate Threatened | SSC | - | 3211475 | Bard | mapped | Animals - Mammals - *Vespertilionidae - Corynorhinus townsendii* |
| Animals - Mammals | *Corynorhinus townsendii* | Townsend's Big-Eared Bat | AMACC08010 | none | Candidate Threatened | SSC | - | 3211466 | Yuma West | mapped | Animals - Mammals - *Vespertilionidae - Corynorhinus townsendii* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Mammals | *Corynorhinus townsendii* | Townsend's Big-Eared Bat | AMACC08010 | none | Candidate Threatened | SSC | - | 3211465 | Yuma East | mapped | Animals - Mammals - *Vespertilionidae - Corynorhinus townsendii* |
| Animals - Mammals | *Myotis lucifugus* | Little Brown Bat | AMACC01010 | none | none | - | - | 3211475 | Bard | unprocessed | Animals - Mammals - *Vespertilionidae - Myotis lucifugus* |
| Animals - Mammals | *Myotis occultus* | Arizona Myotis | AMACC01160 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Mammals - *Vespertilionidae - Myotis occultus* |
| Animals - Mammals | *Myotis occultus* | Arizona Myotis | AMACC01160 | none | none | SSC | - | 3211465 | Yuma East | mapped | Animals - Mammals - *Vespertilionidae - Myotis occultus* |
| Animals - Mammals | *Myotis yumanensis* | Yuma Myotis | AMACC01020 | none | none | - | - | 3211475 | Bard | mapped | Animals - Mammals - *Vespertilionidae - Myotis yumanensis* |
| Animals - Reptiles | *Heloderma suspectum cinctum* | Banded Gila Monster | ARACE01011 | none | none | SSC | - | 3211484 | Imperial Reservoir | mapped | Animals - Reptiles - *Helodermatidae - Heloderma suspectum cinctum* |
| Animals - Reptiles | *Kinosternon sonoriense* | Sonoran Mud Turtle | ARAAE01040 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Reptiles - *Kinosternidae - Kinosternon sonoriense* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Reptiles | *Kinosternon sonoriense* | Sonoran Mud Turtle | ARAAE01040 | none | none | SSC | - | 3211465 | Yuma East | mapped | Animals - Reptiles - *Kinosternidae - Kinosternon sonoriense* |
| Animals - Reptiles | *Kinosternon sonoriense* | Sonoran Mud Turtle | ARAAE01040 | none | none | SSC | - | 3211474 | Laguna Dam | mapped | Animals - Reptiles - *Kinosternidae - Kinosternon sonoriense* |
| Animals - Reptiles | *Kinosternon sonoriense* | Sonoran Mud Turtle | ARAAE01040 | none | none | SSC | - | 3211466 | Yuma West | mapped | Animals - Reptiles - *Kinosternidae - Kinosternon sonoriense* |
| Animals - Reptiles | *Phrynosoma mcallii* | Flat-Tailed Horned Lizard | ARACF12040 | none | none | SSC | - | 3211466 | Yuma West | mapped | Animals - Reptiles - *Phrynosomatidae - Phrynosoma mcallii* |
| Animals - Reptiles | *Phrynosoma mcallii* | Flat-Tailed Horned Lizard | ARACF12040 | none | none | SSC | - | 3211465 | Yuma East | mapped | Animals - Reptiles - *Phrynosomatidae - Phrynosoma mcallii* |
| Animals - Reptiles | *Phrynosoma mcallii* | Flat-Tailed Horned Lizard | ARACF12040 | none | none | SSC | - | 3211475 | Bard | mapped | Animals - Reptiles - *Phrynosomatidae - Phrynosoma mcallii* |
| Animals - Reptiles | *Phrynosoma mcallii* | Flat-Tailed Horned Lizard | ARACF12040 | none | none | SSC | - | 3211476 | Araz | mapped and unprocessed | Animals - Reptiles - *Phrynosomatidae - Phrynosoma mcallii* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Animals - Reptiles | *Gopherus agassizii* | Desert Tortoise | ARAAF01012 | Threatened | Threatened | - | - | 3211466 | Yuma West | mapped | Animals - Reptiles - *Testudinidae - Gopherus agassizii* |
| Community - Terrestrial | *Sonoran Cottonwood Willow Riparian Forest* | Sonoran Cottonwood Willow Riparian Forest | CTT61810CA | none | none | - | - | 3211466 | Yuma West | mapped | Community - Terrestrial - *Sonoran Cottonwood Willow Riparian Forest* |
| Community - Terrestrial | *Sonoran Cottonwood Willow Riparian Forest* | Sonoran Cottonwood Willow Riparian Forest | CTT61810CA | none | none | - | - | 3211474 | Laguna Dam | mapped | Community - Terrestrial - *Sonoran Cottonwood Willow Riparian Forest* |
| Community - Terrestrial | *Sonoran Cottonwood Willow Riparian Forest* | Sonoran Cottonwood Willow Riparian Forest | CTT61810CA | none | none | - | - | 3211475 | Bard | mapped | Community - Terrestrial - *Sonoran Cottonwood Willow Riparian Forest* |
| Community - Terrestrial | *Sonoran Cottonwood Willow Riparian Forest* | Sonoran Cottonwood Willow Riparian Forest | CTT61810CA | none | none | - | - | 3211484 | Imperial Reservoir | mapped | Community - Terrestrial - *Sonoran Cottonwood Willow Riparian Forest* |
| Community - Terrestrial | *Sonoran Cottonwood Willow Riparian Forest* | Sonoran Cottonwood Willow Riparian Forest | CTT61810CA | none | none | - | - | 3211485 | Little Picacho Peak | mapped | Community - Terrestrial - *Sonoran Cottonwood Willow Riparian Forest* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Plants - Vascular | *Palafoxia arida var. gigantea* | Giant Spanish-Needle | PDAST6T012 | none | none | - | 1B.3 | 3211466 | Yuma West | mapped | Plants - Vascular - *Asteraceae - Palafoxia arida var. gigantea* |
| Plants - Vascular | *Cryptantha holoptera* | Winged Cryptantha | PDBOR0A180 | none | none | - | 4.3 | 3211466 | Yuma West | unprocessed | Plants - Vascular - *Boraginaceae - Cryptantha holoptera* |
| Plants - Vascular | *Cryptantha holoptera* | Winged Cryptantha | PDBOR0A180 | none | none | - | 4.3 | 3211474 | Laguna Dam | unprocessed | Plants - Vascular - *Boraginaceae - Cryptantha holoptera* |
| Plants - Vascular | *Cryptantha holoptera* | Winged Cryptantha | PDBOR0A180 | none | none | - | 4.3 | 3211476 | Araz | unprocessed | Plants - Vascular - *Boraginaceae - Cryptantha holoptera* |
| Plants - Vascular | *Cryptantha holoptera* | Winged Cryptantha | PDBOR0A180 | none | none | - | 4.3 | 3211485 | Little Picacho Peak | unprocessed | Plants - Vascular - *Boraginaceae - Cryptantha holoptera* |
| Plants - Vascular | *Cryptantha holoptera* | Winged Cryptantha | PDBOR0A180 | none | none | - | 4.3 | 3211484 | Imperial Reservoir | unprocessed | Plants - Vascular - *Boraginaceae - Cryptantha holoptera* |
| Plants - Vascular | *Cryptantha holoptera* | Winged Cryptantha | PDBOR0A180 | none | none | - | 4.3 | 3211486 | Picacho Peak | unprocessed | Plants - Vascular - *Boraginaceae - Cryptantha holoptera* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Plants - Vascular | *Nama stenocarpum* | Mud Nama | PDHYD0A0H0 | none | none | - | 2B.2 | 3211466 | Yuma West | mapped | Plants - Vascular - *Boraginaceae - Nama stenocarpum* |
| Plants - Vascular | *Nama stenocarpum* | Mud Nama | PDHYD0A0H0 | none | none | - | 2B.2 | 3211465 | Yuma East | mapped | Plants - Vascular - *Boraginaceae - Nama stenocarpum* |
| Plants - Vascular | *Carnegiea gigantea* | Saguaro | PDCAC12010 | none | none | - | 2B.2 | 3211474 | Laguna Dam | mapped and unprocessed | Plants - Vascular - *Cactaceae - Carnegiea gigantea* |
| Plants - Vascular | *Carnegiea gigantea* | Saguaro | PDCAC12010 | none | none | - | 2B.2 | 3211475 | Bard | mapped | Plants - Vascular - *Cactaceae - Carnegiea gigantea* |
| Plants - Vascular | *Carnegiea gigantea* | Saguaro | PDCAC12010 | none | none | - | 2B.2 | 3211484 | Imperial Reservoir | mapped | Plants - Vascular - *Cactaceae - Carnegiea gigantea* |
| Plants - Vascular | *Carnegiea gigantea* | Saguaro | PDCAC12010 | none | none | - | 2B.2 | 3211485 | Little Picacho Peak | mapped | Plants - Vascular - *Cactaceae - Carnegiea gigantea* |
| Plants - Vascular | *Koeberlinia spinosa ssp. tenuispina* | Slender-Spined All-Thorn | PDCPP05012 | none | none | - | 2B.2 | 3211486 | Picacho Peak | mapped | Plants - Vascular - *Capparaceae - Koeberlinia spinosa ssp. tenuispina* |
| Plants - Vascular | *Croton wigginsii* | Wiggins' Croton | PDEUP0H140 | none | rare | - | 2B.2 | 3211475 | Bard | mapped | Plants - Vascular - *Euphorbiaceae - Croton wigginsii* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Plants - Vascular | *Croton wigginsii* | Wiggins' Croton | PDEUP0H140 | none | rare | - | 2B.2 | 3211476 | Araz | mapped | Plants - Vascular - *Euphorbiaceae - Croton wigginsii* |
| Plants - Vascular | *Ditaxis claryana* | Glandular Ditaxis | PDEUP080L0 | none | none | - | 2B.2 | 3211486 | Picacho Peak | mapped and unprocessed | Plants - Vascular - *Euphorbiaceae - Ditaxis claryana* |
| Plants - Vascular | *Ditaxis claryana* | Glandular Ditaxis | PDEUP080L0 | none | none | - | 2B.2 | 3211485 | Little Picacho Peak | mapped | Plants - Vascular - *Euphorbiaceae - Ditaxis claryana* |
| Plants - Vascular | *Astragalus insularis var. harwoodii* | Harwood's Milk-Vetch | PDFAB0F491 | none | none | - | 2B.2 | 3211476 | Araz | mapped | Plants - Vascular - *Fabaceae - Astragalus insularis var. harwoodii* |
| Plants - Vascular | *Astragalus insularis var. harwoodii* | Harwood's Milk-Vetch | PDFAB0F491 | none | none | - | 2B.2 | 3211466 | Yuma West | mapped | Plants - Vascular - *Fabaceae - Astragalus insularis var. harwoodii* |
| Plants - Vascular | *Calliandra eriophylla* | Pink Fairy-Duster | PDFAB0N040 | none | none | - | 2B.3 | 3211486 | Picacho Peak | mapped | Plants - Vascular - *Fabaceae - Calliandra eriophylla* |
| Plants - Vascular | *Juncus acutus ssp. leopoldii* | Southwestern Spiny Rush | PMJUN01051 | none | none | - | 4.2 | 3211484 | Imperial Reservoir | unprocessed | Plants - Vascular - *Juncaceae - Juncus acutus ssp. leopoldii* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Plants - Vascular | *Horsfordia newberryi* | Newberry's Velvet-Mallow | PDMAL0J020 | none | none | - | 4.3 | 3211486 | Picacho Peak | unprocessed | Plants - Vascular - *Malvaceae - Horsfordia newberryi* |
| Plants - Vascular | *Digitaria californica var. californica* | Arizona Cottontop | PMPOA27051 | none | none | - | 2B.3 | 3211475 | Bard | mapped | Plants - Vascular - *Poaceae - Digitaria californica var. californica* |
| Plants - Vascular | *Panicum hirticaule ssp. hirticaule* | Roughstalk Witch Grass | PMPOA4K170 | none | none | - | 2B.1 | 3211466 | Yuma West | mapped | Plants - Vascular - *Poaceae - Panicum hirticaule ssp. hirticaule* |
| Plants - Vascular | *Panicum hirticaule ssp. hirticaule* | Roughstalk Witch Grass | PMPOA4K170 | none | none | - | 2B.1 | 3211465 | Yuma East | mapped | Plants - Vascular - *Poaceae - Panicum hirticaule ssp. hirticaule* |
| Plants - Vascular | *Colubrina californica* | Las Animas Colubrina | PDRHA05030 | none | none | - | 2B.3 | 3211486 | Picacho Peak | mapped | Plants - Vascular - *Rhamnaceae - Colubrina californica* |
| Plants - Vascular | *Colubrina californica* | Las Animas Colubrina | PDRHA05030 | none | none | - | 2B.3 | 3211485 | Little Picacho Peak | mapped | Plants - Vascular - *Rhamnaceae - Colubrina californica* |
| Plants - Vascular | *Condalia globosa var. pubescens* | Spiny Abrojo | PDRHA06031 | none | none | - | 4.2 | 3211485 | Little Picacho Peak | unprocessed | Plants - Vascular - *Rhamnaceae - Condalia globosa var. pubescens* |

| Element Type | Scientific Name | Common Name | Element Code | Federal Status | State Status | CDFW Status | CA Rare Plant Rank | Quad Code | Quad Name | Data Status | Taxonomic Sort |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Plants - Vascular | *Condalia globosa var. pubescens* | Spiny Abrojo | PDRHA06031 | none | none | - | 4.2 | 3211486 | Picacho Peak | unprocessed | Plants - Vascular - *Rhamnaceae - Condalia globosa var. pubescens* |
| Plants - Vascular | *Condalia globosa var. pubescens* | Spiny Abrojo | PDRHA06031 | none | none | - | 4.2 | 3211475 | Bard | unprocessed | Plants - Vascular - *Rhamnaceae - Condalia globosa var. pubescens* |
| Plants - Vascular | *Penstemon pseudospectabilis ssp. pseudospectabilis* | Desert Beardtongue | PDSCR1L562 | none | none | - | 2B.2 | 3211475 | Bard | mapped | Plants - Vascular - *Scrophulariaceae - Penstemon pseudospectabilis ssp. pseudospectabilis* |
| Plants - Vascular | *Penstemon pseudospectabilis ssp. pseudospectabilis* | Desert Beardtongue | PDSCR1L562 | none | none | - | 2B.2 | 3211486 | Picacho Peak | mapped | Plants - Vascular - *Scrophulariaceae - Penstemon pseudospectabilis ssp. pseudospectabilis* |

# APPENDIX B. LISTED, PROPOSED SPECIES, AND CRITICAL HABITAT POTENTIALLY OCCURRING OR KNOWN TO OCCUR IN THE PROJECT REGION EXCLUDED FROM FURTHER CONSIDERATION

**Table B.1. Listed, Proposed Species, and Critical Habitat Potentially Occurring or Known to Occur in the Project Region Excluded from Further Consideration**

| Scientific Name | Common Name | Status (FWS/State/CNPS) | Habitat[a] | Exclusion Justification |
|---|---|---|---|---|
| **Birds** | | | | |
| *Accipiter cooperii* | Cooper's Hawk | -/WL/- | low-to-mid-elevation riparian areas, woodlands, and forests | no suitable riparian, woodland, or forest habitat present in study area |
| *Aquila chrysaetos* | Golden Eagle | -/FP,WL/- | open habitats, including tundra, grasslands and desert; nesting cliffs, with typical heights of at least 30 m (100 feet), are normally directly adjacent to foraging habitat of desert grasslands or desert scrub | no suitable cliff habitat for nesting or open desert habitat for foraging present in study area |
| *Chaetura vauxi* | Vaux's Swift | -/SSC/- | Redwood and Douglas-fir habitats with nest-sites in large hollow trees and snags, especially tall, burned-out stubs; a fairly common migrant throughout most of the state in April and May and August and September; a few individuals winter irregularly in southern coastal lowlands | no suitable habitat present in study area. may occur in the vicinity of the study area as a transient during migration, but not in the study area itself |
| *Coccyzus americanus occidentalis* | Western Yellow-billed Cuckoo | PT/E/- | dense cottonwood/willow stands in areas of standing water | no suitable riparian habitat present in study area |
| *Colaptes chrysoides* | Gilded Flicker | -/E/- | upper and lower Sonoran Desert with Saguaros | no suitable Sonoran desert habitat present in study area |
| *Contopus cooperi* | Olive-sided Flycatcher | -/SSC/- | forest and woodland habitats below 2,800 m (9,000 feet) throughout California exclusive of the deserts, the central valley, and other lowland valleys and basins; preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine; arrives from South American wintering areas in mid-April (southern California) to early May (northern California), with transient individuals still moving north in early June; departs breeding areas in August; most have left the state by early October | no suitable habitat present in study area. may occur in the vicinity of the study area as a transient during migration, but not in the study area itself |

| Scientific Name | Common Name | Status (FWS/State/CNPS) | Habitat[a] | Exclusion Justification |
|---|---|---|---|---|
| *Dendroica petechia brewsteri* | Yellow Warbler | -/SSC/- | riparian areas with cottonwoods, willows, and alder | no suitable riparian habitat present in study area |
| *Dendroica petechia sonorana* | Sonoran Yellow Warbler | -/SSC/- | riparian areas including tamarisk thickets | no suitable riparian or tamarisk thicket habitat present in study area |
| *Empidonax traillii extimus* | Southwestern Willow Flycatcher | E/E/- | dense and layered willow, cottonwood, and tamarisk thickets and woodland along streams and rivers | no suitable riparian or tamarisk thicket habitat present in study area |
| *Haliaeetus leucocephalus* | Bald Eagle | -/E,FP/- | open areas, forest edges, and mountains near large lakes and rivers; requires tall trees for nesting | no suitable habitat in the vicinity of large waterbodies present in study area |
| *Icteria virens* | Yellow-breasted Chat | -/SSC/- | riparian thickets with willows and other brushy vegetation near watercourses | no suitable riparian habitat present in study area |
| *Ixobrychus exilis* | Least Bittern | -/SSC/- | densely vegetated emergent wetlands near sources of fresh water and desert riparian areas including tamarisk thickets | no suitable riparian or tamarisk thicket habitat present in study area |
| *Kinosternon sonoriense* | Sonoran Mud Turtle | -/SSC/- | rivers, streams, stock tanks, ponds, and reservoirs | no suitable aquatic habitat present in study area |
| *Laterallus jamaicensis coturniculus* | California Black Rail | -/T,FP/- | tidal salt marshes. Also occurs in brackish and fresh-water marshes, all at low elevations | no suitable marsh habitat present in study area |
| *Melanerpes uropygialis* | Gila Woodpecker | -/E/- | desert riparian and wash habitats. Cottonwoods and other desert riparian trees, shade trees, and date palms supply cover | no suitable riparian or wash habitat present in study area |
| *Micrathene whitneyi* | Elf Owl | -/E/- | desert riparian areas with cottonwood, sycamore, willow, or mesquite; absent from habitats dominated by tamarisk | no suitable riparian habitat present in study area |
| *Mycteria americana* | Wood Stork | -/SSC/- | breeds in Mexico, Central and South America, and along the southeastern U.S. coast; this species is a locally common post-breeding visitor to California, with several hundred birds occurring in Imperial County from late May to October in marshes at the south end of the Salton Sea | no suitable marsh habitat present in study area. may occur in the vicinity of the study area as a transient during migration, but not in the study area itself |
| *Myiarchus tyrannulus* | Brown-crested Flycatcher | -/WL/- | riparian areas with cottonwood, willow, or mesquite; desert scrub and tamarisk thickets often used for foraging | no suitable riparian, tamarisk thicket, or desertscrub habitat present in study area |

| Scientific Name | Common Name | Status (FWS/State/CNPS) | Habitat[a] | Exclusion Justification |
|---|---|---|---|---|
| *Oreothlypis luciae* | Lucy's Warbler | -/SSC/- | desert washes and riparian areas dominated by mesquite; also found in tamarisk and other thickets | no suitable wash, riparian, or tamarisk thicket habitat present in study area |
| *Pandion haliaetus* | Osprey | -/WL/- | riparian areas near large, fish-bearing bodies of water | no suitable riparian habitat near large bodies of water present in study area |
| *Phalacrocorax auritus* | Double-crested Cormorant | -/WL/- | large, open bodies of water including slow-moving rivers, lakes, and reservoirs | no suitable large waterbody habitat present in study area. |
| *Piranga rubra* | Summer Tanager | -/SSC/- | desert riparian areas dominated by cottonwoods and willows | no suitable riparian habitat present in study area |
| *Rallus longirostris yumanensis* | Yuma Clapper Rail | E/T,FP/- | freshwater and brackish marshes. Prefers dense cattails, bulrushes, and other aquatic vegetation; nests in riverine wetlands near upland, in shallow sites dominated by mature vegetation, often in the base of a shrub; prefers denser cover in winter than in summer | no suitable marsh habitat present in study area |
| *Toxostoma crissale* | Crissal Thrasher | -/SSC/- | dense vegetation along streams and washes with mesquite, willows, and arrowweed | no suitable riparian or desert wash habitat present in study area |
| *Toxostoma lecontei* | Le Conte's Thrasher | -/SSC/- | arid and sparsely vegetated desertscrub with saltbush and creosote scrub | no suitable desertscrub habitat present in study area |
| *Vireo bellii arizonae* | Arizona Bell's Vireo | -/E/- | riparian areas along the Colorado River from Needles to Blythe | no suitable riparian habitat present in study area |
| *Vireo bellii pusillus* | Least Bell's Vireo | E/E/- | riparian areas with willows | no suitable riparian habitat present in study area |
| **Fish** | | | | |
| *Cyprinodon macularius* | Desert Pupfish | E/E/- | shallow waters of springs, small streams, and marshes. Often associated with areas of soft substrates and clear water | no suitable aquatic habitat present in study area |
| *Ptychocheilus lucius* | Colorado Pikeminnow | E/E,FP/- | large-to-medium-sized rivers (adults) and backwaters (juveniles) | no suitable aquatic habitat present in study area |
| *Xyrauchen texanus* | Razorback Sucker | E/E,FP/- | large to medium-sized rivers including backwaters | no suitable aquatic habitat present in study area |
| **Invertebrates** | | | | |

| Scientific Name | Common Name | Status (FWS/State/CNPS) | Habitat[a] | Exclusion Justification |
|---|---|---|---|---|
| *Euphydryas editha quino* | Quino Checkerspot Butterfly | E/-/- | coastal sage scrub, open chaparral, juniper woodland, and grassland | no suitable scrub, chaparral, woodland, or grassland habitat present in study area |
| **Mammals** | | | | |
| *Macrotus californicus* | California Leaf-nosed Bat | -/SSC/- | desert riparian, wash, scrub, alkali scrub, and succulent shrub | no suitable riparian, wash, or scrub habitat present in study area |
| *Myotis occultus* | Arizona Myotis | -/SSC/- | desert riparian areas | no suitable riparian habitat present in study area |
| *Ovis canadensis nelsoni* | Peninsular Bighorn Sheep | E/T,FP/- | arid, precipitous terrain with rocky ridges, slopes, cliffs, and rugged canyons; typical vegetation consists of low shrubs, grasses, and forbs | no suitable rocky cliff habitat present in study area |
| *Taxidea taxus* | American Badger | -/SSC/- | drier open stages of most shrub, forest, and herbaceous habitats, with friable soils | no suitable habitat present in study area and no individuals of or burrows attributable to this species observed during surveys |
| **Plants** | | | | |
| *Astragalus insularis var. harwoodii* | Harwood's Milkvetch | -/-/2B.2 | sandy or gravelly areas in Mojavean desertscrub including dunes | no suitable Mojavean desertscrub or dune habitat present in study area and no individuals of this species observed during surveys |
| *Astragalus magdalenae v. peirsonii* | Peirson's Milkvetch | T/E/1B.2 | desert dunes | no suitable dune habitat present in study area and no individuals of this species observed during surveys |
| *Calliandra eriophylla* | Pink Fairy Duster | -/-/2B.3 | sandy or rocky Sonoran desertscrub | no suitable Sonoran desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Carnegiea gigantea* | Saguaro | -/-/2B.2 | rocky Sonoran desertscrub | no suitable Sonoran desertscrub habitat present in study area and no individuals of this species observed during surveys |

| Scientific Name | Common Name | Status (FWS/State/CNPS) | Habitat[a] | Exclusion Justification |
|---|---|---|---|---|
| *Colubrina californica* | Las Animas Colubrina | -/-/2B.3 | Mojavean and Sonoran desertscrub | no suitable desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Condalia globosa var. pubescens* | Spiny Abrojo | -/-/4.2 | Sonoran desertscrub | no suitable desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Croton wigginsii* | Wiggins' Croton | -/R/2B.2 | sandy Sonoran desertscrub and desert dunes | no suitable desertscrub or dune habitat present in study area and no individuals of this species observed during surveys |
| *Cryptantha holoptera* | Winged Cryptantha | -/-/2B.3 | Mojavean and Sonoran desertscrub | no suitable desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Digitaria californica v. californica* | Arizona Cottontop | -/-/2B.2 | Mojavean and Sonoran desertscrub | no suitable desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Ditaxis claryana* | Glandular Ditaxis | -/-/2B.3 | sandy Mohavean and Sonoran desertscrub | no suitable desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Horsfordia newberryi* | Newberry's Velvet Mallow | -/-/4.2 | rocky Sonoran desertscrub | no suitable desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Juncus acutus ssp. leopoldii* | Southwestern Spiny Rush | -/-/2B.2 | mesic coastal dunes, alkaline seeps, and coastal salt marshes and swamps | no suitable dune or marsh habitat present in study area and no individuals of this species observed during surveys |

| Scientific Name | Common Name | Status (FWS/State/CNPS) | Habitat[a] | Exclusion Justification |
|---|---|---|---|---|
| *Koeberlinia spinosa ssp. tenuispina* | Slender-spined Allthorn | -/-/4.3 | riparian woodland and Sonoran desertscrub | no suitable riparian or desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Nama stenocarpum* | Mud Nama | -/-/2B.3 | marshes and swamps on lake margins and riverbanks | no suitable marsh habitat present in study area and no individuals of this species observed during surveys |
| *Palafoxia arida v. gigantea* | Giant Spanish Needle | -/-/2B.2 | desert dunes | no suitable dune habitat present in study area and no individuals of this species observed during surveys |
| *Panicum hirticaule ssp. hirticaule* | Roughstalk Witchgrass | -/-/2B.1 | sandy, silty depressions in desert dunes and Mojavean and Sonoran desertscrub | no suitable dune or desertscrub habitat present in study area and no individuals of this species observed during surveys |
| *Penstemon pseudospectabilis ssp. pseudospectabilis* | Desert Beardtongue | -/-/4.2 | sandy, sometimes rocky, washes in Mojavean and Sonoran desertscrub | no suitable desertscrub habitat present in study area and no individuals of this species observed during surveys |
| **Reptiles** | | | | |
| *Gopherus agassizii* | Mohave Desert Tortoise | T/T/- | valleys, bajadas, and hills in Mojavean and Sonoran desertscrub with sandy loam to rocky soils | no suitable desertscrub habitat present in study area |
| *Heloderma suspectum cinctum* | Banded Gila Monster | -/SSC/- | Mojavean desertscrub, primarily in desert mountain ranges | no suitable desertscrub habitat present in study area |
| *Phrynosoma mcallii* | Flat-tailed Horned Lizard | -/SSC/- | desert and alkali scrub, washes, and succulent shrub areas with fine sand and sparse vegetation | no suitable desertscrub habitat present in study area |

[a]Habitat descriptions from California Department of Fish and Wildlife California Wildlife Habitat Relation System, California Native Plant Society Rare and Endangered Plant Inventory, and Arizona Game and Fish Department Heritage Data Management System online species abstracts and U.S. Fish and Wildlife Service Environmental Conservation Online System species bjoprofiles.

*Key:* FWS = U.S. Fish and Wildlife Service; CNPS = California Native Plant Society; E = Endangered; T = Threatened; C = Candidate; P = Proposed; SSC = Species of Special Concern; R = Rare; FP = Fully Protected; WL = Watchlist; 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere; 2B = Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere; 4 = Plants of Limited Distribution – A Watch List; .1 = Seriously Threatened in California; .2 = Moderately Threatened in California; .3 = Not Very Threatened in California.

# APPENDIX C. PLANT SPECIES OBSERVED

**Table C.1. Plant Species Observed**

| Family | Scientific Name | Common Name | Noxious Weed Rating |
|---|---|---|---|
| Amaranthaceae | *Amaranthus palmeri* | Carelessweed | - |
| Asteraceae | *Ambrosia dumosa* | White Bursage | - |
| Chenopodiaceae | *Atriplex canescens* | Fourwing Saltbush | - |
| Chenopodiaceae | *Chenopodium album* | Lambsquarters | - |
| Boraginaceae | *Cryptantha angustifolia* | Narrow-leaved Popcornflower | - |
| Poaceae | *Cynodon dactylon* | Bermuda Grass | - |
| Onagraceae | *Gaura coccinea* | Tall Gaura | - |
| Malvaceae | *Gossypium hirsutum* | Cotton | - |
| Asteraceae | *Helianthus annum* | Common Sunflower | - |
| Asteraceae | *Lactuca serriola* | Prickly Lettuce | - |
| Malvaceae | *Malva parviflora* | Cheeseweed | - |
| Fabacea | *Medicago sativa* | Alfalfa | - |
| Fabacea | *Parkinsonia aculeata* | Mexican Palo Verde | - |
| Arecaceae | *Phoenix dactylifera* | Date Palm | - |
| Poaceae | *Phragmites australis* | Common Reed | - |
| Asteraceae | *Pluchea sericea* | Arrow Weed | - |
| Portulacaceae | *Portulaca oleraceae* | Portulaca | - |
| Fabacea | *Prosopis glandulosa* | Honey Mesquite | - |
| Chenopodiaceae | *Salsola kali* | Russian Thistle | limited (CIPC) |
| Salviniaceae | *Salvinia molesta* | Kariba Weed | high (CIPC) |
| Poaceae | *Sorghum bicolor* | Sudangrass | - |
| Tamaricaceae | *Tamarix ramosissima* | Salt Cedar | high (CIPC), listed (CDFA) |
| Typhaceae | *Typha latifolia* | Cattail | - |

*Key:* CIPC = California Invasive Plant Coucil, CDFA = California Department of Food and Agriculture.

# APPENDIX D. WILDLIFE SPECIES OBSERVED

**Table D.1. Wildlife Species Observed.**

| Scientific Name | Common Name |
|---|---|
| *Ardea alba* | Great Egret |
| *Callipepla gambellii* | Gambel's Quail |
| *Canis latrans* | Coyote |
| *Columba livia* | Pigeon |
| *Quiscalus neomexicanus* | Grackle |
| *Riparia riparia* | Bank Swallow |
| *Zenaida asiatica* | White-winged Dove |

# APPENDIX E. REPRESENTATIVE SITE PHOTOGRAPHS




**Photo E.1. First Avenue and E Street, view to north.**




**Photo E.2. Arnold Road and First Avenue, view to west.**




**Photo E.3. West end of project corridor on Arnold, view to east.**




**Photo E.4. Reservation Main Drain at Arnold Road, view to south.**




**Photo E.5. Arnold and Picacho Roads, view to east.**




**Photo E.6 Cocopah Canal at Arnold Road, view to north.**




**Photo E.7. Haughtelin and Perez Roads, view to north.**




**Photo E.8. Ross and Fisher Roads, view to west.**




**Photo E.9. Reservation Main Drain at Stalnacker Road, view to north. Note Kariba Weed in canal.**




**Photo E.10.North end of project corridor on Bard Road, view to south.**




**Photo E.11. Cocopah Canal at Picacho Road, view to east.**




**Photo E.12. Pima Canal at Picacho Road, view to east.**

# Appendix E

## Letter from California State Historic Preservation Officer

**OFFICE OF HISTORIC PRESERVATION**
**DEPARTMENT OF PARKS AND RECREATION**
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

February 19, 2015 Reply in Reference To: BIA_2015_0120_001
(BIA# 2014-316)

Catherine Wilson
Acting Deputy Regional Director
Bureau of Indian Affairs, Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

RE: Fort Yuma Quechan Indian Reservation Fiber-Optic Line Project; Imperial County, California.

Dear Ms. Wilson:

Thank you for seeking my consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Indian Affairs (BIA) is seeking my comments regarding the effects that the above named project will have on historic properties.

TDS Telecommunication Corporation (TDS) proposes to install new fiber-optic cable and ten nodes to provide internet service to the communities of Winterhaven, Bard, and the Fort Yuma-Quechan Indian Reservation (Reservation) requiring an easement across Reservation land. This will involve the installation of 8.68 miles of fiber-optic line on Reservation land and 7.75 miles of line within unincorporated Imperial County.

The Area of Potential Effects (APE) consists of a 98-foot wide corridor incorporating all segments of the fiber-optic installation. Trenching to install the fiber optic line will be approximately one to two feet in width to a depth of approximately four feet; therefore the vertical APE for the project will extend to four feet.

In addition to your letter received January 20, 2015, you have submitted *A Class III Cultural Resources Survey for a Proposed Buried Telecommunications Fiber-Optic Line near Winterhaven, in Imperial County, California* (Howell, December 22, 2014) as evidence of your efforts to identify and evaluate historic properties in the project APE.

Archival research included a record search at the South Coastal Information Center in May and June 2014, and the Arizona State Museum's AZSITE online database on April 15, 2014. Five previously recorded sites were determined to lie within the APE for the project:

| | Resource Designation | Resource Description | NRHP Eligibility | Project Effect |
|---|---|---|---|---|
| 1 | CA-IMP-3424 | Southern Pacific Railroad | Eligible; Criteria A | No Adverse Effect |
| 2 | CA-IMP-6824 | Reservation Main Drain Canal | Eligible; Criteria A | No Adverse Effect |
| 3 | CA-IMP-6830 | Yuma Main Canal | Eligible; Criteria A | No Adverse Effect |
| 4 | CA-IMP-6832 | Cocopah Canal | Eligible; Criteria A | No Adverse Effect |
| 5 | CA-IMP-7158 | Pilot Knob Tap Drop 4 16 kV Line | Eligible; Criteria A | No Adverse Effect |

Native American consultation included contact with the Tribal Historic Preservation Officer, Arlene Kingery, on May 16, 2014 regarding knowledge of sites of religious or cultural significance to the tribe in the project area. No such properties were identified through consultation efforts.

A pedestrian surface survey was conducted of the APE utilizing transects spaced fifteen meters apart on July 15 and 16, 2014. One built resource was identified and recorded:

| | Resource Designation | Resource Description | NRHP Eligibility | Project Effect |
|---|---|---|---|---|
| 6 | P-13-014813 | Walapai Canal | Eligible; | No Adverse Effect |

Ten isolated finds were also observed within the APE. Six of these isolates are lithic fragments that could only be tentatively identified as flaked stone. All were found in disturbed contexts. Three isolates were possible historic glass; one of which was associated with a fragment of white earthenware. One isolated occurrence was a roadside memorial shrine recorded with the intent to document its location for avoidance.

The BIA has recommended the six resources listed in the tables above as eligible to the NRHP. The ten isolated finds do not qualify as historic properties under Section 106 of the NHPA. Pursuant to 36 CFR §800.5(b) the BIA has determined a *Finding of No Adverse Effect* to historical properties by the proposed project.

I agree the ten isolated finds described do not meet the qualifications as historic properties. Because formal evaluations were not provided for the above listed built environment resources, I cannot make a determination of eligibility to the NRHP. I suggest the resources be assumed eligible to the NRHP for purposes of this project only. Because the project will have no adverse effect to these resources I then concur with the *Finding of No Adverse Effect* for the project. After clarification of information obtained through phone contact, I also concur identification efforts are sufficient and I also have no objections to the delineation of the APE, as depicted in the supporting documentation. For future reference I wish to clarify that canals are considered built resources and not archaeological resources.

Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the BIA may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns, please contact Associate State Archaeologist, Kim Tanksley at (916) 445-7035 or by email at kim.tanksley@parks.ca.gov. Any questions concerning the built environment should be directed to State Historian, Kathleen Forrest at (916)445-7022 or by email at kathleen.forest@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, PhD
State Historic Preservation Officer

# Appendix F

## Allands Data and Research, Inc., Report

Allands

14947 W. Piccadilly Road, Goodyear, AZ 85395 • Phone: 623-535-7800 • Fax: 623-535-7900
www.allands.com • e-mail: sharon@allands.com

Historical Title and Environmental Research

# REGULATORY DATABASE (ASTM) SEARCH

YOUR FILE NO:

ALLANDS FILE NO: 2015-04-012D

DATE OF REPORT: April 12, 2015

ALLANDS hereby reports the search results of Federal and State Databases according to ASTM standards for Phase I Environmental Site Assessments E 1527-13. Allands is not responsible for errors in the available records. The total liability is limited to the fee paid for this report. This is a confidential, privileged and protected document for the use of Tierra Right of Way Services.

1. The land referred to in this report is located in Imperial County, California, described as follows:

1/10th of a mile Corridor Study along power line corridor and existing DSA and proposed nodes along Streets and Avenues located on the Fort Yuma - Quechan Indian Reservation and in the vicinity of the towns of Bard and Winterhaven, California, being in Sections 13, 14, 21 to 24, inclusive, 26 & 27, Township 16 South, Range 22East; Sections 32 & 33, Township 15 South, Range 23 East; and in Sections 4 to 9, inclusive and 16 to 19, inclusive, Township 16 South, Range 23 East, San Bernardino Meridian and Base Line.

# REGULATORY DATABASE SEARCH SUMMARY

| Database | Date of Database | Approximate Minimum Search Distance (miles) | Reported Facilities |
|---|---|---|---|
| **Standard Federal ASTM Environmental Record Sources** | | | |
| NPL (National Priorities List) / Proposed NPL / DOD (Department of Defense Sites) | 04/15 | Within corridor boundaries | 0 |
| Delisted National Priorities List | 04/15 | Within corridor boundaries | 0 |
| CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System)/No Further Remedial Action Planned (NFRAP) | 11/13 | Within corridor boundaries | 0 |
| RCRA (Resource Conservation and Recovery Act) Large and Small Quantity Generators | 04/15 | Within corridor boundaries | 0 |
| RCRA – CORRACTS TSDFs (Corrective Action Treatment, Storage, and Disposal Facilities) | 04/15 | Within corridor boundaries | 0 |
| RCRA – Non-CORRACTS TSDFs | 04/15 | Within corridor boundaries | 0 |
| ERNS (Emergency Response Notification System) | 04/15 | Within corridor boundaries | 0 |
| **Standard State ASTM Environmental Record Sources** | | | |
| State Priority List | 04/15 | Within corridor boundaries | 0 |
| California Hazardous Materials Incident System (CHMIRS) | 02/05 | Within corridor boundaries | 0 |
| Solid Waste Facilities/Landfill Sites | 04/15 | Within corridor boundaries | 0 |
| CalSites / Envirostor | 04/15 | Within corridor boundaries | 0 |
| Registered USTs (Underground Storage Tanks)<br>LUSTs (Leaking Underground Storage Tanks) Incident Reports (includes Tribal Records) | 04/15 | Within corridor boundaries | 3 |
| **Additional Environmental Record Sources** | | | |
| RCRA Compliance Facilities | 04/15 | Within corridor boundaries | 0 |
| Topographical / Aerial Maps | See text | Within corridor boundaries | 2 |

## Standard Federal ASTM Environmental Record Sources

## SUPERFUND NATIONAL PRIORITIES LIST (NPL)

Under Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act the Environmental Protection Agency established a National Priorities List (NPL) of Superfund sites. In addition, Proposed NPL and DOD (Department of Defense) Sites are researched in the section. These databases are provided by the EPA, dated April, 2015, and searched to identify all NPL/Proposed NPL/ DOD sites within corridor boundaries.

No National Priorities List (NPL) / Proposed NPL / DOD Sites were found located within corridor boundaries.

## DELISTED NATIONAL PRIORITIES LIST

Site may be delisted from the National Priorities List where no further response is appropriate. This database is provided by the Environmental Protection Agency, dated April, 2015, and searched to identify all Delisted NPL Sites within corridor boundaries.

No Delisted National Priorities List (NPL) Sites were found located within corridor boundaries.

## FEDERAL CERCLIS / NFRAP LIST

The CERCLIS list contains sites which are either proposed to or on the NPL and sites which are in the screening and assessment phase for possible inclusion on the NPL. Those sites on the NFRAP list have no further remedial action planned. This database is provided by EPA, dated November, 2013, and searched for facilities within corridor boundaries.

No CERCLIS / NFRAP facilities were found located within corridor boundaries.

## RESOURCE CONSERVATION AND RECOVERY ACT FACILITIES (RCRA)

Under RCRA the Environmental Protection Agency compiles a database of facilities that are involved in the generation of hazardous materials. This database is from the EPA, dated April, 2015 and checked for Federal RCRA facilities located within corridor boundaries.

No Federal RCRA handlers were found located within corridor boundaries.

## CORRACTS FACILITIES

Under RCRA the Environmental Protection Agency compiles a database of Corrective Action Sites, sites with known contamination. Also known as the RCRA CORRACTS List, this is a list maintained by the EPA of RCRA sites at which contamination has been discovered and where some level of corrective clean-up activity has been undertaken. For example, a site may have been on the RCRA TSD or the RCRA Generators site list, and was placed on the CORRACTS list once contamination was discovered and remediation was underway. This database is dated April, 2015, and checked for facilities which occurred within corridor boundaries.

No Facilities were found which occurred within corridor boundaries.

## TSD FACILITIES

Under RCRA the Environmental Protection Agency compiles a database of facilities that are involved in the transportation, treatment, storage, or disposal of hazardous materials. This database is from the EPA, dated April, 2015, and checked for Facilities which occurred within corridor boundaries.

No TSD Facilities were found which occurred within corridor boundaries.

## FEDERAL EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) LIST

The ERNS list is a national database used to collect information on reported releases of oil and hazardous substances. This database is provided by the National Response Center and the EPA through the Right of Know Net by OMB Watch and Unison Institute from 1983 to April, 2015, and checked for incidents located within corridor boundaries.

No incidents were found located within corridor boundaries.

## Standard State ASTM Environmental Record Sources

## STATE PRIORITY LIST

The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The database, referred to as "CalSites," is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances. This list includes CALSITE Active Workplan (AWP); Sites that are not AWP (Annual workplan) are not actively being remediated, but are stilled being tracked on the State Equivalent CERCLIS List (SCL)

No Sites were found located within corridor boundaries.

## CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM (CHMIRS)

The California Office of Emergency Services documents spills and incidents involving hazardous materials that are reported to the unit prior to the state of California adopting the National Incident Management System. This database is dated February, 2005 and checked for hazardous material incidents which occurred within corridor boundaries.

Property within corridor boundaries was not found on this list.

# SOLID WASTE INFORMATION SYSTEM (SWIS)

The Solid Waste Information System (SWIS) database contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

For each facility, the database contains information about location, owner, operator, facility type, regulatory and operational status, authorized waste types, local enforcement agency and inspection and enforcement records.

The data in the facility database is continuously updated and reviewed April, 2015 for facilities located within corridor boundaries.

No facilities were found located within corridor boundaries.

## SITE MITIGATION AND BROWNFIELDS REUSE PROGRAM DATABASE (CALSITES) / DEPARTMENT OF TOXIC SUBSTANCES CONTROL (ENVIROSTOR)

The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances.. The Site Mitigation and Brownfields Reuse Program Database was known as CalSites. The Voluntary Cleanup Program (VCP) category contains only those properties undergoing voluntary investigation and/or cleanup and which are listed in the Voluntary Cleanup Program. DTSC recently replaced the “CalSites” database with a new database of hazardous substance release sites, known as the “EnviroStor” database. This database was reviewed April 2015, for facilities located within corridor boundaries.

No facilities were found located within corridor boundaries.

## UNDERGROUND STORAGE TANKS
## (UST, AST & LUST)

Owners of USTs are required to report any and all releases of tank contents for which an ongoing file documenting the nature of contamination and the status of each such incident is maintained. This database is maintained by the State Water Resources Control Board and individual cities, dated April, 2015 and searched for facilities located within corridor boundaries.

| FACILITY | ID | ADDRESS | STATUS |
|---|---|---|---|
| U S A Supersave / Salvador Huerta | T0602500185 | 2115 Winterhaven Drive | Open - Inactive as of 8/27/2014 |
| Ross Corner Store | T0602592922 | 1460 West Ross Road | Completed - Case Closed as of 8/5/2013 |
| Bard / Winterhaven Road Yard | T0602500186 | 1477 Ross Road | Completed - Case Closed as of 2-13-2008 |

**For more information replace "xxx" below with ID from table above**
**http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=xxx**

## Additional Environmental Record Sources

## RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) COMPLIANCE FACILITIES

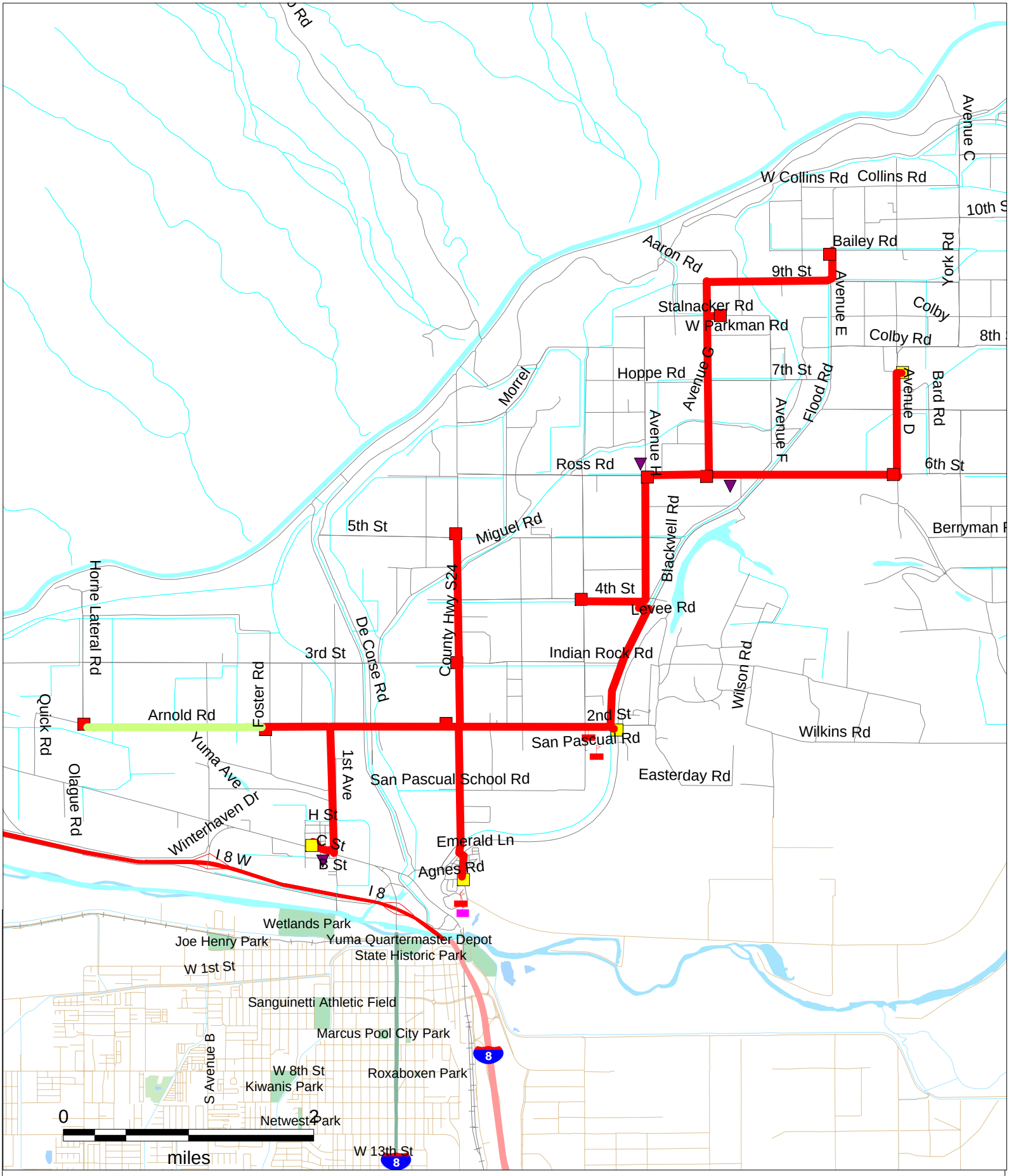
The RCRA Compliance Log lists facilities that have been or presently are under investigation for non-compliance with RCRA regulations. Inclusion of any facility on this list indicates a history of compliance problems and RCRA regulatory violation. This database is from the EPA, dated April, 2015, and searched for compliance facilities within corridor boundaries.

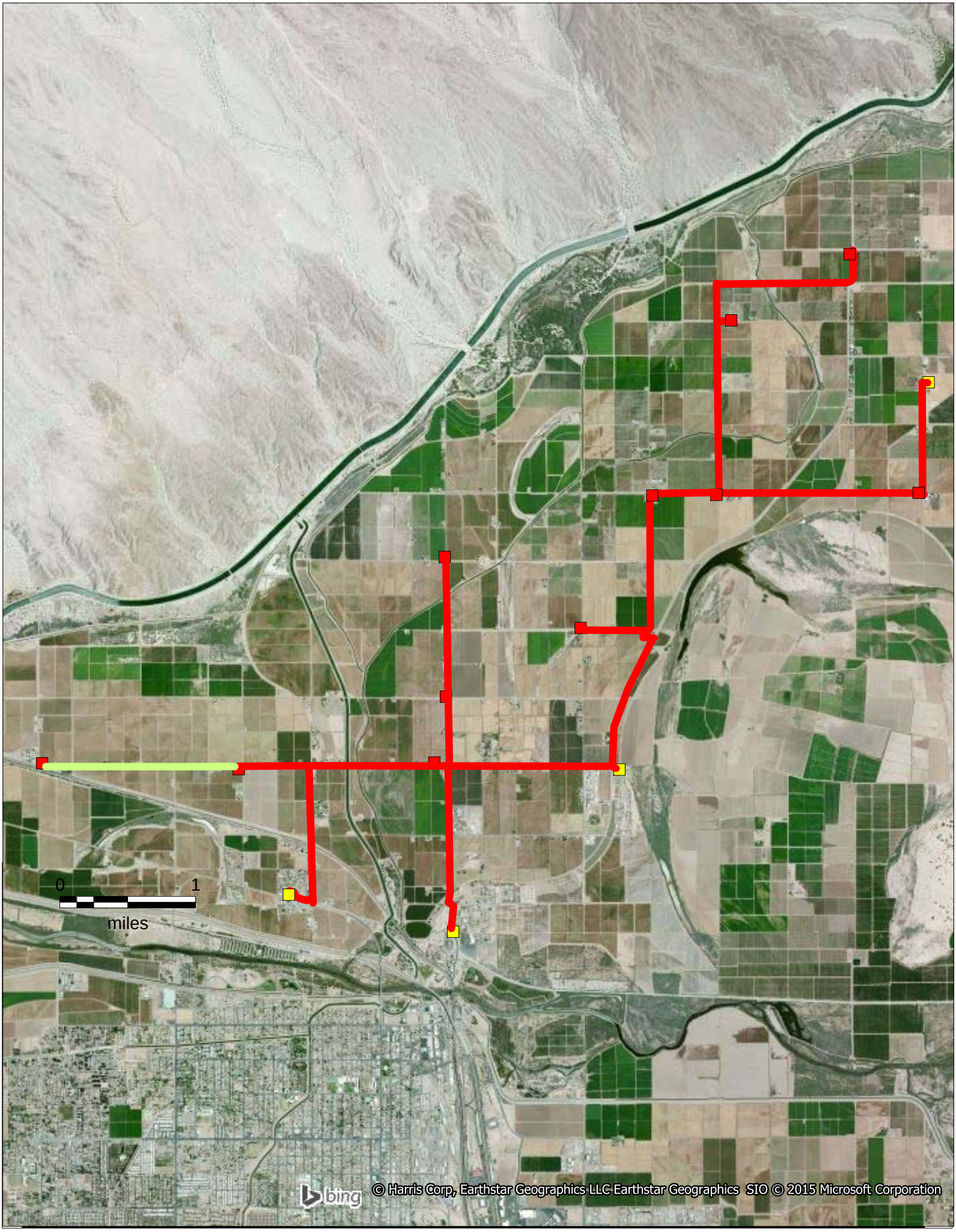
No compliance facilities were found located within corridor boundaries.

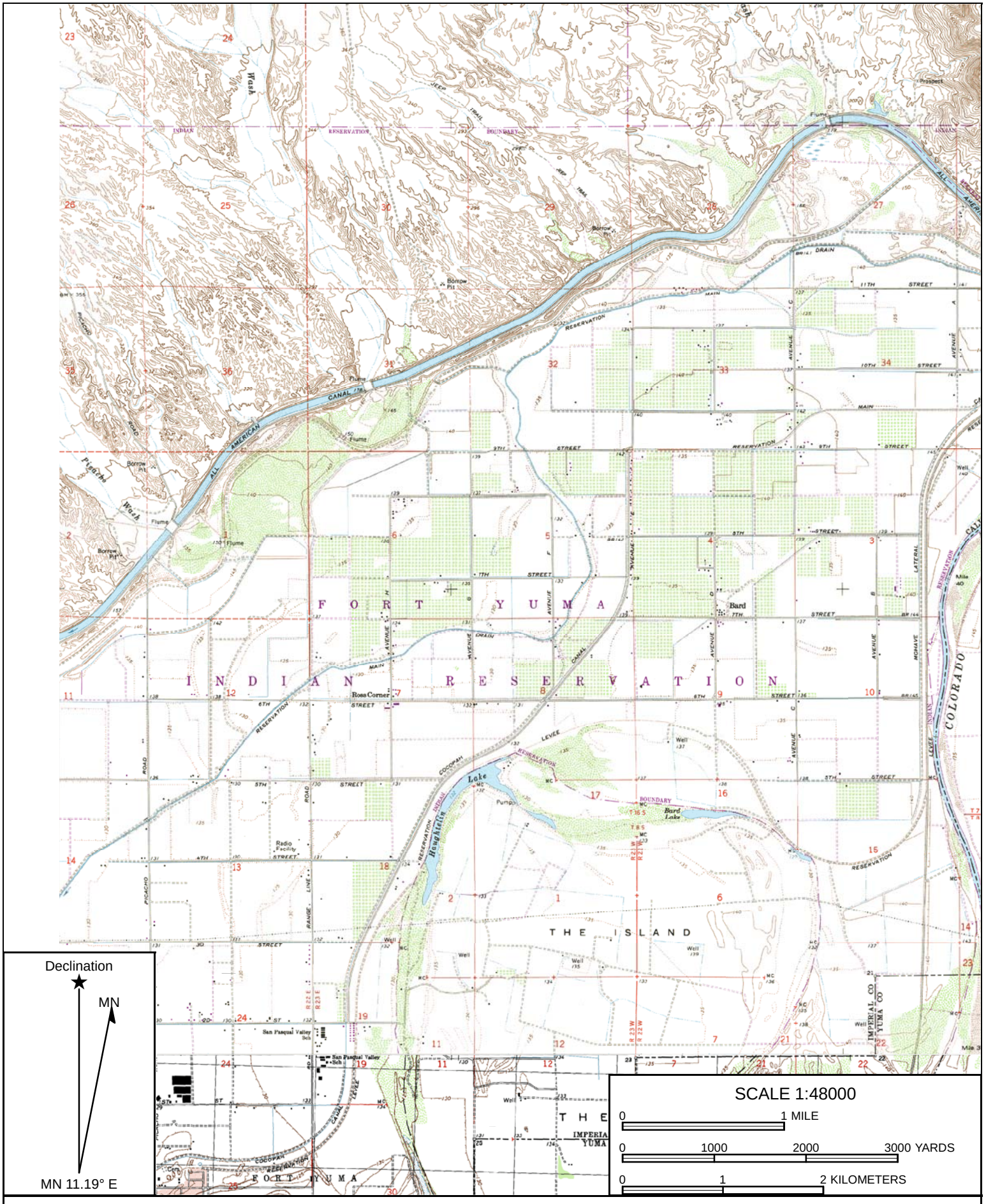
## USGS 7.5 MINUTE TOPOGRAPHICAL MAPS AERIAL PHOTOS

The United States Geological Survey Topographic maps and Aerial Photos are derived from Terrain Navigator Software from Maptech, Inc. (www.maptech.com) and are for informational purposes only.

| NAME | TYPE | DATE |
|---|---|---|
| Bard | Topo | 1965 revised 1979 |
| Bing Aerial | Aerial | 2015 |


W Collins Rd
Collins Rd
Avenue C
10th S
Bailey Rd
Aaron Rd
9th St
York Rd
Avenue E
Stalnacker Rd
W Parkman Rd
Colby
Colby Rd
8th
Hoppe Rd
7th St
Avenue G
Morrel
Avenue H
Avenue F
Flood Rd
Avenue D
Bard Rd
Ross Rd
6th St
5th St
Miguel Rd
Blackwell Rd
Berryman
Horne Lateral Rd
4th St
Levee Rd
County Hwy S24
De Corse Rd
3rd St
Indian Rock Rd
Wilson Rd
Quick Rd
Arnold Rd
Foster Rd
2nd St
Wilkins Rd
San Pascual Rd
Yuma Ave
1st Ave
Easterday Rd
Olague Rd
San Pascual School Rd
Winterhaven Dr
H St
C St
B St
Emerald Ln
I 8 W
Agnes Rd
I 8
Wetlands Park
Joe Henry Park
Yuma Quartermaster Depot
State Historic Park
W 1st St
Sanguinetti Athletic Field
Marcus Pool City Park
S Avenue B
W 8th St
Kiwanis Park
Roxaboxen Park
Netwest Park
W 13th St
0
2
miles
LEGEND
SITE
USTs
LUSTs
CERCLA / NFRAP
LANDFILLS
RCRA (Generators, TSD & CORRACTS TSD)
RCRA COMPLIANCE
SCHOOL


0
1
miles
bing
© Harris Corp, Earthstar Geographics LLC Earthstar Geographics SIO © 2015 Microsoft Corporation




Name: BARD
Date: 04/12/15
Scale: 1 inch = 4,000 ft.

Location: 032° 47' 26.5228" N, 114° 34' 44.2079" W
2015-04-012.north

Copyright (C) 2009 MyTopo

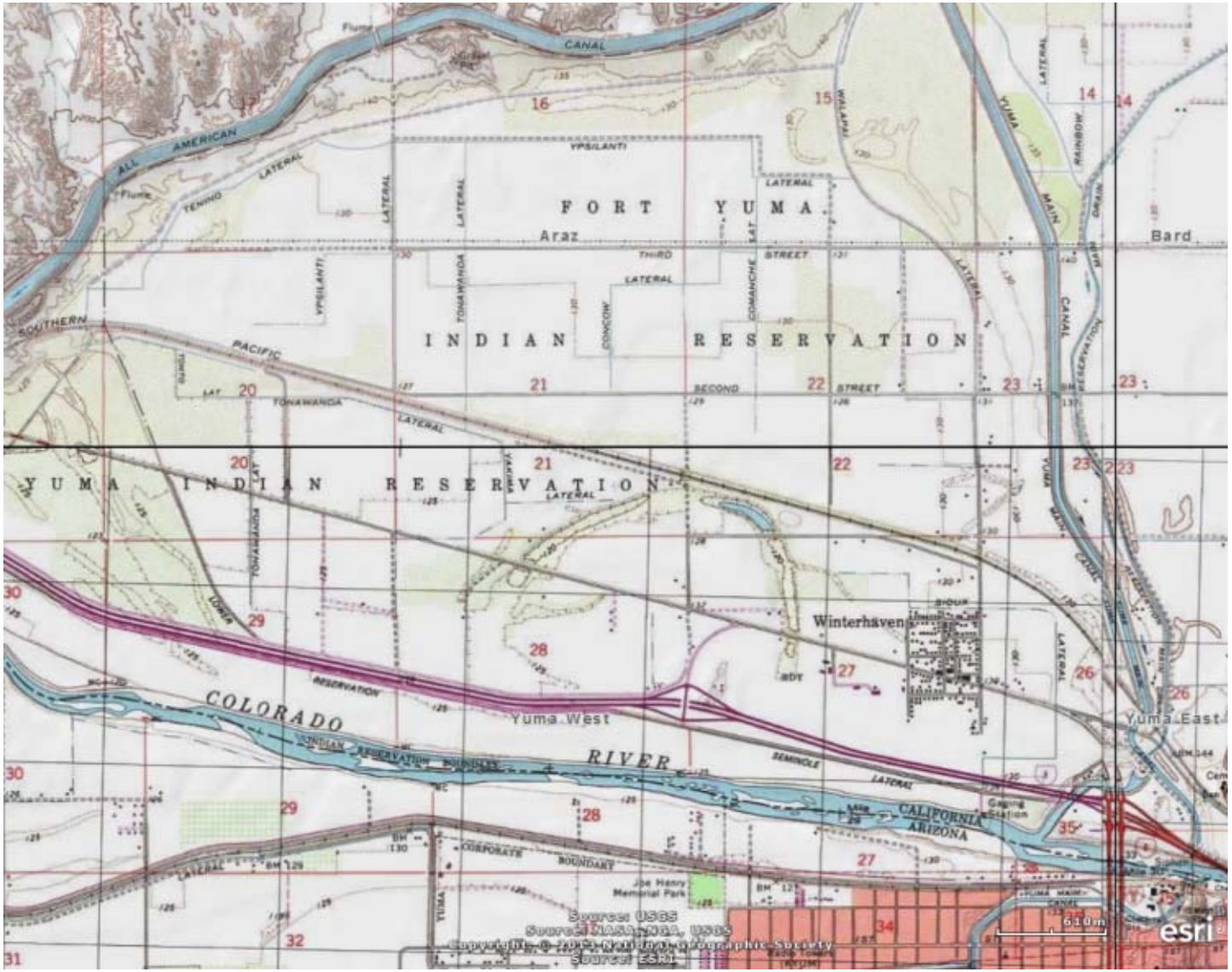



Name: BARD
Date: 04/12/15
Scale: 1 inch = 4,000 ft.

Location: 032° 45' 21.0674" N, 114° 34' 36.0000" W
2015-04-012

Copyright (C) 2009 MyTopo

## Topo West


CANAL
ALL AMERICAN
LATERAL
FORT YUMA
INDIAN RESERVATION
YUMA INDIAN RESERVATION
Araz
Bard
Winterhaven
Yuma West
Yuma East
COLORADO
RIVER
CALIFORNIA
ARIZONA
SOUTHERN PACIFIC
Joe Henry Memorial Park
Source: USGS
Source: NASA, USGS
Source: ESRI
esri

Allands
14947 W. Piccadilly Road, Goodyear, AZ 85395 • Phone: 623-535-7800 • Fax: 623-535-7900
www.allands.com • e-mail: sharons@allands.com
Historical Title and Environmental Research

# TITLE AND JUDICIAL RECORDS FOR ENVIRONMENTAL LIENS AND ACTIVITY AND USE LIMITATIONS; VOLUNTARY ENVIRONMENTAL MITIGATION USE RESTRICTIONS BY OWNERS (VEMUR) AND DECLARATION OF ENVIRONMENTAL USE RESTRICTIONS (DEUR)

YOUR FILE NO:

ALLANDS FILE NO: 2015-04-012E

Date of Report: April 12, 2015
Title Plant Date***: April 8, 2015
***The Title Plant Date reflects the most current data made available by the information sources used at the time the research was performed.

ALLANDS hereby presents an Environmental Search Report to the land described below The total liability is limited to the fee paid for this report.. Allands is not responsible for errors in the available records. The total liability is limited to the fee paid for this report. This is a confidential, privileged and protected document for the use of Tierra Right of Way Services.

1. The land referred to in this report is located in Imperial County, California.

2. 1/10th of a mile Corridor Study along power line corridor and existing DSA and proposed nodes along Streets and Avenues located on the Fort Yuma - Quechan Indian Reservation and in the vicinity of the towns of Bard and Winterhaven, California, being in Sections 13, 14, 21 to 24, inclusive, 26 & 27, Township 16 South, Range 22East; Sections 32 & 33, Township 15 South, Range 23 East; and in Sections 4 to 9, inclusive and 16 to 19, inclusive, Township 16 South, Range 23 East, San Bernardino Meridian and Base Line.

3. No VEMUR'S, DEUR'S; Environmental Liens, Brownfields, institutional controls, engineering controls, or activity and use limitations, if any, were found currently recorded against the property as searched at the subject county recorder's office.

# Appendix G
## Scoping Report

# Winterhaven Last Mile
# Underserved Broadband Project

## Scoping Report

October 2015

**California Public Utilities Commission**
505 Van Ness Avenue
San Francisco, CA 94102

# Table of Contents

**1.0 Introduction ..... 1**

**2.0 Scoping Activities ..... 1**

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*2.2 Notice of Public Scoping ..... 1*

*2.3 Project Website and Multimedia Opportunities to Submit Comments ..... 1*

*2.4 Public Scoping Meeting ..... 2*

**3.0 Comments ..... 2**

# List of Appendices

**A Notice of Completion**
**B Notice of Public Scoping**
**C Screenshot of Project Webpage**
**D Meeting Materials for August 26 Public Meeting**
**E Comments**

## 1.0 Introduction

On October 3, 2013, the California Public Utilities Commission (CPUC) approved Resolution T-17410 to award a California Advanced Services Fund (CASF) grant for the Winterhaven Last Mile Broadband Project (the proposed project) to TDS Telecommunications Corporation's the Winterhaven Telephone Company doing business as TDS Telecom, Inc. (TDS or the applicant). The purpose of the project is to provide high-speed internet service to a 15.67-square-mile area (proposed project area) that includes the Winterhaven, California community, other unincorporated areas of Imperial County, and areas within the Forth Yuma Indian Reservation, which is home to the Quechan Indian tribe. As defined by CPUC Decision 12-02-015, the need of the proposed project is predicated on the fact that these areas are underserved—broadband is available, but no facilities-based provider offers service at speeds of at least 3 megabits per second for downloads and 1 megabits per second for uploads. The purpose and need of the proposed project aligns with Senate Bill 1193 (approved in 2008 and codified in PUC Section 281) to approve funding for infrastructure projects that will provide broadband access to 98 percent or more of California households.

CPUC Resolution T-17410 found that proposed project is subject to review pursuant to the California Environmental Quality Act (CEQA). Due to the proposed construction of facilities on the Fort Yuma Indian Reservation, the project is also subject to review pursuant to the National Environmental Policy Act (NEPA). The CPUC will serve as the lead agency under CEQA, and the Bureau of Indian Affairs (BIA) will serve as the federal lead agency under NEPA.

To comply with the requirements of CEQA and NEPA, an Initial Study/Environmental Assessment (IS/EA) is being prepared. CEQA and NEPA both encourage public participation throughout the environmental review process. Scoping is a means of soliciting input, early in the environmental review process, concerning the project purpose and need, the range of alternatives to be analyzed, and the scope of the analysis to be included in the environmental document. This Scoping Report has been prepared to document the scoping activities conducted to solicit input from the public and government agencies, to identify public and agency concerns and to define the environmental issues and alternatives to be examined in the IS/EA. This report covers outreach conducted during the formal scoping period of August 27, 2015, through October 2, 2015. Public and agency outreach efforts will continue throughout the project development process.

## 2.0 Scoping Activities

The scoping activities conducted for the proposed project are described below.

### *2.1 Notice of Preparation (NOP)*

A Notice of Preparation (NOP), explaining that an IS/EA will be prepared for the proposed project, and requesting comments on the scope and content of the environmental information to be addressed, was submitted to the State Clearinghouse on September 1, 2015. The NOP was circulated to responsible, trustee, and federal agencies. The distribution list for the NOP is provided in the Notice of Completion in Appendix A.

### *2.2 Notice of Public Scoping*

A public scoping notice was published in the newspaper, the *Yuma Sun,* on August 23 and August 24, 2015. The text of the public scoping notice was also provided for distribution to a representative of the Quechan tribe. Copies of these notices are provided in Appendix B.

### *2.3 Project Website and Multimedia Opportunities to Submit Comments*

CPUC maintains a website for the project, providing various documents and information regarding the project, at www.cpuc.ca.gov/Environment/info/horizonh2o/winterhaven/index.html. The website provided information on how to submit comments during the scoping period. A screenshot of the website is provided in Appendix C. An email address, fax machine, and a telephone line with a recorded outgoing message inviting comments on the scoping of the environmental document were also available. The email address, telephone number and fax number were publicized on the project website and at the public meeting, to facilitate the submission of comments.

### *2.4 Public Scoping Meeting*

A public scoping meeting was held at the Paradise Casino, at 450 Quechan Drive, Yuma, AZ, on Thursday, August 26, from 6:00 to 8:00 p.m. Five members of public attended. A CPUC staff member and an environmental consultant for CPUC gave presentations on the proposed project and the environmental resource topic areas that are anticipated to be studied during environmental review. Representatives of the applicant were present and assisted in answering questions regarding the proposed project. Members of the public in attendance were encouraged to provide information that they may have regarding environmental resources that may occur in the proposed project area, concerns they may have regarding the potential for environmental impacts to result from the project, and suggestions they may have regarding the scope of environmental technical studies to be conducted for the project. Members of the public provided oral comments, which were noted on a flipchart by a consultant to CPUC. Comment cards were also available at the meeting for attendees to complete and submit to the CPUC. The meeting sign-in sheet, meeting handouts, and the PowerPoint slides shown during the meeting are provided in Appendix D.

## 3.0 Comments

Comments were provided orally at the public meeting and summarized on a flipchart. Appendix E presents copies a transcription of the notes from the flipchart. Topics raised included the following:

- Groundwater resources
- Cultural resources
- Potential seismic impacts
- Potential land use impacts
- Existing condition of internet access
- Questions regarding the project
- Questions regarding the grant funding

# Appendix A

# Notice of Completion

Print Form

*Appendix C*

# Notice of Completion & Environmental Document Transmittal

*Mail to:* State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
*For Hand Delivery/Street Address:* 1400 Tenth Street, Sacramento, CA 95814

**SCH #**

**Project Title:** Winterhaven Last Mile Underserved Broadband Project

Lead Agency: California Public Utilities Commission | Contact Person: Rob Peterson

Mailing Address: 505 Van Ness Avenue | Phone: (415) 703-2820

City: San Francisco | Zip: 94102 | County: San Francisco

**Project Location:** County: Imperial | City/Nearest Community: Winterhaven

Cross Streets: Various | Zip Code: 92283

Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W | Total Acres: N/A

Assessor's Parcel No.: N/A | Section: ____ | Twp.: ____ | Range: ____ | Base: ____

Within 2 Miles: State Hwy #: ____ | Waterways: Various

Airports: ____ | Railways: Union Pacific | Schools: Various

**Document Type:**

CEQA: ☒ NOP ☐ Draft EIR | NEPA: ☒ NOI | Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR | ☐ EA | ☐ Final Document
☐ Neg Dec (Prior SCH No.) ____ | ☐ Draft EIS | ☐ Other: ____
☐ Mit Neg Dec Other: ____ | ☐ FONSI

**Local Action Type:**

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☒ Other: N/A

**Development Type:**

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees____
☐ Commercial: Sq.ft. ____ Acres ____ Employees____
☐ Industrial: Sq.ft. ____ Acres ____ Employees____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: Fiber Optic Cable Laydown

**Project Issues Discussed in Document:**

| | | | |
|---|---|---|---|
| ☒ Aesthetic/Visual | ☐ Fiscal | ☒ Recreation/Parks | ☒ Vegetation |
| ☒ Agricultural Land | ☒ Flood Plain/Flooding | ☐ Schools/Universities | ☒ Water Quality |
| ☒ Air Quality | ☒ Forest Land/Fire Hazard | ☐ Septic Systems | ☒ Water Supply/Groundwater |
| ☒ Archeological/Historical | ☒ Geologic/Seismic | ☒ Sewer Capacity | ☒ Wetland/Riparian |
| ☒ Biological Resources | ☒ Minerals | ☒ Soil Erosion/Compaction/Grading | ☒ Growth Inducement |
| ☐ Coastal Zone | ☒ Noise | ☒ Solid Waste | ☒ Land Use |
| ☒ Drainage/Absorption | ☒ Population/Housing Balance | ☒ Toxic/Hazardous | ☒ Cumulative Effects |
| ☒ Economic/Jobs | ☒ Public Services/Facilities | ☒ Traffic/Circulation | ☐ Other: ____ |

**Present Land Use/Zoning/General Plan Designation:**

Various

**Project Description:** *(please use a separate page if necessary)*

The Proposed Project would extend high-speed internet service to an approximately 15.67 square mile area, including the community of Winterhaven, a portion of the Fort Yuma-Quechan Indian Reservation, and other areas of unincorporated Imperial County in southeastern California.

*Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.*

## Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

| | | | |
|---|---|---|---|
| X | Air Resources Board | X | Office of Historic Preservation |
| | Boating & Waterways, Department of | X | Office of Public School Construction |
| X | California Emergency Management Agency | X | Parks & Recreation, Department of |
| X | California Highway Patrol | | Pesticide Regulation, Department of |
| | Caltrans District # | | Public Utilities Commission |
| | Caltrans Division of Aeronautics | X | Regional WQCB # 7 |
| X | Caltrans Planning | X | Resources Agency |
| | Central Valley Flood Protection Board | | Resources Recycling and Recovery, Department of |
| | Coachella Valley Mtns. Conservancy | | S.F. Bay Conservation & Development Comm. |
| | Coastal Commission | | San Gabriel & Lower L.A. Rivers & Mtns. Conservancy |
| | Colorado River Board | | San Joaquin River Conservancy |
| X | Conservation, Department of | | Santa Monica Mtns. Conservancy |
| | Corrections, Department of | | State Lands Commission |
| | Delta Protection Commission | | SWRCB: Clean Water Grants |
| | Education, Department of | X | SWRCB: Water Quality |
| X | Energy Commission | | SWRCB: Water Rights |
| X | Fish & Game Region # 6 | | Tahoe Regional Planning Agency |
| | Food & Agriculture, Department of | | Toxic Substances Control, Department of |
| X | Forestry and Fire Protection, Department of | | Water Resources, Department of |
| X | General Services, Department of | | |
| | Health Services, Department of | | Other: |
| X | Housing & Community Development | | Other: |
| X | Native American Heritage Commission | | |

**Local Public Review Period (to be filled in by lead agency)**

Starting Date August 27, 2015 Ending Date October 2, 2015

**Lead Agency (Complete if applicable):**

Consulting Firm: Horizon Water and Environment, LLC
Address: 180 Grand Avenue, Suite 1405
City/State/Zip: Oakland, CA 94612
Contact: Tom Engels
Phone: (916) 790-8548

Applicant:
Address:
City/State/Zip:
Phone:

**Signature of Lead Agency Representative:** **Robert Peterson, CPUC, Energy Division** **Date:** Sept 1, 2015

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

# Appendix B

# Notice of Public Scoping

**Appendix B Contents:**

- Meeting announcement in the August 23, 2015, Yuma *Sun*
- Meeting announcement in the August 24, 2015, Yuma *Sun*
- Meeting notice provided to a member of the Quechan tribe, to distribute to other tribe members

# County growers lead in efficient, earth-friendly methods of growing produce



Yuma Ag & You
Bobbi Stevenson-McDermott

The sights and sounds of Yuma County agriculture in August! Looking at the fields, there is a lot more brown than green at this time of year. Growers are in the midst of harvesting Sudan hay, Sudan seed, dried beans and peas, alfalfa hay, Bermuda grass hay and seed, and other specialty seed crops. Cotton growers will probably start early picking in late August. The weather has been tough with all the extreme heat and humidity. Wheat fields have been harvested, stalks baled and the remaining organic matter turned into the soil.

Now is the time that the heavy tillage is done, while the soil profile to a depth of 3 feet or more is very dry and rippers can break up compacted layers and facilitate the soil structure. The soil structure determines how much air and water will get to the root zones of the coming produce crops.

This year, there seem to be many fields being bedded and then the beds covered with sheets of plastic. This process is called solarization, a method of weed control. The heat builds up under the plastic to temperatures that will kill many weed seeds, reducing the need to use tillage and herbicides later in the year. Solarization may also help with insect and disease problems.

Along Highway 95, there are fields that are being continuously flooded for days at a time. The practice of keeping a field saturated with water is thought to help to control the lettuce disease Sclerotinia sclerotiorum. The sclerotia, or the fungal 'seed,' become hard and black when they mature. The sclerotia act like seeds and allow the fungus to survive for several years in the soil. Control of Sclerotinia diseases must be accomplished by using a combination of cultural and chemical means. Presently, resistant lettuce varieties have not been successfully developed with enough resistance to make this a feasible means of control. Activity of this pathogen favors high soil moisture, high air humidity and cool temperatures. Research has shown that the use of drip irrigation can dramatically reduce both factors near the soil surface and reduce the incidence of Sclerotinia diseases. Crop rotation is another important tool in reducing the disease population in the soil. Planting non-host crops as corn, small grains and grasses are suggested rotation crops.

It should be mentioned that a non-crop fallow period does little to reduce the disease population. The wetting and drying of soil that occurs during a cropping cycle is much more effective in reducing the number of active sclerotia in the soil. Deep plowing has been recommended to help reduce Sclerotinia diseases, but recent research does not support this practice. There are a number of fungicides that have excellent activity against Sclerotinia.

Avoiding overly wet soils by keeping the lettuce bed surface as dry as possible with careful irrigation is important as is irrigation water management and good soil drainage.

There are continual improvements to the technology used in the produce industry. One of the newest is a plant tape. Most folks understand what a seed tape is, some type of material with seeds imbedded in it that is merely planted, watered and then the seed grows. One of the problems with planting vegetable seed is that it is extremely expensive, from hundreds to thousands of dollars per pound. While everyone uses precision seeders, most crops grown from seed must be thinned so the heads develop uniformly. While mechanical thinners were demonstrated at the Yuma Ag Summit in February 2015, the technology still is in the development stage. Also with the planting of seed, there is a percentage of the seed that do not germinate, leaving gaps in the crop line, something no grower wants to see. A YouTube video I recently saw shows little germinated lettuce on a tape. A machine then installs the tape with the plants on the field rows. Plants are spaced on the tape at the optimum distance for head development. If this technology becomes commercially successful, it will greatly reduce the labor needed early in the crops growing season.

In a visit last year to a transplant-growing facility, I was surprised to learn that some growers are already transplanting some lettuces. In addition, watermelons, cantaloupes, herbs and many other crops are being transplanted because a viable plant is going into the field.

All these changes in the early stages of produce production may in the long run reduce the production costs for these crops. Yuma County growers continue to be leaders in the development of more efficient and environmentally sound methods of growing produce worthy of the winter produce capital!

Bobbi Stevenson-McDermott is a soil and water conservationist. She can be reached at rjsm09@msn.com.



**YUMA GROWERS HAVE** gotten better at growing crops in an efficient and environmentally sustaining method.

PHOTOSPIN.COM

## CROP OF THE WEEK: SORREL



PHOTO BY KURT NOLTE/YUMA COUNTY COOPERATIVE EXTENSION

**IN THE YUMA AREA, sorrel is grown exclusively as an annual crop. Sorrel may be a little challenging to find in your local grocery store, the best place to look for sorrel is in specialty food stores, where it may be available fresh, or in pureed or canned varieties.**

• Young sorrel may be harvested to use in salads, soups or stews. If using sorrel in salads, it's a good idea to stick with small tender leaves that have a fruitier and less acidic taste. Young sorrel leaves are also excellent when lightly cooked, similar to the taste of cooked chard or spinach. For soups and stews, older sorrel can be used because it adds tang and flavor to the dish.

• The sorrel herb grows as a perennial, however, the male and female parts of the sorrel grow on separate plants. The leaves of a sorrel plant are sometimes used to treat fevers, itchy skin and ringworm. When dried or fresh, the leaves can clear the system by serving as a diuretic or laxative. The juice from the leaf can be applied directly to the skin to calm rashes. Liquid from the root can be infused into one's body in order to treat jaundice, gravel and kidney stones.

• Sorrel may be a little challenging to find in your local grocery store, the best place to look for sorrel is in specialty food stores, where it may be available fresh, or in pureed or canned varieties. For sorrel fans, fresh sorrel is most preferable, though the pureed version may add a nice flavor to creamy soups.

• From a nutritional standpoint, sorrel can be an excellent food for many. It has high levels of vitamins A and C. It also has moderate levels of potassium, calcium, and magnesium. Because of the oxalic acid in sorrel, it is not good for everyone. Oxalic acid may aggravate the conditions of people with rheumatism, kidney or bladder stones. If you love sorrel when you first try it, learn to love it in small doses in the beginning.

• Common sorrel, also known as spinach dock, is a perennial herb that is cultivated as a garden herb or leaf vegetable. It is a slender plant that is deep rooted and grows to almost 2 feet high. It has juicy stems and edible oblong leaves and grows up to 6 inches in length. Its lower leaves are arrow-shaped at the base and have whorled spikes of reddish-green flowers. It will supply growers with a crop from early spring to late fall as a "cut-and-come-again" crop. Once established, the plant should produce greens for 8-10 years, but in the Yuma area, sorrel is grown exclusively as an annual.

• Traditionally, sorrel is cooked like spinach and vine leaves. Its sharp, fresh taste makes it a good foil for dolmades and an excellent ingredient for pies, omelets, etc. In past, when lemons were very expensive, the lemon flavor of sorrel was a good substitute for lemon juice. People kept sorrel leaves out of season, pressing them tightly with salt in sealed bottles or air drying them. Though they are very popular in rural Greek cooking.

• Some in the Caribbean use sorrel for jams, chutneys and make a popular sorrel drink that is served at Christmas time. Sorrel is also used as a colorant for some foods and beverages.

Kurt Nolte is an agriculture agent and Yuma County Cooperative Extension director. He can be reached at knolte@cals.arizona.edu or 726-3904.

# Poll: Majority in U.S. wants gov't to curb prescription costs

ASSOCIATED PRESS

WASHINGTON — Move over, "Obamacare." A new poll finds Americans worried about medication costs and broadly supporting government action to curb drug prescription prices.

Overall, 72 percent said the cost of prescription medications is unreasonable, according to Thursday's poll from the nonpartisan Kaiser Family Foundation.

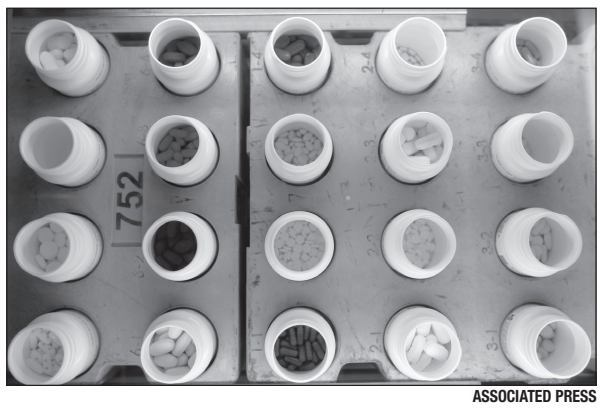
Regardless of party affiliation, large majorities support requiring pharmaceutical companies to disclose how they set prices (86 percent); allowing Medicare to negotiate drug prices on behalf of beneficiaries (83 percent); limiting what drug companies can charge for medications to treat serious illnesses (76 percent); and allowing consumers to get prescriptions filled by pharmacies in Canada (72 percent).

The 2016 presidential candidates continue to debate President Barack Obama's 5-year-old law expanding coverage for the uninsured, but the survey suggests the public has other priorities.

"The public is more focused on consumer issues like the price of drugs and out-of-pocket costs than the continuing political battles over the health care law," said Drew Altman, president of the foundation, a clearinghouse for information on the health care system.

The Pharmaceutical Research and Manufacturers of America argues that government price controls would stifle an innovative industry that is delivering cures for life-threatening illnesses and allowing many people with chronic disease to lead productive lives.

But high-priced new drugs, including a $1,000 pill for hepatitis C, have alarmed the public. Insurers are complaining, and so are state Medicaid programs and the Department of Veterans Affairs, which are legally entitled to lower prices.




ASSOCIATED PRESS

**VARIOUS PRESCRIPTION DRUGS on the automated pharmacy assembly line at Medco Health Solutions are displayed in Willingboro, N.J. A new poll out Thursday finds that Americans strongly support government action to control prescription drug costs, regardless of their political affiliation.**

Insurers and employers often require patients with private coverage to pay a bigger share of the cost of new drugs. At the same time, prices for some of the old generic stand-by medications have soared.

As a result, the drug industry seems to be taking a beating when it comes to public opinion. Only about 4 in 10 in the poll viewed pharmaceutical companies favorably, about the same share that holds a positive opinion of oil companies. Even airlines, the target of consumer complaints about bag fees and on-time performance, were viewed favorably by 55 percent.

Overall, 73 percent said drug companies make too much profit.

"It's clear that drug companies have overreached and their pricing is not sustainable," said Topher Spiro, the top health policy expert at the Center for American Progress, a think tank often aligned with the White House.

But it won't be easy to translate public sentiment into government policies that don't spawn new problems.

"To arbitrarily limit the price of drugs without regard to benefit or value would not be wise," said Spiro. More transparency is needed about how pharmaceutical companies price their products, and more research is needed to establish which drugs work best, he added.

Although the public says it wants action, the poll also found an undercurrent of skepticism about government.

As a general proposition, Americans prefer marketplace competition over government regulation to keep drug prices in check, by 51 percent to 40 percent.

The poll found that about half of Americans take a prescription medication, and of those, 7 in 10 said their prescriptions are easy to afford. But one-quarter have difficulty paying for their drugs, including 43 percent of those who are in poor health, and 33 percent of those with low incomes.

*Join us for a*
*Public Consultation Meeting*
for the
*Winterhaven Last Mile Underserved Broadband Project on August 26th*

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**Wednesday, August 26th, 6:00 pm – 8:00 pm**
**Paradise Event Center, Paradise Casino**
**450 Quechan Drive, Yuma, AZ 85364**

Will you need an accommodation in order to attend and/or participate in this event? If so, please contact Tom Engels, Horizon Water and Environment at (916) 790-8548. Auxiliary aides and services are available to individuals with disabilities upon request.

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## Business Glance

### Chamber mixer

The Yuma County Chamber of Commerce's monthly mixer will be 5:30 to 8 p.m. Friday at the Yuma Civic Center, 1440 W. Desert Hills Drive.

This mega-mixer is sponsored by the 65 members who have booths and exhibits for members to visit and enjoy. There will be food, a no-host bar and door prizes.

Admission is $5 at the door. For more information, call the chamber at 782-2567.

### Super manager training

Four flexible and interactive modules will prepare supervisors and potential supervisors to become more effective in a diverse and ever-changing environment offered by Arizona Western College Continuing Education Division.

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- Supervision and human resources

Students can complete all four modules or select only those most applicable to their goals. Course outlines are available upon request. The first course begins Sept. 8 at the AWC Entrepreneurial Center, 1351 S. Redondo Center Drive. Cost is $129 per module.

For more information, call 317-7674 or visit www.azwestern.edu/continuinged.

### Basic training course

Yuma County Community Emergency Response Team will hold a basic training class over a two weekend period at the Yuma County Public Works facility, 4343 S. Avenue 5-1/2E.

The first session will be 6 to 9 p.m. Sept. 18 and 8 a.m. to 5 p.m. Sept. 19. The next session will be 6 to 9 p.m. Sept. 25 and 8 a.m. to 5 p.m. Sept. 26.

Class is limited to 15 participants. Another class can be arranged to accommodate overflow.

To sign up, send an email to tony.badilla@yumacountyaz.gov or yumacertrudy@gmail.com or call 317-4681. Study material will be delivered during the first or second week prior to class. All training is free.

**To submit business items, email Arlene Fornof at afornoff@YumaSun.com**

## First Take By John Vaughn, Bajo El Sol editor



Darin Fenger's recent story in the Yuma Sun about the new owners of El Charro Cafe brought back fond memories of Yuma three decades ago, when I got to town.

I know there were other Mexican restaurants besides, but the ones back then that I vividly recall were El Charro, Chretin's, La Casa Gutierrez and La Fonda. Of course, along with El Charro, La Fonda and Chretin's remain in business, although the latter moved to a new location.

All my acquaintances back then had their decided preferences among the four, and every so often we engaged in debate about which was best. Truth be told, any one of us would gladly eat at any one of the four.

I'm sure the same argument played out all over town.

Congratulations are due Pauline Villa and Anna Martinez, who become the third generation of the Gutierrez family to operate El Charro. And I also tip my hat to all the other great restaurants in the area.

## Lotteries

Winning numbers selected Sunday, Aug. 23.

**CALIFORNIA**
Fantasy 5 - 3,7,31,35,39
Afternoon Daily 3 - 6,8,8
Evening Daily 3 - 7,7,2

For more information or past winning numbers, visit the Arizona or California lottery websites.

## Page 3

# Grant funds to be used for data sharing

### Money will help public safety in Yuma

BY RACHEL TWOGUNS
@RTWOGUNS

U.S. Attorney for the District of Arizona John S. Leonardo announced Tuesday that the Bureau of Justice Assistance (BJA) awarded the City of Yuma $42,924 in grant funds, according to a City of Yuma press release.

The Yuma Police Department will use the money for its part in the participation of mobile data sharing between members of the Yuma Regional Communications System (YRCS).

Kitzya Leal Quintero, grant writer for the City of Yuma, explained in the news release that the goal of the project is to "tie all county agencies together in order to share information between them as needed."

Quintero noted that without the funding it would be difficult for the Yuma County law enforcement agencies to complete this project.

YRCS is an award-winning collaboration of almost all local, state, tribal and federal public safety agencies in the region surrounding Yuma. It was created in the aftermath of the 9/11 terrorist attacks and it began as a way for various public safety agencies to be able to contact one another via radio while also maintaining secure connections to their respective home bases.

In more recent times YRCS has added a joint computer-aided dispatch and a records management system allowing interagency sharing of real-time data. For instance, if the U.S. Border Patrol is chasing a vehicle and it travels into the Yuma city limits, YPD officers can already have information such as to whom the suspect vehicle is registered and the exact locations of the Border Patrol vehicle and other officers and agents in the area.

The funding was requested by the Yuma Police Department to aid in paying for air card airtime charges and Internet access for virtual private network communications with mobile data computers. This permits YPD and the other county-area public safety agencies the sharing of information.

The main objective of the District of Arizona's office is to support local law enforcement agencies, said Leonardo in a news release. "We encourage all agencies to be proactive and apply for future grant funding through our Office of Justice Program."

# Walk a Mile for Ashlly





Lutes Casino manager Laurie Nau-Martocci (left in photo above) and servers Christy McMaster (center) and Carla Holmes check out the special T-shirts worn by workers at Lutes Casino, Pint House and Prison Hill Brewery during Friday night's special Walk A Mile For Ashlly fundraiser, benefiting Ashlly Montes, who was injured in the recent alleged kidnapping of her roommate. Proceeds from the event are to be used to help Montes with her medical expenses. Servers at the three downtown eateries wore pedometers and collected pledges for how many miles they walked during the event, which lasted from 5 p.m. until closing. Montes was a server at Lutes Casino. Holmes, wearing a special Walk A Mile For Ashlly T-shirt, explains the fundraiser to three Lutes Casino patrons.

Buy these photos at YumaSun.com

PHOTOS BY RANDY HOEFT/**YUMA SUN**

# 1st public hearings on Medicaid changes find wide opposition

ASSOCIATED PRESS

PHOENIX — Arizona Gov. Doug Ducey wants able-bodied Arizonans on the state's Medicaid program for the poor to pay into health savings accounts and be charged co-pays for some services, but those proposals and others he's touting got a tough reception at the first meeting where the public was allowed to weigh in.

Health care providers and patients said the governor's proposals would likely end up costing the state more money by discouraging people from getting treatment until they are far sicker. And their blunt assessment will be passed on to the Centers for Medicare and Medicaid Services, which must approve a waiver to allow them to go into force.

The most concerning proposals to those who attended the first of five planned public hearing were the co-pays and mandatory premiums Ducey wants the able-bodied to pay and a five-year cap on enrollment.

"Our office has tried (co-pays) and they really just don't work. The effect they have is people just don't come," said Dr. Tim Jordan, a Phoenix pediatrician who specializes in developmental disabilities. "The short-term effect is you'll save money because people just won't participate in the program. And it seems like the purpose of this is to get people not to participate."

Jordan's comments were echoed by several speakers at a meeting organized by the Arizona Health Care Cost Containment System, the state's Medicaid plan.

But Ducey is set on what he calls a modernization of the health care insurance plan for poor Arizonans. In additional to "strategic co-pays" for some services limited to 3 percent of a recipient's income, his plan uses the 2 percent of income premium to fund an account an insured person can use to pay for non-covered services. Patients can tap the account once they meet "wellness" steps and keep unused cash when they move off the program.

Only about 350,000 people of 1.7 million now on the plan would be affected. The elderly, disabled and those caring for young children would be exempt.

Co-pays and premiums, however, have been shown in studies to keep people from getting care and to actually drive up the ultimate cost because of delays in seeking treatment, said Dee Mahan, Medicaid program director for Families USA, a nonpartisan group that pushes for increased access to health care.

"What ends up happening is a lot of times people can't make those payments – when you're very, very low income 2 percent is a lot – and that means people drop coverage or they don't sign up for the program," Mahan said.

## State Glance

ASSOCIATED PRESS

### 9-month-old girl pulled from bathtub in critical condition

PHOENIX — A 9-month-old girl has been hospitalized after being pulled from a bathtub in a Phoenix home.

Phoenix firefighters say they were called to the home near Cactus Road and 42nd Street Sunday morning after a family member found the girl in the tub.

Fire spokesman Larry Subervi says the child suffered full cardiac and respiratory arrest.

She is currently listed in extremely critical condition at Phoenix Children's Hospital.

It is unknown how long she was submerged.

### Phoenix police officer shot at during traffic stop

PHOENIX — Phoenix police say an officer narrowly escaped getting hit by gunfire during a random traffic stop.

Police spokesman Vince Lewis says the officer tried to pull over a vehicle for speeding Sunday around 3 a.m. near 67th Avenue and Hazelwood Street.

Lewis says the car came to a stop but then the occupants opened fire. According to Lewis, the officer was not injured by several rounds hit his police vehicle.

The suspects fled in a white sedan.

### Designated drivers in Tucson rewarded with free gas

TUCSON — Drivers carrying impaired passengers in Tucson are being rewarded.

KVOA-TV in Tucson reports that Pima County sheriff's deputies gave out gas cards to sober drivers with intoxicated passengers at a DUI checkpoint on Saturday.

The department timed the checkpoint on the city's south side to coincide with students going back to school.

Each gas card was worth $25.

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# *Join us for a*
# *Public Consultation Meeting*

for the

# Winterhaven Last Mile Underserved Broadband Project on August 26th

The California Public Utilities Commission (CPUC) invites you to attend a public meeting on the Winterhaven Last Mile Underserved Broadband Project (Proposed Project). The Proposed Project, being proposed by the Winterhaven Telephone Company TDS Telecom, Inc., would extend high-speed internet service to an area approximately 15.67 square miles in size, including the community of Winterhaven, a portion of the Fort Yuma-Quechan Indian Reservation, and other areas of unincorporated Imperial County in southeastern California. The Proposed Project would involve installation of approximately 15.31 miles of new fiber optic cable underground within protective conduit, as well as buried vaults, equipment cabinets, and splice boxes along existing roads in the project area. The CPUC is the lead state agency, and the Bureau of Indian Affairs is the lead federal agency, for preparation and review of an initial study/environmental assessment (IS/EA), pursuant to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). The purpose of the meeting is to provide information about the project and to solicit input on the scope and content of the environmental information to be included in the IS/EA. The date, time, and location of the public scoping meeting will be as follows:

**Wednesday, August 26th, 6:00 pm – 8:00 pm**
**Paradise Event Center, Paradise Casino**
**450 Quechan Drive**
**Yuma, AZ 85364**

Will you need an accommodation in order to attend and/or participate in this event? If so, please contact Tom Engels, Horizon Water and Environment at (916) 790-8548. Auxiliary aides and services are available to individuals with disabilities upon request.

NOTE: This notice was provided to a representative of the Quechan tribe, to distribute to other members of the tribe.

# Appendix C

# Screenshot of Project Webpage

# STATE OF CALIFORNIA PUBLIC UTILITIES COMMISSION

## TDS Telecom Winterhaven Last Mile Underserved Broadband Project

### Commission Resolution T-17410

Files linked on this page are in Portable Document Format (PDF). To view them, you will need to download the free Adobe Acrobat Reader if it is not already installed on your computer.

Welcome to the California Public Utilities Commission (CPUC) website for the environmental review of the proposed TDS Telecom (TDS) Winterhaven Last Mile Underserved Broadband Project (Project). The proposed Project includes construction and installation of a fiber-optic network that would extend high-speed internet service to the community of Winterhaven, to a portion of the Fort Yuma-Quechan Indian Reservation, and to other areas of unincorporated Imperial County in southeastern California.

The objective of the proposed Project is to make available affordable broadband internet services to currently underserved areas in Imperial County, including a portion of the Fort Yuma-Quechan Reservation.

The proposed Project is subject to review under the California Environmental Quality Act (CEQA), and the CPUC is the CEQA Lead Agency. The proposed Project is also subject to review under the National Environmental Policy Act (NEPA), and the U.S. Bureau of Indian Affairs (BIA) is the NEPA Lead Agency. A CEQA/NEPA review is being performed to evaluate the potential environmental impacts associated with the Project. This website provides access to public documents and information relevant to the CEQA and NEPA review process.

## Quick Links

- Resolution T-17410, dated October 4, 2013, approving funding of the TDS grant application for the Project
- Proponent's Environmental Assessment (PEA), dated April 21, 2015
  - Entire PEA, Including Appendices (55.6 MB)

  - PEA Only (5.5 MB)
  - PEA Appendices Only (49.3 MB)
  - PEA Appendix A - Project Plans (6.7 MB)
  - PEA Appendix B - CalEEMod Results (190 KB)
  - PEA Appendix C - Biological Resources Evaluation (8.8 MB)
  - PEA Appendix D - Waterway Delineation and Assessment Report (7.4 MB)
  - PEA Appendix E - Class III Cultural Resources Survey Report and Cultural Resources Correspondence (23.9 MB)
  - PEA Appendix F - Allands Data and Research, Inc., Report (3.4 MB)
  - PEA Project Maps (5.1 MB)
- Deficiency Letter, dated May 28, 2015, from CPUC regarding review of PEA
- TDS Response to Deficiency Items, dated June 17, 2015
- Letter Deeming PEA Complete, dated June 24, 2015, from CPUC

## Project Description

The proposed Project involves the construction of a second-generation, very-high-bit-rate digital subscriber line (VDSL2) fiber-optic network capable of 25 Mbps/5 Mbps (megabit-per-second download/upload) speeds. In total, approximately 24.65 km (15.31 miles) of new fiber-optic cable would be buried within protective conduit along existing roads in the project area, and approximately 2.25 km (1.40 miles) of existing buried copper line would be used in the new system.

The proposed Project is funded in part by the California Advanced Service Fund (CASF). On December 20, 2007, the CPUC in Decision 07-12-054 established the CASF program as a two-year program to provide funds for the deployment of broadband infrastructure in unserved and underserved areas in California. CPUC Resolution T-17410 approved funding in the amount of $2,063,967 from the CASF for the proposed Project. A link to Resolution T-17410 is provided above.

## Environmental Review

The TDS PEA was deemed complete by the CPUC on June 24, 2015. The CPUC subsequently determined that an Initial Study/Mitigated Negative Declaration (IS/MND) was the appropriate CEQA document to evaluate potential environmental issues associated with this project. Based on discussions with BIA, preparation of an Environmental Assessment (EA) is anticipated to be the appropriate level of review for NEPA compliance. Therefore, the CPUC is coordinating with BIA to prepare a joint IS/EA.

## Scoping Meeting and Public Comment Period

CPCU conducted a public scoping meeting from 6-8 p.m. on Wednesday, August 26, 2015. The meeting was held at the Paradise

Event Center, Paradise Casino, 450 Quechan Drive, Yuma, AZ 85364.

The initial public comment period begins on August 26, 2015, and ends at **5 p.m. on Monday, September 28, 2015**. Members of the public, interested parties and governmental agencies may provide comments about the proposed Project via the contact information listed below.

## Draft Initial Study/Environmental Assessment

CPUC is currently preparing the draft joint IS/EA. Please check this webpage for updates about when the draft joint IS/EA will be available for public review.

## For Additional Information

The CPUC, through its Environmental Review Team, manages the environmental evaluation of the proposed project. To request additional information or to be added to the mailing list for project updates, please contact us by email, fax, phone or mail, as follows:

**Email**: winterhavenproject@horizonh2o.com
**Fax**: (510) 350-3592
**Toll-free voicemail**: (844) 211-7510

**Mail**: Rob Peterson, CPUC
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

The CPUC's Project Manager is:

Rob Peterson
Energy Division
Infrastructure Permitting and CEQA
505 Van Ness Avenue
San Francisco, CA 94102

WEBSITE INFO This page contains tables and is best viewed with Firefox or Internet Explorer. Please report any problems to the Energy Division web coordinator.

Project Home Page - CPUC Environmental Information - CPUC Home

# Appendix D

# Meeting Materials for August 26 Public Meeting

**Appendix D Contents:**

- Meeting sign-in sheet
- Project flyer: Winterhaven Broadband Project (TDS Telecom)
- Comment card
- PowerPoint handout of slides shown at the public meeting

# CPUC Winterhaven Broadband Project (TDS Telecom)

## *Public Scoping Meeting Sign-In Sheet*

## *August 26, 2015 – Yuma, AZ*

| Name | Address | Email Address | Organization *(optional)* | Phone Number *(optional)* |
|---|---|---|---|---|
| Nate Stanislawski | 525 Junction Rd<br>Madison WI 53717 | natestanislawski@tdstelecom.com | TDS | 608-664-5642 |
| Olivia T. José | 1860 W. Diamond<br>Winterhaven, CA 92283 | | | 928 446-3085 |
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*Disclaimer: Before including your name, address, email address or other personal identifying information, please be aware that your name and contact information will be added to the project mailing list and your personal identifying information may be made publicly available at any time. While you may request that your personal identifying information be withheld from public review, CPUC cannot guarantee that this will be possible.*

# CPUC Winterhaven Broadband Project (TDS Telecom)

***Public Scoping Meeting Sign-In Sheet***

***August 26, 2015 – Yuma, AZ***

| Name | Address | Email Address | Organization *(optional)* | Phone Number *(optional)* |
|---|---|---|---|---|
| JOE KIRK | PO Box 216 | joseph.kirk@tdstelecom.com | TDS | 608-664-4900 |
| Brian Golding Sr. | PO Box 1899, Yuma AZ 85366-1899 | bgolding@quechantribe.com | Quechan EDA | 760/572-5270 |
| Vernon Smith | P.O. Box 04 92283 Winterhaven, CA. | SMITHVRNN@AOL.COM | Quechan | (760) 572-5242 |
| Lucinda E. Polk | Box 763 Winterhaven, Ca. 92283 | | Quechan | 760-572-5242 |
| Carlotta O'Brien Sestiaga | PO Box 117 Winterhaven CA 92283 | C.Sestiaga1@yahoo.com | Quechan | 928503-9170 |
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*Disclaimer: Before including your name, address, email address or other personal identifying information, please be aware that your name and contact information will be added to the project mailing list and your personal identifying information may be made publicly available at any time. While you may request that your personal identifying information be withheld from public review, CPUC cannot guarantee that this will be possible.*

# CALIFORNIA PUBLIC UTILITIES COMMISSION

# WINTERHAVEN BROADBAND PROJECT (TDS TELECOM)

## *Public Scoping*

### PROJECT OVERVIEW

The objective of the TDS Telecom Winterhaven Broadband Project is to make affordable high-speed internet services available to currently underserved areas in Imperial County, including the community of Winterhaven and a portion of the Fort Yuma-Quechan Indian Reservation.

The proposed project involves the construction of a second-generation, very-high-bit-rate digital subscriber line (VDSL2) fiber-optic network capable of 25 Mbps/5 Mbps (megabits-per-second download/upload) speeds. In total, approximately 24.65 km (15.31 miles) of new fiber-optic cable would be buried within protective conduit along existing roads in the project area, and approximately 2.25 km (1.40 miles) of existing buried copper line would be used in the new system.

The proposed project is funded in part by the California Advanced Service Fund (CASF). On December 20, 2007, the California Public Utilities Commission (CPUC) in Decision 07-12-054 established the CASF program as a two-year program to provide funds for the deployment of broadband infrastructure in unserved and underserved areas in California. CPUC Resolution T-17410 approved funding in the amount of $2,063,967 from the CASF for the Winterhaven Broadband Project.

The proposed project is subject to review under the California Environmental Quality Act (CEQA), with the CPUC as the CEQA Lead Agency. The proposed project is also subject to review under the National Environmental Policy Act (NEPA), with the U.S. Bureau of Indian Affairs (BIA) as the NEPA Lead Agency. A CEQA/NEPA review is being performed to evaluate the potential environmental impacts associated with this project.

A Proponent's Environmental Assessment (PEA) for the project was prepared in April 2015 by TDS Telecom and deemed complete by the CPUC on June 24, 2015. The CPUC subsequently determined that an Initial Study (IS)/Mitigated Negative Declaration (MND) was the appropriate CEQA document to evaluate the project's potential environmental issues. Based on discussions with BIA, preparation of an Environmental Assessment (EA) is anticipated to be the appropriate level of review for NEPA compliance. Therefore, the CPUC is coordinating with BIA to prepare a joint IS/EA.

### PUBLIC COMMENT PERIOD

Public input is a valued and important component of the joint IS/EA development process. We invite members of the public, interested parties, and governmental agencies to provide comments about the content of the PEA prepared for this project. **The deadline for comments is 5 p.m. on Monday, September 28, 2015**. All comments received will be considered during the CPUC's preparation of the draft joint IS/EA, which is anticipated to be available for public review in January 2016.

## COMMENT SUBMISSION

Per the guidance provided by CEQA/NEPA, comments should focus on the sufficiency of the PEA document in identifying and analyzing the project's possible impacts on the environment and ways in which any significant effects might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate significant environmental effects. The basis for your comments should be explained, including relevant data or references.

### SUBMIT COMMENTS TO:

| *Mail* | *Voicemail/Fax* | *Email* |
|---|---|---|
| Rob Peterson, CPUC<br>c/o Tom Engels<br>Horizon Water and Environment<br>180 Grand Avenue, Suite 1405<br>Oakland, CA 94612 | **Voicemail**<br>***(Toll-Free)***<br>(844) 211-7510<br>**Fax**<br>(510) 350-3592 | winterhavenproject@horizonh2o.com |

### COMMENTS DUE:

## 5 p.m. on Monday, September 28, 2015

Please include your name, address, contact number, and email address for future correspondence related to this CEQA/NEPA process.

***Further information about the Winterhaven Broadband Project (TDS Telecom) may be found at the project website:***

http://www.cpuc.ca.gov/environment/info/horizonh2o/winterhaven/index.html

# CALIFORNIA PUBLIC UTILITIES COMMISSION
# WINTERHAVEN BROADBAND PROJECT (TDS TELECOM)

## *Scoping Comment Form*

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| Name: |
| Group/Organization (optional): |
| Mailing Address: |
| Telephone No. (optional): |
| Email (optional): |

| **Comments/Issues:** |
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***Please use additional sheets if necessary.***

**SUBMIT WRITTEN COMMENTS (POSTMARKED NO LATER THAN SEPTEMBER 28, 2015) TO:**

**MAIL:** Rob Peterson, CPUC Project Manager
c/o Tom Engels
Horizon Water and Environment, LLC
180 Grand Avenue, Suite 1405
Oakland, CA 94612

**EMAIL:** winterhavenproject@horizonh2o.com

***Questions? Please contact us or visit our website:***
http://www.cpuc.ca.gov/environment/info/horizonh2o/winterhaven/index.html

Place
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**Rob Peterson, CPUC Project Manager**
**c/o Tom Engels**
**Horizon Water and Environment, LLC**
**180 Grand Avenue, Suite 1405**
**Oakland, CA 94612**

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## Winterhaven Broadband Project (TDS Telecom)

Public Scoping Meeting

August 26, 2015

**California Public Utilities Commission**

## Introductions

**Rob Peterson**
California Public Utilities Commission

**Tom Engels**
Horizon Water and Environment

## Meeting Agenda

- Purpose of Scoping
- California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) Review Process
- Project Overview
- Receipt of Public Comment

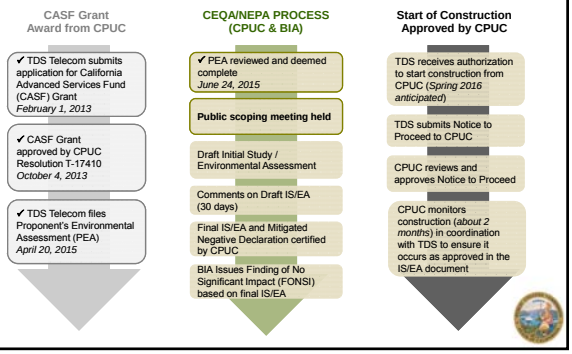
## Purpose of Scoping

To provide the public and agencies with the opportunity to comment on the scope and content of the environmental assessment.

Scoping comments may include information on:

- Potential environmental issues
- Potential mitigation measures
- Potential project alternatives
- Characteristics of the existing environment

## Grant Funding, CEQA/NEPA and Construction Processes




## CEQA/NEPA Review Process

- California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA)
- Determines whether project would have any significant effects on the quality of the human and natural environment
- Identifies proposed mitigation measures for any potentially significant impacts to the environment
- Prevents significant avoidable damage to the environment by requiring changes in projects when governmental agency finds such changes to be feasible
- Discloses to public the reasons why a governmental agency approved the project
- Next steps: CEQA/NEPA document under preparation: Initial Study/Environmental Assessment

## CEQA/NEPA Topics Anticipated

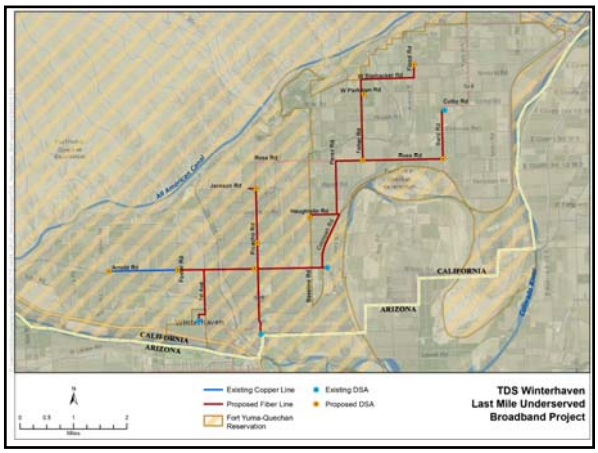
- Aesthetics
- Agricultural Resources
- Air Quality and Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Environmental Justice
- Geology, Soils and Seismic Potential
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services/Utilities and Service Systems
- Recreation
- Socioeconomics
- Transportation/Traffic
- Growth-Inducing and Cumulative Impacts

## Project Objective

To make affordable broadband internet services available to currently underserved areas in Imperial County, including a portion of the Fort Yuma-Quechan Reservation

## Project Background and Purpose

- Winterhaven and other areas of unincorporated Imperial County, including a portion of the Fort Yuma-Quechan Indian Reservation, currently do not have high-speed ("broadband") access to the internet
- TDS granted $2,063,967 from CPUC for project, to match TDS funding of $1,375,978
- In addition to residences, other institutions will benefit—San Pasqual Valley High School, San Pasqual Valley Elementary School, Bill M. Manes High School, San Pasqual Middle School, and San Pasqual Vocational Academy




## Project Components

- 9.01 miles (47,595 feet) of cable installed outside the Fort Yuma-Quechan Reservation
- 6.3 miles (33,264 feet) of cable installed inside the Fort Yuma-Quechan Reservation
- Installation sites along existing roadways with right-of-use and encroachment authorizations—no land acquisitions
- Fiber-optic telecommunications cable and protective 1.25-inch-diameter high-density polyethylene (HDPE) standard dimension ratio (SDR)-11 conduits
- 10 equipment cabinets (each 2' x 3' x 4') installed atop buried epoxy composite vaults, each within 20-square-foot area

## Construction Overview

- Estimated total construction time: two months
- Total ground disturbance not to exceed 12.5 acres
- No staging of equipment or materials in project areas
- Prompt site clean-up and surface restoration following construction
- Once installed, infrastructure essentially maintenance-free

## Construction Details

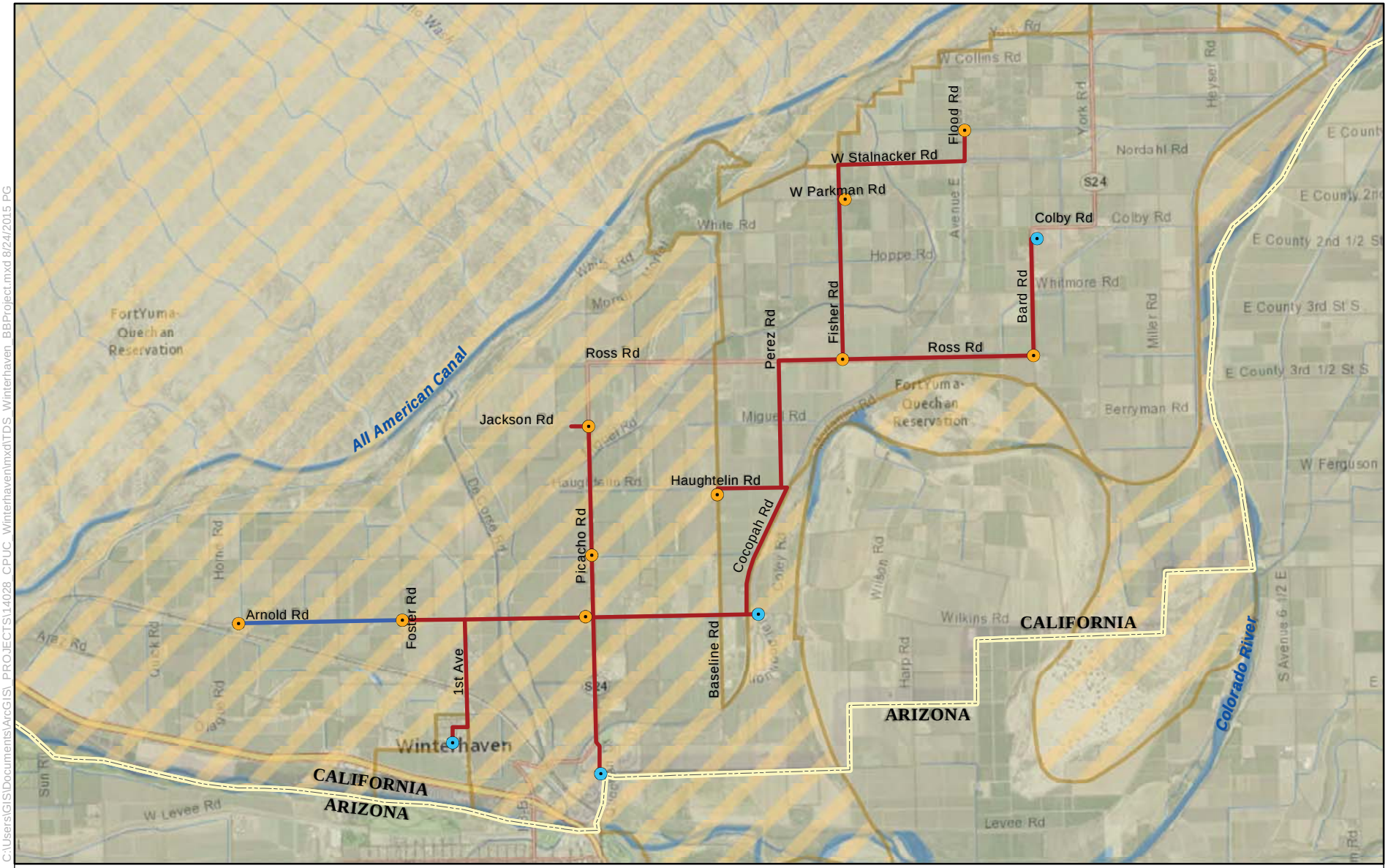
- Plow-type construction (68,101 feet of conduit):
  - Bulldozer with single ripper to loosen soil along installation path
  - Conduit installed at depth of 3.3 feet
  - Ground disturbance limited to 8-foot-wide corridor
- Bore-type construction (12,758 feet of conduit)
  - Horizontal drilling rig with steerable drill bit lubricated with sodium bentonite "mud"
  - Conduit installed at depth of 5 feet
  - Ground disturbance limited to two 8-foot boring pits for each canal/road crossing installation
- Pits for node vaults (3' x 4' x 6') excavated with backhoe

## How to Comment

- Ask your questions or give comments orally tonight.
- Fill out a comment card to submit written comments and questions.
- Submit comments after tonight's meeting by mail, phone or email:

| Mail | Voicemail/Fax | Email |
|---|---|---|
| Rob Peterson, CPUC<br>c/o Tom Engels<br>Horizon Water and Environment<br>180 Grand Avenue, Suite 1405<br>Oakland, CA 94612 | **Voicemail (Toll-Free)**<br>(844) 211-7510<br><br>**Fax**<br>(510) 350-3592 | winterhavenproject@horizonh2o.com |

- Comments due by **5 p.m.** on **Monday, September 28, 2015**.
- For more information, visit the project website: www.cpuc.ca.gov/environment/info/horizonh2o/winterhaven/index.html




# TDS Winterhaven Broadband Project

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# Appendix E

# Comments

# CALIFORNIA PUBLIC UTILITIES COMMISSION
## WINTERHAVEN BROADBAND PROJECT (TDS TELECOM)

## *Comments Provided During August 26, 2015, Public Meeting*

*(transcribed from flipchart)*

The following comments were offered by attendees of the public meeting held at the Paradise Casino, in Yuma, Arizona, on Wednesday, August 26, 2015, from 6:00 to 8:00 p.m. This is a transcription of comments that were noted on flipchart by a member of the consulting team, recording comments made during the public meeting. The comments were given in response to a request for comments on potential environmental issues to study in during environmental review under the National Environmental Policy Act and California Environmental Qua

- There is potential for cable damage from farm activities.
- High groundwater table – potential impacts
- Where is the fiber optic cable coming from?
- There was a previous installation of a communication cable along the railroad tracks, around 2005. [TDS staff in attendance noted that this cable is for a different system.]
- Will you hire monitors for cultural impacts? There is potential for burial sites.
- At the last meeting for this project some property owners objected to the use of their land. [TDS staff in attendance noted that the route has been changed to avoid those properties.]
- The map of the proposed project does not show which side of road the cable will be on. [TDS noted that the cable would be on the north side of Arnold Road and added that they will contact property owners and cannot cross a property without owner's approval.]
- How will the project affect phone service? [TDS noted that the new service includes phone service.]
- It is very difficult to get internet service now.
- Get signatures from the majority of land owners.
- People may not have shown up at this meeting if they thought it was a done deal.
- People who said no to the project may feel there is no more to say, and therefore may not have seen a need to attend the meeting.
- Can't you get internet access from satellite without having to put cable in the land? [TDS staff noted the satellite service is more expensive.]

- Earthquake faults could affect the fiber optic cable.
- Disabled and sick people need landline for emergency calls.
- Farm ditches could affect the project, there are farming activities right up to the road.
- Lots of rutted roads, not much road improvement by the county.
- Can the cable withstand heat? [TDS staff noted that the cable will be put in a housing/encasement and be buried for protection.]
- Rainstorms cause electric outages [TDS staff noted that rain may affect service if a cable is damaged, in which case repairs are made.
- When I call the phone company regarding service problems, they ask me to check the connection inside the house. [TDS staff noted that problems inside the house are the owner's responsibility.]
- Would there be new fees to keep the fiber optic line in service?
- For the previous fiber optic project, there was digging along the tracks done without public notice, tribal council didn't know about it, and landowners did not receive payment.
- Is the project funded by a state grant?
- How many projects are funded by those grants besides this one?
- How much of the project costs are administrative, and how much are project costs?
- Is this the only grant-funded project on tribal land?
- How will landowners be compensated for allowing installation of broadband line on their property?