# DOCKETED

| | |
|---|---|
| **Docket Number:** | 15-RETI-02 |
| **Project Title:** | Renewable Energy Transmission Initiative 2.0 |
| **TN #:** | 216196 |
| **Document Title:** | Appendix B of RETI 2.0 Final Plenary Report |
| **Description:** | Section 368 West Wide Energy Corridor Information |
| **Filer:** | Misa Milliron |
| **Organization:** | California Energy Commission |
| **Submitter Role:** | Commission Staff |
| **Submission Date:** | 2/23/2017 10:03:01 AM |
| **Docketed Date:** | 2/23/2017 |

# Appendix B.
# Section 368 West Wide Energy Corridor Information

Renewable Energy Transmission Initiative 2.0

February 23, 2017

# Acknowledgements

This appendix was prepared by US Bureau of Land Management staff and consultants. Contributors include:

**US Bureau of Land Management**
Georgeann Smale
James Gazewood
Erik Pignata

**Argonne National Laboratory**
Konnie Wescott
Bob Moore
Jim Kuiper

**Aspen Environmental Group**
Susan Lee
Brewster Birdsall

# Introduction

This appendix to the *RETI 2.0 Plenary Report* provides additional information used in the evaluation of in-state transmission assessment focus areas (TAFA) summarized in Part 2 of the *RETI 2.0 Plenary Report* and in Appendix A. This information is also used in the description of potential transmission constraints and conceptual solutions discussed in Part 3 of the *RETI 2.0 Plenary Report*.

The information in this appendix reflects a high-level summary of issues known by US BLM to potentially affect transmission development in the Section 368[1] West Wide Energy Corridors that potentially overlap with transmission corridors identified in Part 3 of the *RETI 2.0 Plenary Report.* This information contributes to the RETI 2.0 assessment as environmental, land use, and permitting data to inform the summaries and conclusions presented in Part 3 of the *Plenary Report*.

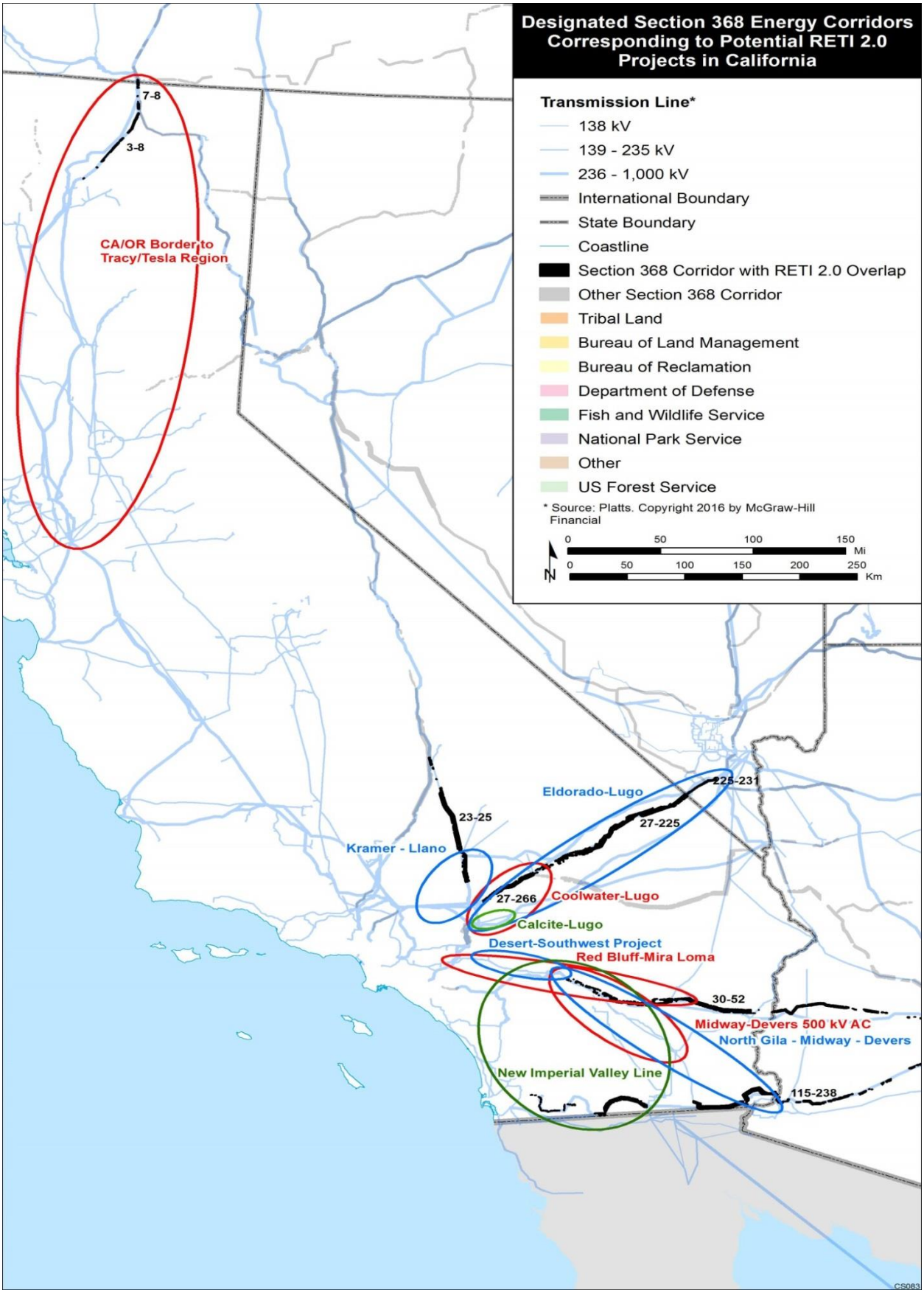
This Appendix was prepared at the request of the RETI 2.0 staff by US BLM and Argonne National Laboratory staff. BLM and Argonne reviewed the potential transmission constraints and conceptual solutions identified by the TTIG and described in Part 3 of the Public Review Draft (PRD) to identify where overlaps between these conceptual solutions and designated Section 368 energy corridors do and do not exist.

This review was not comprehensive. BLM only looked for overlap where major new transmission lines were identified as a conceptual solution by the TTIG. And the issues identified are not an exhaustive list, but are intended as high-level and indicative. The appendix includes:

- **Map of Designated Section 368 Energy Corridors corresponding to RETI 2.0 potential transmission constraints and conceptual solutions:** This map identifies existing Section 368 Energy Corridors that correspond to transmission corridors identified in Part 3 of the *RETI 2.0 Plenary Report* as potentially constrained under the hypothetical development study range assessed in RETI 2.0.
- **Tabular comparison of RETI 2.0 conceptual transmission solutions with existing designated Section 368 Corridors:** This table identifies the potential match between RETI 2.0 and Section 368 corridors, describes the degree and locations of any match, and provides a high-level synopsis of some of the environmental, land use, and permitting issues of which BLM is aware that could affect transmission development in those Section 368 Corridors.

[1] Section 368 of the federal Energy Policy Act of 2005 directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate West Wide Energy Corridors on federal land in 11 western states that identify the preferred locations for the development of energy transport projects. Nearly 6,000 miles of energy corridors were designated on lands administered by the U.S. Forest Service (FS) and Bureau of Land Management (BLM). These locations were selected to avoid significant known resource and environmental conflicts, promote renewable energy development in the West, improve reliability, relieve congestion, and enhance the capability of the national grid to deliver electricity.

In 2012, the agencies agreed to periodic review of the Section 368 corridors and to consider the revision, deletion, or addition of corridors. BLM is currently leading the interagency energy corridors review for Region 1 that includes Southern California, southern Nevada, and western Arizona (to be completed in mid-2017) and will lead the Region 5 Review (Northern California and northwestern Nevada) in 2018.


Designated Section 368 Energy Corridors Corresponding to Potential RETI 2.0 Projects in California
Transmission Line*
138 kV
139 - 235 kV
236 - 1,000 kV
International Boundary
State Boundary
Coastline
Section 368 Corridor with RETI 2.0 Overlap
Other Section 368 Corridor
Tribal Land
Bureau of Land Management
Bureau of Reclamation
Department of Defense
Fish and Wildlife Service
National Park Service
Other
US Forest Service
* Source: Platts. Copyright 2016 by McGraw-Hill Financial
0 50 100 150 Mi
0 50 100 150 200 250 Km
N
7-8
3-8
CA/OR Border to Tracy/Tesla Region
23-25
Kramer - Llano
Eldorado-Lugo
225-231
27-225
27-266
Coolwater-Lugo
Calcite-Lugo
Desert-Southwest Project
Red Bluff-Mira Loma
30-52
Midway-Devers 500 kV AC
North Gila - Midway - Devers
New Imperial Valley Line
115-238
CS083

## Tabular Comparison of RETI-2.0 Conceptual Transmission Solutions with Existing Designated WWEC Section 368 Corridors

| RETI-2.0 Conceptual Transmission Solutions | WWEC Sec 368 Corridors in Proximity | General Comments Regarding 368 Corridors for Potential RETI-2.0 Conceptual Transmission Solution Use | Designated 368 Corridor Current Situation Synopsis |
|---|---|---|---|
| CA/OR Border to Tracy/Tesla region | 7-8[1] & 3-8[1] | These two 368 corridors link to provide a match for the first 75 miles south from the CA/OR border across fragmented BLM and FS jurisdiction with intervening non-federal ownership. No other 368 corridors come close for the remainder of the nearly 250 mile distance through the Sacramento Valley. | Corridors are located on fragmented BLM, U.S. Forest, Service and non-Federal lands<br>Corridors support an existing transmission line.<br>Sensitive area for Native American concerns. |
| Coolwater-Lugo | 27-266[2] | This 368 corridor provides a close match for about 33 miles of the potential upgraded line, but the southern 18 miles pass through private land. | Corridor supports three existing SCE lines between Lugo and Pisgah and Lugo and Eldorado Substations.<br>Entirely within the California Desert Conservation Area.<br>Crosses the Ord-Rodman, Northern Lucerne Wildlife Linkage, and Daggit Ridge ACECs.<br>Intersects a Tortoise conservation area, Southwestern Willow Flycatcher critical habitat and Mohave Ground Squirrel priority habitat. |
| Red Bluff-Mira Loma | 30-52[2] | This 368 corridor provides a match for the desert segment of the potential upgraded line segment. The Mira Loma Substation is nearly 50 miles west of the last section of federal land in the Red Bluff-Mira Loma corridor. | The Devers-Palo Verde and Colorado River-Devers 500 kV lines occupy this corridor between Red Bluff and Devers Substation. West of Devers, the corridor is primarily private land and supports only 220 kV circuits.<br>The San Gorgonio Pass area (North Palm Springs to Beaumont) is constrained for additional transmission development. Two national monuments are located on respective sides of the interstateWithout tribal approval, future expansion |

| RETI-2.0 Conceptual Transmission Solutions | WWEC Sec 368 Corridors in Proximity | General Comments Regarding 368 Corridors for Potential RETI-2.0 Conceptual Transmission Solution Use | Designated 368 Corridor Current Situation Synopsis |
|---|---|---|---|
| | | | in this corridor will require either expansion of the Devers-Valley corridor or other equally challenging major re-routing alternatives to make this corridor viable for expanded energy transmission.<br>Potential constraints at western end of corridor north of Palm Springs, where multiple lines converge at the Devers Substation. Future planning efforts should consider fine-tuning future transmission corridors around existing residences and wind projects to ensure long-term viability for expanded energy transmission.<br>Undesignated portion spans Indio Hills State Park (CA).<br>Corridor crosses specially designated areas including: Chuckwalla, Palen Ford, and Alligator Rock ACEC; California Desert Conservation Area, State Wildlife Preserve in a non-federal corridor gap (Coachella Valley Preserve – Thousand Palms Oasis Preserve), Coachella Valley National Wildlife Refuge, and corridor abuts other ACEC or Wilderness Areas |
| Midway-Devers 500 kV AC | 30-52[2] | This 368 corridor provides a close match for about the westernmost 12 to 14 miles of the potential project across very fragmented BLM jurisdiction with intervening non-federal ownership. However, the Midway Substation is about 50 miles south of this corridor. An existing transmission line occupies the potential route, which may be a BLM designated corridor for the approximately 30% of the route that is on federal land, | Corridor crosses specially designated areas including: Coachella Valley Fringe-toed Lizard ACEC, California Desert Conservation Area, State Wildlife Preserve in a non-federal corridor gap (Coachella Valley Preserve – Thousand Palms Oasis Preserve), Coachella Valley National Wildlife Refuge.<br>Existing residential areas and wind generation projects along this corridor segment. |

| RETI-2.0 Conceptual Transmission Solutions | WWEC Sec 368 Corridors in Proximity | General Comments Regarding 368 Corridors for Potential RETI-2.0 Conceptual Transmission Solution Use | Designated 368 Corridor Current Situation Synopsis |
|---|---|---|---|
| | | but it is not a designated 368 corridor. | |
| Desert Southwest Project | 30-52[2] | This 368 corridor provides a close match for virtually the full length of the potential new line with increasingly fragmented BLM jurisdiction as the corridor proceeds from east to west. | The San Gorgonio Pass area (North Palm Springs to Beaumont) is constrained for additional transmission development. Two national monuments are located on respective sides of the interstate. Without tribal approval, future expansion in this corridor will require either expansion of the Devers-Valley corridor or other equally challenging major re-routing alternatives to make this corridor viable for expanded energy transmission.<br>Existing residential areas and wind generation projects along this corridor segment. |
| N. Gila-Midway-Devers | 30-52[2] & 115-238[2] | Corridor 30-52 provides a close match for about the westernmost 12 to 14 miles of this project across very fragmented BLM jurisdiction with intervening non-federal ownership. No 368 corridor matches the 90-mile long middle segment of the project (see Midway-Devers, above), but a BLM California Desert District designated corridor may match the federal segments of that portion. | See Corridor 30-52 Current Situation Synopsis (above).<br>Corridor 115-238 crosses into Yuma Proving Grounds to avoid Muggins Mountains Wilderness and the corridor is not designated on DoD administered land.<br>Corridor has gaps on Federal land where proposed ROWs need to cross the Colorado River..<br>Routing around the Quechan Reservation on a BLM California Desert District designated corridor recommended to avoid crossing of the reservation by additional transmission projects. |

| RETI-2.0 Conceptual Transmission Solutions | WWEC Sec 368 Corridors in Proximity | General Comments Regarding 368 Corridors for Potential RETI-2.0 Conceptual Transmission Solution Use | Designated 368 Corridor Current Situation Synopsis |
|---|---|---|---|
| | | About 50 miles of Corridor 115-238 would be used for the easternmost segment of this project with considerable fragmented BLM jurisdiction, DoD Yuma Proving Ground jurisdiction, unresolved issues at the Colorado River crossing, and uncertain routing across or around the Fort Yuma-Quechan Indian reservation. | |
| CFE (from IID to CFE) | 115-238[2] | This 368 corridor may provide a pathway for a portion of the project, depending on the alternative selected. | The TTIG report describes "several alternatives under evaluation". The most likely scenario may be an expansion of the existing 230 kV corridor from the Imperial Valley Substation south into Mexicali. The first mile from the IV Substation would be within the 115-238 corridor; south of that, the route is not on federal land.<br>Flat-tailed horned lizard habitat surrounds the substation and there is limited mitigation land available. |
| Eldorado-Lugo | 225-231[2] & 27-225[2] | These two 368 corridors provide a match for virtually the full length of the potential upgraded line without intersecting the Mojave National Preserve. The western 35 miles crosses fragmented BLM jurisdiction with intervening non-federal ownership. See also Coolwater-Lugo (above), a subset of this solution. | These corridors are occupied by several important transmission lines that import power from Hoover Dam and other generators. Upgrades would require study of potential ROW expansion, consideration of DRECP conservation designations, and potential rebuilding of existing lines.<br>Corridor 225-231 crosses critical habitat for desert tortoise.<br>Corridor 27-225 crosses critical habitat for desert tortoise and bighorn sheep in several locations. |

| RETI-2.0 Conceptual Transmission Solutions | WWEC Sec 368 Corridors in Proximity | General Comments Regarding 368 Corridors for Potential RETI-2.0 Conceptual Transmission Solution Use | Designated 368 Corridor Current Situation Synopsis |
|---|---|---|---|
| | | | Corridor 27-225 intersects and is adjacent to multiple ACECs (Mojave Fringe-toed Lizard, Afton Canyon, Cronese and Superior-Cronese Basin, Shadow Valley , Soda Mountain, Manix, and Ivanpah ). |
| Kramer-Llano | 23-25 | The northernmost 17 miles of this potential new route would be in a designated 368 corridor at the eastern end of Edwards AFB. The southern 25-30 miles would be located on private land. | Several major transmission lines utilize Corridor 23-25 north and south of the Kramer Substation.<br>At least ten transmission lines and pipelines occupy and cross the corridor, limiting the options for additional projects.<br>Desert Tortoise designated critical habitat and Mohave Ground Squirrel priority habitat..<br>Slow speed military training route.<br>Corridor 23-25 intersects the Fremont-Kramer ACEC in this area |
| Calcite-Lugo | None | This is a sub-set of the Coolwater-Lugo expansion described above and is entirely within this designated corridor. | California Desert District corridor supports three existing SCE lines between Lugo and Pisgah and Lugo and Eldorado Substations.<br>Entirely within the California Desert Conservation Area.<br>Crosses the Ord-Rodman, Juniper Flats and Granite Mountain Corridor ACECs.<br>Intersects a Tortoise conservation area, Southwestern Willow Flycatcher critical habitat and Mohave Ground Squirrel priority habitat. |
| New Imperial-Valley Line | None | No 368 corridor provides a close match for this proposed project. A California Desert District designated corridor may provide a close match for this project | The route segment east and north of Anza-Borrego Desert State Park crosses tribal land, the Santa Rosa-San Jacinto National Monument, and US Forest Service Roadless Areas<br>If the Imperial-Valley line followed the Devers-Valley |

| RETI-2.0 Conceptual Transmission Solutions | WWEC Sec 368 Corridors in Proximity | General Comments Regarding 368 Corridors for Potential RETI-2.0 Conceptual Transmission Solution Use | Designated 368 Corridor Current Situation Synopsis |
|---|---|---|---|
| | | from El Centro to the Northeast corner of Anza-Borrego Desert State Park. | 500 kV corridor, it is occupied by two 500 kV lines, leaving minimal room for expansion. Passes through constrained ROW in US Forest Service wilderness. |

[1] *Denotes that these corridors will be analyzed within the ongoing or planned Sec. 368 Energy Corridor Periodic Regional Reviews. These corridors will be reviewed within the Sec. 368 Region 5 Review scheduled for early 2019. Stakeholder input will be used to identify possible Sec. 368 corridor additions, modifications or deletions.*

[2] *Denotes that these corridors will be analyzed within the ongoing or planned Sec. 368 Energy Corridor Periodic Regional Reviews. These corridors are currently under review within the Sec. 368 Region 1 Review scheduled for completion in early 2017. Stakeholder input will be used to identify possible Sec. 368 corridor additions, modifications or deletions.*