APPENDIX Y
PROJECT DESIGN AND IMPLEMENTATION
PLAN OF DEVELOPMENT REFINEMENT
PROCESS
TRANSWEST EXPRESS TRANSMISSION PROJECT

Project Design and Implementation

Plan of Development Refinement Process

Project Background

TransWest Express LLC (TransWest) proposes to construct, operate and maintain the TransWest Express Transmission Project (TWE Project or Project). The TWE Project is an extra-high voltage (EHV) direct current (DC) transmission system extending from south-central Wyoming to southern Nevada. The TWE Project begins at a northern terminal near Sinclair, Wyoming and terminates at a southern terminal at the Marketplace Hub in the Eldorado Valley near Boulder City, Nevada. At each of the terminals, there will be an alternating current/direct current (AC/DC) converter station designed to convert the DC current carried by the TWE Project to AC current to be carried on the western United States AC electrical grid (the northern and southern terminals). The TWE Project is planned to interconnect into the Eldorado Substation, the McCullough Switching Station, the Marketplace Substation and the Mead Substation. Western Area Power Administration, a Federal power marketing administration within the United States Department of Energy, has partnered with TransWest in the development of the TWE Project.

Because it is necessary for the TWE Project to cross federal lands, a ROW application was filed with BLM in 2007. The application was amended by TransWest in 2008 and again in 2009 and 2010. To comply with the National Environmental Policy Act (NEPA), BLM and Western are preparing an Environmental Impact Statement (EIS). Public scoping was conducted in 2011 and in July 2013 BLM and Western published the Draft Environmental Impact Statement for the TWE Project (DEIS). The Proposed Action is approximately 726 miles in length. In addition, approximately 2,263 miles of Alternatives were analyzed in the DEIS.

Plan of Development

A Plan of Development (POD) documents a federal right-of-way applicant’s construction, operation, rehabilitation and environmental protection plan. See 43 CFR 2804.25 The POD is a dynamic document updated as a project progresses through the NEPA review and analysis process. A POD may require different information from the applicant depending upon the environmental resources that may be impacted, the location of the proposed project, and the timing of the project. There may be information required from one applicant that is not required by another applicant because of the issues or resources involved. Additional supplementary information may be required from the applicant in order to prepare the NEPA analysis and complete the review process but is not required to be submitted with the initial POD. This
information is developed as further data is gathered and as detailed designs and mitigation measures are incorporated into a final POD. See BLM Instruction Memorandum No. 2009-043.

**TWE Project Plan(s) of Development**

The POD for the TWE Project serves many purposes. For the Project, the POD will:

- Provide the project description and technical information necessary for the federal agencies to conduct required environmental reviews of the Project, including compliance with the NEPA.
- Identify TransWest’s construction plans and specifications, including federal agency stipulations, conditions of approval, environmental requirements and best management practices (BMPs).
- Support the federal agencies Record of Decision (ROD) for the Project.
- Meet all federal land management agency requirements for issuance of right-of-way (ROW) grants or special use permits.
- Provide the basis for the federal land management agencies to issue Notices to Proceed (NTP) for construction, operation and maintenance of the Project.
- Balance project design development with the extent of available siting opportunities and constraints data throughout the federal approval process.

For the TWE Project, the working assumptions for preparing the POD at each stage of the Project are:

1. PODs are submitted at corresponding major Project milestones with a level of detail appropriate to the federal agencies’ analysis and decision timeline. POD versions are as follows:
   a. November 2007 Preliminary SF 299 POD (prepared by National Grid)
   b. January 2009 Preliminary Scoping POD
   d. February 2014 (estimate) Preliminary Final EIS (FEIS) POD
   e. September 2014 (estimate) Preliminary ROD POD
   f. 2015-2016 (estimate) Final NTP PODs
2. Each involved federal agency (BLM, USFS, USBOR and NPS) will issue its own Record of Decision, all to be issued concurrently.
3. ROW Grants and Special Use Permits are to be issued concurrently with the RODs
4. Multiple NTPs are anticipated, each to be issued on a construction segment basis as appropriate to address agency jurisdiction, seasonal constraints, preconstruction surveys, acquisition of private ROW, agency review of the NTP POD, work planning and scheduling, etc.
5. ROW Grants/Special Use Permits will authorize the following facilities on federal lands:

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1 IM 2009-43 is specific to wind energy projects on public lands administered by BLM; however, the general discussion on plans of development is applicable to any Federal Land Policy and Management Act (FLPMA) right-of-way application.
a. BLM – Permanent 250 ft. wide ROW for the transmission line and permanent access roads within the transmission ROW defined in the ROD POD plus permanent ROW for non-linear facilities (Terminals, Ground Electrode Facilities, Series Compensation Stations for Design Alternatives).
b. BLM – Permanent 50 ft. wide ROW for access roads outside of the transmission line ROW.
c. BLM – Temporary work areas and access roads outside of and in addition to the ROW Grant for the permanent ROWs.
d. USFS – Permanent 250 ft. ROW for the transmission line and permanent access roads within the corridors defined in the FEIS.
e. USFS – Permanent 50 ft. wide ROW for access roads outside of the transmission line ROW.

Definitions, Abbreviations and Acronyms

Definitions, abbreviations and acronyms used in this document are contained in Exhibit A attached.

TWE Project Progression

Proper siting of a transmission project involves an initial evaluation at a regional level, followed by more focused studies that inform refinement of siting options leading to the eventual selection of a ROW location. Corridor studies serve to focus attention on relevant siting issues at each stage of the process. Narrowing Transmission Line Corridors at key milestones based on best available information is a logical progression as a project proceeds through the siting process. For instance, for the TWE Project six-mile wide Transmission Line Corridors focused attention primarily on land jurisdiction and landscape level issues. The generally two-mile wide Transmission Line Corridors resulted in more focused attention on biological habitats, visual impacts, and local land uses. As the Transmission Line Corridors are narrowed for the FEIS, resources at the micro-scale will be examined and relative values and trade-offs considered such that the resulting project will be sited to avoid and minimize impacts to the extent practicable preventing undue and unnecessary degradation of public lands.

The discussion below first focuses on PODs for each Project milestone, describing the purpose and contents of each. With that background and context, a discussion of corridor narrowing follows with a description of the process and procedures employed by TransWest to identify the final ROW location.

Milestone Plans of Development

TransWest’s POD development approach is consistent with federal agency policy to provide a dynamic project development plan containing information relevant to the agencies’ analysis of the ROW application and the federal decision to be made. The following outlines the PODs to be submitted at each Project milestone and the available data utilized in preparing each POD. For each POD, a set of graphics are provided at the end of this document (Figures 1 through 8).
The graphics focus on two hypothetical public lands settings in rolling terrain to highlight the differences between typical siting in co-located settings versus greenfield settings.

1. **SF 299 POD (November 2007, submitted by National Grid)**

   The SF 299 POD was filed along with an initial ROW application (SF 299) for construction, operation and maintenance of a proposed high-voltage transmission line(s) extending between eastern Wyoming and the desert Southwest. The application and SF 299 POD was submitted by National Grid, the initial Project developer.

   The SF 299 POD contained a very preliminary description of the Project and identified a regional study area and preliminary corridors. The Project facilities description was based upon industry ‘typicals’ and the POD did not provide information on routes or detailed engineering.

   Data utilized consisted of publically available regional environmental data and transmission and utility infrastructure.

2. **Scoping POD (January 2009)**

   The Scoping POD was filed along with an amended ROW application to reflect a revised purpose and need for the Project after TransWest became the developer. The Scoping POD facilitated internal and cooperating agency scoping meetings and defined the initial scope of the NEPA analysis.

   The Scoping POD identified proposed and alternative routes within six-mile wide Transmission Line Corridors based upon regional studies. The Project facilities description was revised for a 600 kV DC transmission line and two AC/DC convertor stations. Information on construction, operation and maintenance of a DC transmission system was provided based upon a very preliminary level of engineering.

   Data utilized consisted of publically available regional environmental data and transmission and utility infrastructure and mitigation and environmental protection measures from the West-Wide Energy Corridors Final Programmatic EIS.

3. **DEIS POD (July 2010) as amended and supplemented by the PDTR (October 2012), Attachment D to the DEIS (July 2013)**

   The DEIS POD provided a description of the TWE Project Proposed Action, project description, including construction, operation and maintenance practices, and preliminary environmental mitigation measures and BMPs. These Practices were provided in preliminary format as frameworks and descriptions of specific plans that will be developed and included within subsequent versions of the POD with all plans completed and included in the NTP POD. The DEIS POD also provided a description of the TWE Project Design Alternatives.
Transmission Line Corridors (generally two-miles wide) and Reference Lines within those Transmission Line Corridors for all alternatives identified by BLM were included in the DEIS POD. Transmission Line Corridors were sized such that potential new access roads would be located within the Transmission Line Corridors.

The DEIS POD/PDTR included indicative disturbance data tables for all DEIS Alternatives based on a methodology to model potential disturbance (PDTR Section 3.5.2.1 and Appendix A including March 1, 2011 Memorandum, TransWest Express Transmission Project – Access Road Methodology).

The DEIS POD/PDTR was utilized by the BLM to provide the project description for the DEIS upon which impacts analysis was conducted.

The generally two-mile wide Transmission Line Corridors in the DEIS POD provided the public an opportunity to comment on Transmission Line Corridors at a regional level (e.g., should the line be sited in the West-Wide Energy Corridor along U.S. Highway 40 or through a greenfield route in the southern Uinta Basin?) and at a local level (e.g., opportunity for siting through a pasture next to previously disturbed pipeline ROW or avoid siting through irrigated agricultural field).

Data utilized consisted of available BLM field office and USFS district office environmental data, State environmental data, National Wetlands Inventory data, Natural Heritage Program data, commercially available satellite imagery supplemented by TransWest aerial imagery.

Engineering design was based upon selection of suitable structure types, preliminary engineering of terminals and ground electrode facilities and experience with other transmission projects in similar terrains.

Figures 1 and 2 below depict a typical, conceptual section of the generally two-mile wide Transmission Line Corridor with a Reference Line and the level of engineering information available for the DEIS POD.

4. **FEIS POD (data to be provided November 2013, document to be provided February 2014)**

The FEIS POD will provide a description of the TWE Project Proposed Action, Preliminary Agency Preferred Alternative from the DEIS and other Alternatives carried forward into the FEIS. The FEIS POD will contain an updated project description, including construction, operation and maintenance practices, environmental mitigation measures, and BMPs. The construction, operation and maintenance practices provided in the DEIS POD/PDTR will be updated to provide more current detailed information.

The FEIS POD will provide Preliminary Engineered Alignments based upon additional engineering, aerial terrain surveys, field engineering surveys, and siting opportunity and
constraint data from the DEIS. The FEIS POD may also consider public comments on the DEIS based upon BLM’s direction. The Transmission Line Corridors (generally two-miles wide) will be refined and narrowed based on currently available siting constraints information and potential for further siting refinements. In refining and narrowing the Transmission Line Corridors, consideration will be given to terrain, access restrictions, existing access, designated utility corridors, environmental constraints, jurisdictional constraints, co-location, landowner requests and the potential for changes between the FEIS POD and the ROD POD. The variables that principally impact the certainty of the Final Engineered Alignment of the TWE Project are terrain, jurisdiction (federal, state or private) and the proximity of the alignment to existing transmission lines and other infrastructure. The FEIS POD will provide revised indicative disturbance data tables using the methodology described in the PDTR Appendix A to determine potential acreages of temporary and permanent disturbance for all Alternatives as was used in the DEIS analysis. The modeled data will include revisions to capture the relatively smaller disturbance footprint associated with new access roads tied into the existing access road network of co-located transmission lines.

Figures 3 and 4 below depict a typical, conceptual section of the refined Transmission Line Corridor with Preliminary Engineered Alignments and the level of engineering information that will be available for the FEIS POD.

5. **Record of Decision POD**

The ROD POD will provide revised Preliminary Engineered Alignments for the FEIS Agency Preferred Alternative (or the selected alternative if different) in consideration of any new or additional data provided by agencies or from field surveys (i.e., biological or other resource surveys), additional LIDAR data and field engineering data.

Based on detailed design, the ROD POD will provide initial layout of all temporary work areas including wire-pulling, tensioning (stringing sites) and splicing sites, staging areas/fly yards, terminals, ground electrodes, and regeneration sites and all existing and new access roads to each structure location for the Agency Preferred Alternative.

The ROD POD will contain the Framework Traffic and Transportation Management Plan along with detailed mapping of all proposed structure locations, backbone access network, existing access, existing access with improvements, overland access and proposed new access.

Figures 5 and 6 below depict a typical section of the refined Transmission Line Corridor and the Preliminary Engineered Alignment and the level of engineering information that will be available for the ROD POD. Additional corridor refinements in select areas may be made at the direction of the federal agencies for special management areas or areas with extreme environmental constraints.
6. Notice To Proceed POD

The NTP POD will be the final POD and will incorporate the Construction, Operation and Maintenance Plan (COMP). The NTP POD will detail TransWest’s construction plans and specifications, and construction practices and procedures for the selected alternative. The NTP POD will also describe the processes and procedures TransWest will employ to comply with the requirements of the RODs for the Project and include the Environmental Compliance Management Plan. The NTP POD is intended to be appended to the BLM ROW Grant and the USFS Special Use Permit.

Due to the length and complexity of the TWE Project, multiple NTPs are anticipated; therefore, TransWest envisions preparing a Project NTP POD and POD Appendices. Proceeding in this manner is anticipated to minimize the number of variance requests for the Project as each NTP POD Appendix will be based upon field verified segment-specific construction plans incorporating all known resource data including field survey results.

**Project NTP POD.** The Project NTP POD will address overall TWE Project guidelines, compliance with agency mitigation requirements, and stipulations and conditions of approval common to the entire Project. It will also include construction practices and compliance plans common to the entire Project.

**NTP POD Appendices.** The NTP POD Appendices will consist of construction segment-specific project descriptions; final detailed engineering; mapping describing structure locations, access road layouts, temporary work areas, etc.; segment-specific COMP practices and compliance plans, and stipulations and conditions of approval for the Project segment covered by the request for a NTP. Any changes to the Preliminary Engineered Alignment necessitated by results of preconstruction surveys will be incorporated into the NTP POD Appendices, resulting in a Final Engineered Alignment.

In accordance with the overall objectives outlined above, the following activities will be performed after the issuance of the RODs and ROW Grants/Special Use Permits:

a. Acquisition of ROW on state and private lands
b. Completion of final engineering to include final structure locations, final access road layout including field verification of structure locations and proposed access roads for the selected alternative
c. Layout and field verification of all temporary work areas to include material storage yards, fly yards/laydown areas and portable concrete batch plants
d. Class III cultural resource and biological preconstruction surveys, completion of analysis and preparation of summary reports
e. Jurisdictional Waters of the U.S. delineation and any other resource surveys required to support permitting
f. Acquisition of remaining federal permits and acquisition of required state and local permits
g. Preparation of the main body of the Project NTP POD to address all mitigation measures, stipulations and conditions of approval set forth in the RODs, including fully developed management plans for the following:2
   i. General Construction, Operation and Maintenance Practices
   ii. Avian Protection Plan
   iii. Cultural Resources/Historic Properties Treatment Plan
   iv. Fire Protection Plan
   v. Greater Sage Grouse Habitat Equivalency Analysis, Mitigation and Monitoring Plan
   vi. Vegetation Management Plan
   vii. Noxious Weed Management Plan
   viii. ROW Preparation, Rehabilitation, Restoration and Monitoring Plan
   ix. Wetlands and Waters of the US Mitigation Plan
   x. Wildlife Species Conservation Measures Plan
   xi. Paleontological Resources Treatment Plan
   xii. Traffic and Transportation Management Plan
   xiii. Storm Water Pollution Prevention Plan
   xiv. Spill Prevention, Containment and Countermeasures Plan
   xv. Dust Control and Air Quality Plan
   xvi. Blasting Plan
   xvii. Hazardous Material Management Plan
   xviii. Emergency Preparedness and Response Plan

Figures 7 and 8 below depict the typical process involved in progressing from the Preliminary Engineered Alignment to the Final Engineered Alignment based on preconstruction field surveys (Cultural Class III surveys in these examples). Once the Final Engineered Alignment is complete, mapping will be prepared and presented as an Appendix to the NTP POD for agency review and approval.

**Corridor Refinement Process**

Siting and evaluation of transmission facilities is a dynamic process. Experience has proven that starting with a broad evaluation area, and then refining that area as more information is obtained and public input gathered leads to informed and defensible decision making. Analyzing a representative reference line within a wider Transmission Line Corridor is appropriate for the DEIS level of impact analysis. This approach allows the federal agencies to be responsive to cooperating agency concerns as well as public feedback obtained through the DEIS public comment period. Indeed, one of the purposes of the DEIS public comment period is to ensure that all relevant information and public views are considered prior to the federal agencies making a final decision. Analyzing impacts on a broader scale than the 250-foot transmission line ROW in the DEIS provides greater disclosure of potential impacts - the fundamental purpose of NEPA. This DEIS corridor can then be narrowed as the environmental analysis progresses through the

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2 Note: This is a preliminary list subject to revision.
FEIS, ROD and issuance of a Notice to Proceed, allowing adjustments to the final ROW to be made as information continues to be gathered, resulting in avoiding and minimizing impacts to resources to the greatest extent practicable. “Decide and Defend” where a proponent and agency decide on an exact ROW location prior to all the facts being known and then defends the decision is an outdated mode of transmission line permitting that neither allows for public involvement nor permits consideration of new information to avoid and minimize impacts.

The TWE Project was initially evaluated on a regional basis (SF 299 POD). Transmission Line Corridors were then refined to approximately six miles wide based upon a non-engineered reference line (Scoping POD). As further information was gathered and reviewed, Transmission Line Corridors were reduced to generally two-miles wide (DEIS POD/PDTR). TransWest proposes to further refine the DEIS Transmission Line Corridors (FEIS POD) for analysis in the FEIS based on new information and DEIS public comments. TransWest anticipates that these refined Transmission Line Corridors will be carried through to the RODs and ROW Grants/Special Use Permits but that the POD will continue to be refined with a focus on the selected alternative (ROD POD). The NTP POD and Appendices will define the final ROW for TWE Project facilities. Outlined below is the process under which the Transmission Line Corridors will be refined for the FEIS POD and the NTP POD and Appendices.

Terrain is one of the fundamental design parameters used in the design and siting of transmission lines, structures and access roads. In the early stages of a project, available terrain data is usually limited to USGS topographic data (±30 feet). As a project progresses, satellite imagery, aerial photography and LIDAR (± 3 feet) are usually obtained. Transmission line design and siting to develop specific structure locations and heights utilizes tools, such as PLS CADD, that optimize (e.g. minimize the number of towers and access roads while avoiding and minimizing environmental impacts) the alignment of the transmission line based on the design criteria and terrain. An Engineered Alignment developed using these tools but with poor quality terrain data cannot be optimized and likely will require redesign with significant differences in structure locations either when high quality terrain data, such as LIDAR, is obtained later in the design/permitting process or during construction. To augment the quality of the design and siting, field verification of preliminary structure sites and in particular the angle or ‘PI’ (point of intersection) structure sites are often conducted to ensure the viability of these sites. Data from these field surveys are then used to refine the design and siting.

Rugged terrain presents unique challenges to siting transmission lines and introduces more uncertainty with respect to the final location of structures and access roads absent the full complement of technical and environmental data. As a consequence, greater differences between the Preliminary Engineered Alignments and Final Engineered Alignments in rugged terrain are more likely than in flat terrain. For example, a siting constraint located in mountainous terrain may require relocation of the transmission line to a farther ridge or hollow as opposed to a nearby cliff face or other highly undesirable location. Therefore, TransWest has developed criteria as described in the PDTR for various terrain types and categorized each Alternative segment by these terrain types ranging from flat, rolling, steep, to mountainous.
In order to assist in the design and siting optimization of the Project, TransWest has contracted to obtain LIDAR data based upon a ‘best guess’ as to the viable alternatives that may comprise the alternative route selected in the ROD. Where available, LIDAR data, along with additional field verification data, will be used to refine corridors throughout development of the FEIS POD and the ROD POD. The NTP POD and Appendices will be based upon digital terrain models generated using high-quality LIDAR data for the selected alternative.

TransWest has also developed different criteria for federal lands and private lands (for purposes of corridor refinement, TransWest is treating state lands as private lands). This is because additional flexibility is required on private lands to address any unique landowner concerns or circumstances that may arise during the ROW acquisition process.

Another important parameter in the design and siting of a transmission line within a given segment is the proximity of other transmission lines. In locations where there is an existing transmission line, the design of the new line is somewhat advanced and at the same time complicated by the existing lines. Overall, co-locating a line adjacent to an existing transmission line results in more certainty of the final design as the existing line has already established the general alignment and an access road network that can potentially be used by the new line. In instances where the existing transmission line does not run parallel to field lines or development has sprung up adjacent to the existing transmission line, co-location may actually be difficult to accomplish without creating greater impacts. However, most often co-location presents more opportunities than constraints as the siting of the existing transmission line likely selected an alignment of least resistance. Therefore for a given terrain type and land ownership type, the certainty of the transmission line location is higher in co-located settings versus greenfield settings.

As shown in Table 1. TransWest has developed a recommended Transmission Line Corridor width for each of these settings as defined by these fundamental design parameters, and has categorized each segment by these parameters and designated each segment for a particular Transmission Line Corridor width. The three typical refined Transmission Line Corridor widths are 500 feet, 1,800 feet and 3,600 feet.

In addition to the typical Transmission Line Corridor widths outlined above and in Table 1, TransWest is also refining Transmission Line Corridors based on review of environmental constraints information. These constraints are identified in the DEIS and provided by the agencies as shapefiles for GIS analysis. The BLM identified areas and issues to consider for Transmission Line Corridor refinement including:

1. Special Management Areas (SMAs) that are managed as no surface use (NSU) by the agencies.

2. Special Status Species (SSS) known occurrence and modeled habitat to minimize and more accurately define the geographic extent of survey requirements. Sage-grouse leks and NSU buffers, and Preliminary Priority Habitat exclusion areas are included.
3. National Historic and Scenic Trails (NHT, NST, respectively) crossings (contributing segments) and related Special Recreation Management Areas (SRMAs).

4. Landslide-prone Areas where flexibility for routing should be maintained.

5. USFS Inventoried Roadless Areas (IRAs) and Unroaded/Undeveloped (URUD) areas that can be completely avoided and removed from corridor.

6. Designated utility corridors should be utilized in desert tortoise crucial habitat and supporting Areas of Critical Environmental Concern (ACEC).
Table 1 – General Refined Corridor Widths in Accordance with Setting and Approximate Miles of Each Width

<table>
<thead>
<tr>
<th>Terrain Type</th>
<th>Land Ownership</th>
<th>Proximity to Other Transmission Lines</th>
<th>Comparison of Alternatives</th>
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<tr>
<td></td>
<td></td>
<td>Co-located</td>
<td>Greenfield</td>
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<tr>
<td></td>
<td></td>
<td>Miles</td>
<td>%</td>
</tr>
<tr>
<td>Flat</td>
<td>Federal</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Rolling</td>
<td>500</td>
<td>1,800</td>
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<tr>
<td>Flat</td>
<td>Private</td>
<td>1,800</td>
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<tr>
<td>Rolling</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Steep</td>
<td>Federal</td>
<td>1,800</td>
<td>3,600</td>
</tr>
<tr>
<td>Private</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountainous</td>
<td>Federal or Private</td>
<td>3,600</td>
<td></td>
</tr>
</tbody>
</table>

Total | 726 | 100% | 752 | 100% |

Table 1 Notes:
A. Federal Land type also included Federal/Private checkerboard in Wyoming.
B. Exceptions to these corridor widths will be made to accommodate micro-siting options and exclusion areas where possible.
Figure 1 Notes:
A. Structure and Access road disturbance information, including improvements to existing roads provided as modeled data for analysis in the DEIS. The dashed structure and access road locations shown in dashed format are indicative of the modeled data provided.
Figure 2 Notes:

A. Structure and Access road disturbance information, including improvements to existing roads provided as modeled data for analysis in the DEIS. The dashed structure and access road locations shown in dashed format are indicative of the modeled data provided.

B. Transmission Reference Line for the TWE Project used a 1,500’ separation from existing high voltage transmission lines. Modeled access road disturbance data based on assumption that a separate access road network would be required.
Figure 3 Notes:

A. This example shows how the more accurate survey data leads to a relocation of the Angle (PI) structure and the centerline to a high spot instead of a cliff face.

B. The Transmission Line Corridor for this setting has been narrowed to 1,800’.

C. Structure and Access road disturbance information, including improvements to existing roads provided as indicative data.
Figure 4 Notes:
A. This example shows how the revised co-location criteria allow the TWE Project to be sited 250’ from the existing transmission line and how the existing access road network can be utilized for the TWE Project.
B. The Transmission Line Corridor for this setting has been narrowed to 500’.
C. Structure and Access road disturbance information, including improvements to existing roads provided as indicative data.
Figure 5 Notes:

A. This example shows how the more accurate survey data leads to a relocation of the Angle (PI) structure and the centerline to a high spot instead of a cliff face.
B. The Transmission Line Corridor for this setting has been narrowed to 1,800’.
C. Structure and Access road disturbance information, including improvements to existing roads provided as GIS data.
Figure 6 Notes:

A. This example shows how the revised co-location criteria allow the TWE Project to be sited 250’ from the existing transmission line and how the existing access road network can be utilized for the TWE Project.
B. The Transmission Line Corridor for this setting has been narrowed to 500’.
C. Structure and Access road disturbance information, including improvements to existing roads provided as GIS data.
Figure 7 Notes:

A. This example shows how field surveys detected a resource that required the relocation of the Angle (PI) structure and the centerline.

B. The Transmission Line Corridor for this setting of 1,800’ is sufficient to accommodate this change.

C. The Final Engineered Alignment, final structure locations, ROW extents, temporary work areas and access road locations shown will be provided in the NTP POD and Appendices.
Figure 8 Notes:
A. This example shows how field surveys detected a resource that required the relocation of the Access Road.
B. The Transmission Line Corridor for this setting of 500’ is sufficient to accommodate this change.
C. The Final Engineered Alignment, final structure locations, ROW extents, temporary work areas and access road locations shown will be provided in the NTP POD and Appendices.
EXHIBIT A – DEFINITIONS, ABBREVIATIONS AND ACRONYMS

**Acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>AC</td>
<td>Alternating Current</td>
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<td>BLM</td>
<td>Bureau of Land Management</td>
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<td>BMP</td>
<td>Best Management Practice</td>
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<td>COMP</td>
<td>Construction, Operation and Maintenance Plan</td>
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<td>DC</td>
<td>Direct Current</td>
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<td>EHV</td>
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<td>Environmental Impact Statement</td>
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<td>National Environmental Policy Act</td>
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<td>Notice to Proceed</td>
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<td>Project Description Technical Report (TransWest July 2011)</td>
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<td>POD</td>
<td>Plan of Development</td>
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<td>Record of Decision</td>
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<td>ROW</td>
<td>Right-of-way</td>
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<td>TransWest Express</td>
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<tr>
<td>USBOR</td>
<td>U.S. Bureau of Reclamation</td>
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<tr>
<td>USFS</td>
<td>United States Forest Service</td>
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</table>

**Definitions**

**Final Engineered Alignment** – An engineered transmission line alignment reflecting the final location of the transmission line and right-of-way based upon completion of all required field surveys (Class III surveys, Threatened and Endangered Species surveys, etc.), terrain conditions determined from high-quality LIDAR data (typically at three foot elevation intervals), and final engineering review and design. The transmission line alignment and right-of-way has been field inspected and surveyed and construction procedures and practices are in compliance with the record of decision and right-of-way grant/special use permit, or exceptions noted and documented and the variance process initiated.

**Greenfield** – a Reference Line that is not co-located near or parallel to an existing transmission line or other linear utility infrastructure.
**LIDAR** – A remote sensing technology that measures distance by illuminating a target with a laser and analyzing the reflected light and is popularly used as a technology used to make high resolution maps.

**Plan of Development** – documentation of a federal right-of-way applicant’s construction, operation, rehabilitation and environmental protection plan. See 43 CFR 2804.25

**Preliminary Engineered Alignment** – An engineered transmission line alignment reflecting a possible final location of the transmission line and right-of-way based upon known environmental and land use opportunities and constraints, terrain conditions ascertainable from public and commercially available information (USGS maps, satellite imagery, commercially available purchased imagery, etc.), and initial engineering review and design. The alignment has been field inspected and no major issues concerning construction, operation and maintenance of the line have been identified.

**Reference Line** – Reference Lines are preliminary, non-engineered routes within Transmission Line Corridors that were determined based on environmental and engineering constraints and constructability review. The reference line is generally bounded on each side by one mile of corridor. For purposes of the DEIS analysis, Reference Lines serve as preliminary centerlines for the location of the ±600 kV DC transmission line ROW. Reference line locations will be refined within the Transmission Line Corridors throughout the NEPA process.

**Transmission Line Corridors** – Corridors are defined as geographic areas generally varying in width within which the proposed 250 foot-wide TWE Project transmission line right-of-way (ROW) would be located. Corridor widths have varied among the various studies completed for TWE Project planning. For purposes of the DEIS analysis, the Proposed and Alternative Transmission Line Corridors have been refined to generally two miles wide. In limited areas, the corridor widths may be greater or lesser due to routing constraints, as requested by the joint lead agencies. These Transmission Line Corridors will be evaluated in the DEIS to document the range of resource impacts which could result from transmission line construction, operation, and maintenance within the Transmission Line Corridors. Corridor locations and widths have been, and will continue to be, refined throughout the National Environmental Policy Act (NEPA) process.

**Design Alternatives** – Design alternatives are alternative transmission configurations, which may have the potential to meet the TWE Project purpose and need, depending on future energy market conditions and permitting decisions for other regional transmission systems. Two design alternatives are described in the PDTR.