

EXHIBIT E

EXHIBIT E – SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND ARCHAEOLOGICAL SITES

As stated in R14-3-219, Exhibits to Application, Exhibit E of the Rules of Practice and Procedure Before Power Plant and Transmission Line Siting Committee:

“Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon.”

The following sub-exhibits include analyses of visual resources and cultural resources in the vicinity of the CEC Proposed Route and anticipated impacts of the Project on those resources.

Exhibit E-1	Visual Resources (Scenic Areas)
Exhibit E-2	Cultural Resources (Historic Sites and Structures and Archaeological Sites)

EXHIBIT E-1 – Visual Resources (Scenic Areas)

The following analysis describes the current landscape and existing land use plan goals and policies for visual resources within the study area. The visual resources evaluation is based upon both spatial (landscape) and temporal (time) limits. The study area for visual resources is generally 5 miles on either side of the right-of-way ("ROW") centerline (10 miles total) for the CEC New Build Route and 2 to 5 miles on either side of the ROW centerline (4 to 10 miles total) for the CEC Upgrade Route (*see* Exhibit B-1, Final EIS Figures 3.10-1 and 3.10-2). Included in this analysis are viewing locations and key observation points ("KOPs"). These views were identified based on the potential visibility of the proposed Project and to inform the assessment of effects on the viewing public as a result of the proposed Project.

INTRODUCTION

Visual resources are the visible physical features on a landscape and may include landform (topography and soils), vegetation, and human-made structures (roads, buildings, fences, and modifications of the land and vegetation). The combination of these physical features creates scenery and provides an overall landscape character. This character is formed by the variety and intensity of the landscape features and four basic elements of form, line, color, and texture. These factors give an area a unique quality that distinguishes it from its surroundings. Usually, the more variety of these elements a landscape has, the more interesting or scenic that landscape becomes if the elements coexist harmoniously. Scenic quality is the relative value of a landscape from a visual perception point of view. The evaluation of visual resources on lands in the study area uses a combination of scenery (established through documentation of regional landforms, vegetation, and water) and viewing locations (established through evaluation of sensitive views and scenic values documented through identification of KOPs).

LAND USE PLANS

Land ownership and management jurisdiction in the visual study area of the CEC Proposed Route includes federal, state, and local government and private. Visual resource management on lands traversed by the Project is guided by federal, state, and local land use plans and policies.

A Visual Resource Inventory (“VRI”) is required to be completed to process all permit applications. Further discussion of the BLM VRM system and applicable BLM RMPs can be found in Exhibit B-1, Final EIS Section 3.10.2.

No state or regional land use plans relating to visual resources were identified in the CEC Proposed Route study area. County planning documents exist for Pinal County (2011, 2015), Pima County (2004, 2012, 2015), and Cochise County (2015a). The Pinal County Comprehensive Plan indicates goals to protect scenic viewsheds and dark skies through the implementation of context sensitive design, as well as limiting development intensity, site coverage, vegetation removal, and protection of open space and ecological, geological, archaeological, historic, or cultural features with importance to natural resources. In Pima County, the Comprehensive Plan recommends reducing the visual impact of development on scenic vistas and entry points by providing design guidance and requiring more intensive restoration of graded areas. The Cochise County Comprehensive Plan recommends reduction of light pollution, maintaining rural character, and maintaining a trail network while protecting wildlife, pathways, green open spaces, and dark skies.

The visual study area includes the municipalities of Willcox and Tucson. Each of these municipalities has a general plan and municipal code. The overriding goal of the City of Willcox General Plan is to protect and preserve the city’s heritage and to ensure compatible and managed growth for its citizens (City of Willcox 2009). The City of Tucson Land Use Code encourages the most efficient use of land through site-sensitive design, reduces potential hazards to individuals and neighborhoods (public) resulting from incompatible land uses or from the development of environmentally hazardous or sensitive lands, protects and enhances the city’s natural, cultural, historical, and scenic resources, and promotes the economic stability of the community (City of Tucson 1995, 2001).

Visual resources on federal lands in the study area are regulated under the Federal Land Policy Management Act (“FLPMA”). FLPMA requires that the BLM prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including scenic values). The BLM Visual Resource Management (“VRM”) system requires the inventory of scenic resources and the establishment of land management objectives (VRM classes). The VRM is reported in the Resource Management Plans (“RMPs”) conducted and updated for all BLM Field Offices.

The federal lands crossed by the CEC New Build Route are administered by the BLM (Tucson and Safford Field Offices). The 1991 Safford RMP is the plan that identifies VRM policies and goals for this portion of the study area. Visually sensitive areas identified by the Safford RMP within the project study area include the Peloncillo Mountains Wilderness and the Willcox Playa NNL/ ACEC (BLM 1991).

ASSESSMENT METHODOLOGY

The visual resources evaluation methodology used in the Final EIS (Sections 3.10-7 – 3.10-14) was based upon guidance as stated in BLM 8400 series manuals (H-8410-1 (BLM 1986a); H-8431 (BLM 1986b)) and begins with establishing the area of exposure, identifying the sensitive receptors within the area of exposure, identifying issues of concern as expressed during scoping, KOP selection based on public sensitivity and landscape character, public outreach, field reconnaissance, and any specific communications with vested stakeholders, an assessment of scenic values (as expressed by the public), and the assessment and description of the degree of effect on public scenic value as required by the National Environmental Policy Act (“NEPA”).

EXISTING CONDITIONS

The following sections describe the existing landscape in the CEC Proposed Route and CEC Substations. This description includes the basic elements of the characteristic landforms, vegetation, and human modifications found throughout the study area.

I. CHARACTERISTIC LANDSCAPE

The visual study area extends across southern Arizona, from the New Mexico-Arizona border westward (CEC New Build Route) towards the City of Tucson and north to southern Pinal County (CEC Upgrade Route). In addition to the CEC New Build and Upgrade routes, the study area also includes substation expansion areas for Apache, Vail, Pantano, DeMoss, Petrie, and Tortolita substations (CEC Substations).

Scenery throughout the CEC New Build Route is made up of a variety of physical elements. The landscape is generally characterized by flat, open areas interspersed with sparse tree and shrub-covered, rising mountain ridges and hills. Vegetation includes large, open areas of light-colored perennial grasses, forbs, palo verde and mesquite trees, and shrubs interspersed with dense stands of darker green juniper and pine trees. Typical Chihuahuan Desert vegetation cover is present in the eastern part of the CEC

New Build Route as well as the CEC Apache Substation, transitioning to typical Sonoran Desert vegetation cover in the CEC Upgrade Route and remaining CEC Substation areas. There is a notable lack of surface water, and typical vegetation along the route is characterized by low-lying grass and shrub communities. The CEC Proposed Route is broken intermittently by roads, ranch developments, fence lines, transmission and other utility lines, as well as the outskirts of community development. With the exception of the De Moss Petrie Substation (see paragraph below), the majority of the CEC Proposed Route and CEC Substations can be characterized as rural and mostly open space. As noted in the Final EIS, more than 83 percent of the CEC Proposed Route is adjacent to, and routed along, existing linear features, most of which are existing roadways or transmission and gas lines. The CEC Substations (De Moss Petrie excepted, as described below) are located in areas of open desert and cropland, interspersed with rural residences and is characterized by low-density development with a mix of natural landscape, agricultural fields, and rural communities.

The landscape at the CEC Substation located in the City of Tucson (De Moss Petrie Substation) has been completely modified by industrial development, transportation infrastructure, and residential development. Paved roads, paved ditches/canals, overhead transmission lines and buildings have contributed to changes to the landscape in the Tucson area. In the background, the jagged Santa Catalina Mountains are visible to the east.

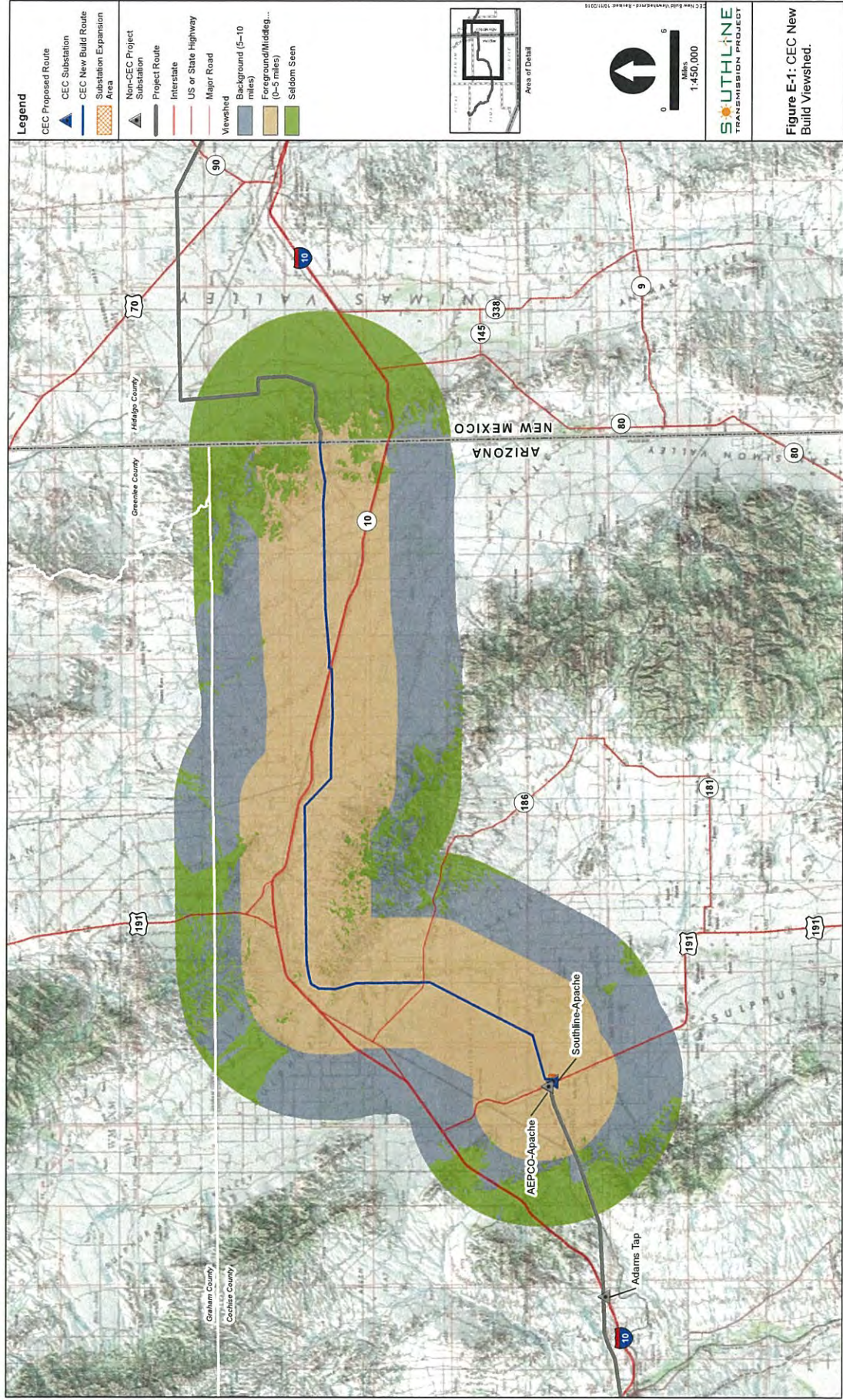
II. VIEWSHED DELINEATION

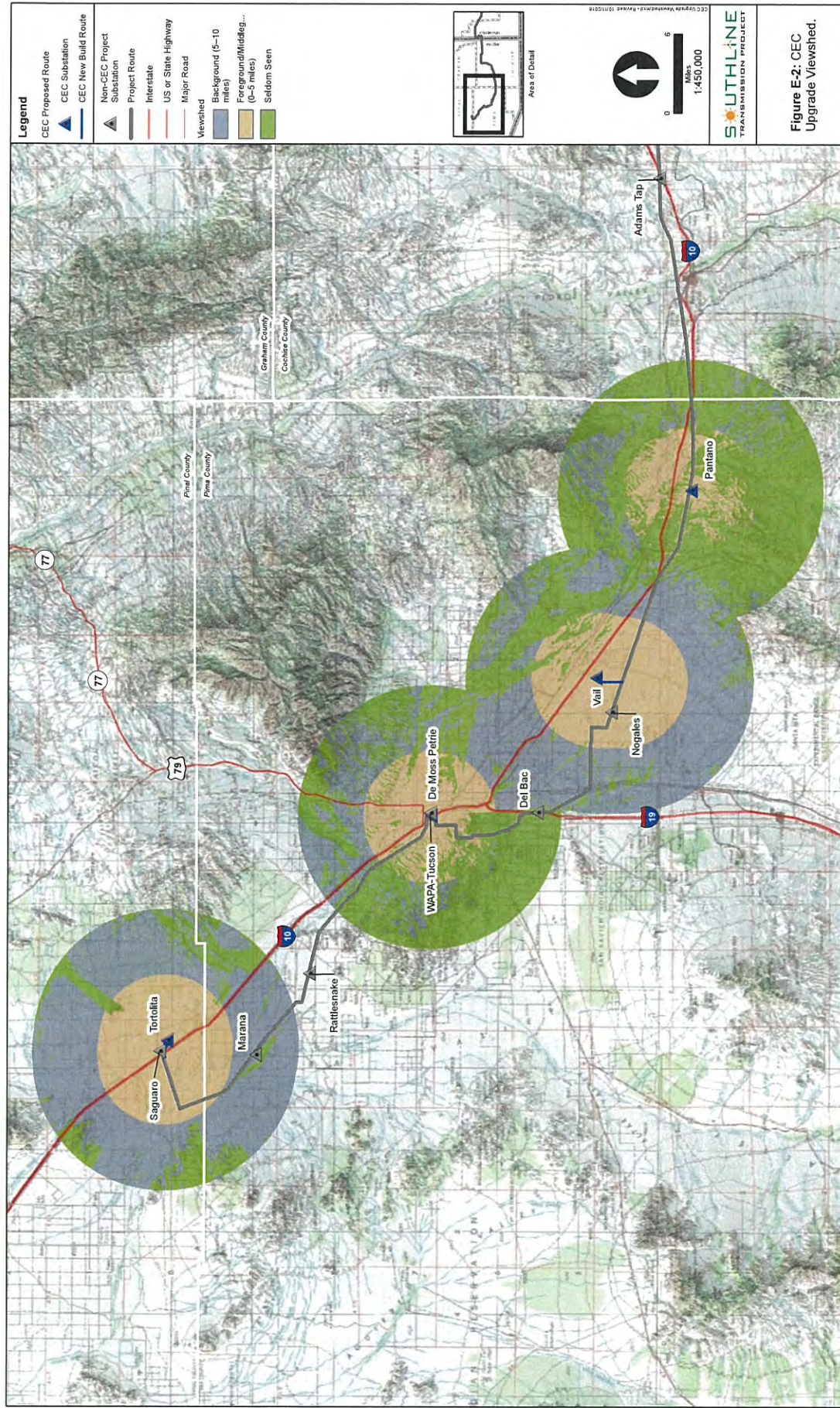
Because visual details are diminished the farther the observer is removed, landscapes are subdivided into three distance zones based on relative visibility from observation points, which will be referred to in the following analysis. To help select particular locations for additional analysis, a viewshed delineation was prepared that included the CEC New Build and Upgrade Routes and CEC Substations (*see* Figures E-1 and E-2 below). The viewshed delineation reveals those areas from which the viewer would have a line of sight to the Project and is a useful tool in defining the final areas of analysis and facilitating the selection of KOPs.

To generate the 3-dimensional environment necessary for the viewshed delineation, Digital Elevation Model ("DEM") data files from the USGS were joined into a mosaic with an extent expansive enough to include all potential KOPs within the CEC Proposed Route and CEC Substation areas. The "Background," "Foreground," and "Seldom Seen" areas resulting from the delineations indicate the areas from which an

observer may be able to see the Project (*see* Exhibit B-1; Final EIS Figures 3.10-7 and 3.10-8). The viewshed delineations considered the topography of the CEC Proposed Route and CEC Substations but did not consider how existing vegetation or human modifications would affect visibility. To account for those factors, a field visit to each KOP was completed to determine visibility and the potential visual contrast that would result.

The three zones are foreground-middle ground, background, and seldom seen. The foreground-middle ground includes views that are less than 3 to 5 miles away. The background zone includes views beyond the foreground-middle ground zone but less than 15 miles away. Views not seen as foreground-middle ground or background (*i.e.*, hidden from view) are in the seldom-seen zone. These zones, together with the characteristic landscape and geographic context, will be the basis for assessing visual impacts through contrast analysis and distance zones. Given the long, linear nature of the proposed Project, the study area for visual resources was segmented into sections based on similar scenic quality or landscape character. Visibility mapping indicated that the proposed transmission line would not be visible, or would be negligibly visible, beyond the 10- to 18-mile threshold (*i.e.*, the “seldom seen” distance zone). Recent research on visibility indicates that lattice structures are typically not visible beyond 7 miles and monopoles are typically not visible beyond 5 miles in landscapes similar to that of the proposed Project (Sullivan et al. 2014).





To further refine the analysis of existing visual conditions, following the inventory and viewshed delineation, representative KOPs and simulations were selected for further study.

III. KEY OBSERVATION POINTS

KOPs are identified to geographically represent typical views of an entire proposed project, and to represent views from places where the greatest number of people reside or gather. A KOP can either be a single point of view that an observer/evaluator uses to rate an area or panorama, or a linear view along a roadway or trail corridor. KOPs can be static locations such as residences, scenic overlooks, or recreation facilities, or they can be located along commonly traveled routes, such as highways, access roads, or hiking trails. Based on public scoping, residential areas, recreational use, and using the viewshed delineations, KOPs were selected to represent the effects of the CEC Proposed Routes as seen from areas that permit a high degree of visibility, areas of differing perspectives, and areas of high viewer sensitivity. Thirteen KOPs represent typical views of the CEC Proposed Route and CEC Substations as it would be seen by people traveling through and recreating within or across the CEC Proposed Route, as well as views from the areas to the south, east, and north of the CEC Proposed Route and CEC Substation (*see* Exhibit B-1; Final EIS Figures 3.10-11 and 3.10-12).

VISUAL CONTRAST ANALYSIS AND POTENTIAL EFFECTS

Impacts on visual resources were evaluated by assessing changes to the characteristic landscape that will result from the construction and operation of the CEC Proposed Route and CEC Substations. As discussed above, visual resources consist of landform, vegetation, and human-made structures. Impacts to visual resources were assessed by (1) generally evaluating visual contrasts that will result from the construction and operation of the Project and (2) assessing visual contrasts resulting from the same actions as they will be seen from identified KOPs.

Construction activities associated with the installation of the substations and transmission line will contribute to visual contrasts to the color, line, form, and texture of the existing characteristic landscape. Those contrasts will result from ground disturbance, removal of vegetation, and the temporary storage of equipment and materials. In addition, construction equipment, vehicles, and associated activities, including restoration, will be temporarily visible during construction activities. Areas of temporary disturbance will be reclaimed after construction activities are completed,

although it could take a number of years before temporary disturbances are no longer visible. Even when vegetation is established following reclamation efforts, the composition of species in the recovery area is often different from the original plant community.

Impacts are anticipated to be highest where new structures are introduced into the existing landscape for viewers (e.g., residential viewers) with unobstructed views of the CEC Proposed Route and CEC Substations within the immediate foreground distance zone. Residences with similar viewing conditions will have reduced impacts where the CEC Proposed Route is co-located with or parallels existing transmission lines, as structure contrast is reduced.

SUMMARY OF IMPACTS OF CEC NEW BUILD ROUTE

I. SCENIC QUALITY

The CEC New Build Route and CEC New Build Substation (Apache) crosses a diversity of landscapes. The Dos Cabezas Mountains are rated as Class A scenic value and are characterized by the highly varied landscape of the Dos Cabezas Mountains (see Exhibit B-1, Final EIS Figure 3.10-13). The Peloncillo Mountains and San Simon Valley are rated as Class B scenic value and are characterized by steep undulating ridgelines, low rounded hills, and eroded rocky peaks. The Willcox Playa area (which includes the CEC Apache Substation) is rated as Class C area and is generally characterized by flat desert valleys and playa surrounded by mountains.

II. SENSITIVITY

The CEC New Build Route and CEC Apache Substation crosses sensitivity level rating units ("SLRUs") with low, moderate, and high sensitivity (see Exhibit B-1, Final EIS Figure 3.10-14). High sensitivity areas include major travel corridors along I-10 with views of the CEC New Build Route in the foreground and middle ground. Tourist attractions and recreation sites along the route with high viewer sensitivity include the Fort Bowie Historic Site, Dos Cabezas Wilderness Area, hiking opportunities in the Langford Mountains (the CEC Proposed Route will not intersect these areas, however), and Willcox Playa Wildlife Area. There are several rural communities, including San Simon, Willcox, and Bowie. Widely dispersed rural residences and agricultural development occur along the route.

III. KEY OBSERVATION POINTS

As noted above, there are concentrations of residences in the communities of San Simon, Willcox, and Bowie. Dispersed rural residences are located in the study area along the remainder of the route. High sensitivity viewing areas within the study area for the proposed route include the I-10 travel corridor, the Peloncillo Mountains, Dos Cabezas Wilderness, Fort Bowie, and the Sulphur Springs Valley/Willcox Playa.

KOPs P5-02, F1-01, P6-02, P7-01, P7-02, P7-03 (as identified in the Final EIS) provide the data for the CEC New Build Route. Figures B-36, B-41, B-42, and B-45 in Appendix K of the Final EIS provide simulations of the CEC New Build Route.

SUMMARY OF IMPACTS OF CEC UPGRADE ROUTE

I. SCENIC QUALITY

Scenic quality for the CEC Upgrade Route and CEC Upgrade Substations (Vail, Pantano, DeMoss, Petrie, and Tortolita ranges from vacant desert open space to moderate and highly developed urban areas. Scenic quality in urban areas is typically designated as Class D (developed land) (*see* Exhibit B-1, Final EIS Figure 3.10-17).

II. SENSITIVITY

Though much of the CEC Upgrade Route and CEC Upgrade Substations are located within developed lands, the sensitivity along the route ranges from low to high as the route and substation are located in areas in which residents and recreationists are located and sensitive to changes in the landscape (*see* Exhibit B-1, Final EIS Figure 3.10-18). However, due to the existence of other, similar types of utility development (*i.e.*, transmission lines, substations, and ancillary facilities) the viewing sensitivity tends to lessen as the area is characterized by urban congestion, rather than wide open natural views and opportunities for unadulterated desert views.

III. KEY OBSERVATION POINTS

KOPs represent a variety of views and viewer types ranging from open, undeveloped desert views to highly urbanized views of Tucson and Marana from or of specific viewing areas of community or natural concern (*e.g.*, Tumamoc Hill, Tucson Mountain Park, and Saguaro National Park West).

KOPs U3-03, U3-04, U3-05, U3-23, U3-24, and AN-12 (as identified in the Final EIS) provide the data for the CEC Upgrade Route and CEC Upgrade Substations. Figures B-60 B-78, B-79, and B-88 in Appendix K of the Final EIS provide views or simulations of the CEC Upgrade Route.

CONCLUSION

During construction, visual impacts will result from the introduction of construction vehicles, equipment, and construction materials within staging areas, access roads, and within the transmission line ROW. Disturbance resulting from construction will be temporary and largely short in duration, and visible effects from active construction would diminish subsequent to clean up and restoration of the temporary staging areas and access roads. Restoration of desert vegetation can take several years to complete and conditions in areas of disturbance are expected to change over several years as restoration takes place. Because of the small scale of vegetation disturbance required, there will be minimal visible contrasts that will be reduced over time.

Sensitive viewers will be affected by the temporary proposed Project construction impacts. However, the transmission line structures will cause major, long-term change to scenery, while construction of the structures and facilities will be short-term and temporary. During construction, the motion associated with construction equipment, structure movement, conductor stringing, alteration of topography, earthwork, vegetation clearing, short-term impacts from dust generation, and landform modification will be noticeable and create visual contrast within the viewshed.

Sensitivity at Willcox Playa, which is an important ecotourism and viewing area for migrating birds, including the sandhill crane, is high. The CEC New Build Route and CEC Apache Substation are south of critical viewing areas associated with the Willcox Playa. Visual impacts in this area will be low to moderate in the immediate foreground, and low beyond 1 mile of the transmission line; as shown on the visual simulation (*see* Figure B-45, Appendix K of the Final EIS).

Impacts to visual resources associated with the operation of the CEC Proposed Route and CEC Substations will result from the change in regular geometric forms, horizontal and vertical lines associated with the substations, transmission line structures, and access roads contrasting with the irregular, organic forms and colors of the existing landform and vegetation (there will be no contrast in the vicinity of the De Moss Petrie Substation due to the existing development).

The structures, transmission lines, permanent access roads, and substations, will increase visual contrast during operation and maintenance of the proposed Project. Visual impacts will be most evident where cleared areas created scars, barren areas, or unnatural lines and contrast resulting from clearing which will remain for the life of the proposed Project (although, as noted in the Final EIS, some areas will be revegetated to reduce contrast resulting from landform and vegetation modification). The most evident and long-term visual contrasts result from the addition of transmission lines and facility structures within the landscape. These vertical structures (towers), conductors, lines, and access roads will produce long, linear contrast within the landscape, particularly in areas where no development or existing infrastructure exists. The CEC Proposed Route will repeat the basic visual elements of the existing roads and transmission lines, fences, and pipelines crossing the visual study area, which are similar in form, line, color, and texture.

REFERENCES CITED

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<http://www.pima.gov/cmo/sdcp/index.html>. Accessed June 26, 2013.
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- Sullivan R.G., J.M. Abplanalp, S. Lahti, K.J. Beckman, B.L. Cantwell, and P. Richmond. 2014. Electric Transmission Visibility and Visual Contrast Threshold Distances in Western Landscapes. Available at: <http://visualimpact.anl.gov/transvctd/>. Accessed September, 2016.

EXHIBIT E-2 – Cultural Resources (Historic Sites and Structures and Archaeological Sites)

The following analysis describes the historic sites and structures and archeological resources (historic properties) within the cultural study area and evaluates the CEC Proposed Route (CEC New Build Route and CEC Upgrade Route) and CEC Substations' impacts on these resources. The cultural study area includes the centerline of the CEC New Build Route and the CEC Upgrade Route and a 1-mile buffer, as well as five CEC Substations' locations and a 1-mile buffer around each substation location. Impacts to cultural resources were considered by evaluating the presence or absence of resources within the study area.

INTRODUCTION

The CEC Proposed Route involves the CEC New Build Route (*see* Exhibit A, Figures A-2a and A-2b) and the CEC Upgrade Route (*see* Exhibit A, Figures A-2c and A-2d) of the Southline Transmission Project. The CEC New Build Route consists of approximately 66 miles of new double-circuit 345-kV transmission line in a new 200-foot-wide ROW, which would terminate at a new substation to be owned by Southline near the existing AEPCO Apache Substation,¹ and less than 1 mile of 115-kV or 230-kV transmission line and associated facilities needed to connect the proposed Southline Apache Substation to the AEPCO Apache Substation.

The CEC Upgrade Route consists of approximately 5 miles of new non-WAPA owned 138-kV and 230-kV transmission lines and associated facilities that would interconnect the upgraded WAPA 230-kV Apache-Tucson and Tucson-Saguaro transmission lines to four existing substations owned and operated by other Arizona load-serving utilities: (a) approximately one mile of 230-kV transmission line and associated facilities to interconnect the AEPCO Pantano Substation, (b) approximately two miles of 230-kV transmission line and associated facilities to interconnect the TEP Vail Substation, (c)

¹ The existing Apache Substation is owned and operated by AEPCO. Southline proposes to construct a new substation ("Southline Apache Substation") located near the AEPCO Apache Substation that would connect the New Build Section of the Project to the AEPCO Apache Substation and to the Upgrade Section of the Project. See Application at Section 4.b.i.(3) for additional details.

less than one mile of 138-kV transmission line and associated facilities to interconnect the TEP DeMoss Petrie Substation, and (d) approximately 1.5 miles of 230-kV transmission line and associated facilities to interconnect the TEP Tortolita Substation.² The proposed ROW for the CEC Proposed Route crosses BLM and other federal lands; therefore, the proposed Project constitutes a federal undertaking subject to review under Section 106 of the National Historic Preservation Act and its implementing regulations (36 Code of Federal Regulations Part 800). As part of the Section 106 process, the determination of effect by the federal agency is reached in consultation with the State Historic Preservation Officer ("SHPO") and other interested parties. In addition, portions of the proposed Project that cross state land are subject to compliance with the Arizona State Historic Preservation Act of 1982 (ARS §§ 41-861 - 41-865).

Section 106 requires that all cultural resources within the Area of Potential Effect ("APE") be identified prior to any construction or other ground-disturbing activities through records searches and field surveys. For the CEC Proposed Route, the APE will be defined based on the granted ROW within the study area once the route has been finalized. Resources are evaluated for eligibility to the National Register of Historic Places ("NRHP"), based on the criteria set forth in 36 C.F.R. § 60.4, which states:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (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 have yielded, or may be likely to yield, information important in prehistory or history.

² See Application at Section 4.b.i.(3) for additional details on the Pantano, Vail, DeMoss Petrie, and Tortolita substations.

EXISTING CONDITIONS

A cultural resources records search was conducted to determine whether any historic sites and structures or archaeological sites (historic properties) are located within 1-mile of the CEC Proposed Route and how they might be affected by the construction and operation of the CEC Proposed Route. The goal of this study was to identify any prior cultural resource surveys and recorded archaeological and historical sites within the study area and to assess the potential for the CEC Proposed Route to affect cultural resources. Information was compiled by SWCA, as well as taken from a report titled "Southline Transmission Project Resource Report 2: Cultural Resources" (CH2M Hill 2013). Archaeological records were checked using the AZSITE database, which includes records from the Arizona State Museum ("ASM"), Arizona State University ("ASU"), and the Bureau of Land Management ("BLM"), for previous surveys and recorded sites within the study area. Data were also gathered from the Arizona's SHPO database, the Safford BLM Field Office, the Tucson BLM Field Office, and the NRHP database maintained by the NPS. In addition, the City of Tucson and Pima County provided information on State- and NRHP-listed properties in Tucson and Pima County.

Three NPS-certified local governments were contacted for information on local cultural resources: Pima County, Arizona; Tucson, Arizona; and Willcox, Arizona. Several museums, civic organization, historical societies, and individuals were also contacted for further information such as the Amerind Foundation, the Chiricahua Regional Museum and Research Center, the railroad historian Vernon J. Glover, and the Fort Bowie National Historic Site. Published maps consulted included General Land Office ("GLO") maps, USGS maps, and pre-1960 highway maps. No field survey was undertaken for this study.

Archaeological sites and historic built environment sites were classified as "Determined Eligible," "Determined Not Eligible," "Unevaluated," or "Unknown." Only properties evaluated by the SHPO were classified in the "Determined Eligible" and "Determined Not Eligible" categories. Properties that have been recommended eligible or recommended not eligible were classified as "Unevaluated."

I. PREVIOUS RESEARCH

An archaeological records search indicated that 40 archaeological surveys have been conducted within the study area for the CEC Proposed Route (Table E-1 below); 24 percent or 23,245 acres of the study area has been covered by those surveys. Thirty-

three archaeological sites have been identified within study area for the CEC Proposed Route (Table E-2 below). The majority of the sites are prehistoric Native American artifact scatters or artifact scatters with features. There is one rock shelter with prehistoric artifacts. Historic-age sites include roads, railroads, artifact scatters, a ranch, and utilities. Five sites have been determined eligible; the remaining sites are unknown or unevaluated.

One site, AZ T:15:32(ASM), is the Butterfield Overland Mail Route which is present throughout the Study Corridor.

Table E-1. Previously Conducted Archaeological Surveys within the Study Area

Agency Number	Project Name	Report Reference	Institution
11.270.SHPO	Red Rock Recycle Mill	None available	ASM
7.136.SHPO	Unknown	None available	Unknown
1955-3.ASM	Southern Pacific Pipeline Survey	None available	Unknown
1973-13.ASM	Salt-Gila Survey	Grady et al. (1973)	ASM
1977-6.ASM	AEPCO II, Dos Condados to Apache	None available	ASM
1979-37.ASM	Unknown	None available	Unknown
1979-39.ASM	TG+E Northern Tucson Transmission Line Survey	None available	ASM
1980-242.ASM	TEP Tortolita – South Utility Corridor and Alternate Routes	Wilson (1980)	John P. Wilson
1981-154.ASM	TEP Tortolita – South Realignment Survey	Wilson (1981)	John P. Wilson
1982-206.ASM	Petty-Ray Geophysical Seismic Lines	Frampton et al. (1982)	Powers Elevation
1982-207.ASM	Tucson-Apache 115 kV Transmission Line	None available	CASA
1983-198.ASM	Northern Tucson Basin Survey / Marana Phase II	Fish et al. (1992)	University of Arizona
1985-126.ASM	Archaeology of the Willcox Playa	Woosley et al. (1985)	Amerind Foundation
1985-167.ASM	Western Area Power Administration's Saguaro to Tucson Reconductoring	Effland and Green (1985)	Archaeological Consulting Services (ACS)
1985-213.ASM	AEPCO San Rafael Project	Dosh et al. (1985)	Museum of Northern Arizona
1985-226.ASM BLM 1985-48	All American Pipeline Right-of-Way	Batcho (1985) Higgins and Brunson (1985) Plot (1989)	New Mexico State University
1987-222.ASM	U.S. Telecom Buried Fiber Optic Cable	O'Brien et al. (1987)	Dames & Moore

1992-247.ASM	Pima County Landfill Survey	Slaughter and Roberts (1992)	SWCA
1992-289.ASM	Red Rock Loop	Crary and Macnider (1992)	ACS
1997-209.ASM	SFPP Arizona Reconditioning Project	William Self Associates (1997)	William Self Associates
1999-587.ASM	PBNS Level 3 Fiber Optic Line	Doak (1999a; 199b)	SWCA
2000-723.ASM	AT&T NexGen/Core Project Link 3 Class 3 Survey	Kearns et al. (2000)	Western Cultural Resource Management (WCRM)
2000-732.ASM	AEPCO Apache to Dos Condados Survey	Becker et al. (2001)	Statistical Research, Inc.
2000-826.ASM			WCRM
BLM 02-21 BLM 05-24 BLM 05-09	AT&T NexGen/Core Project Link 2 Class 3 Survey	Kearns et al. (2001) Baker and Jones (2004)	
2001-406.ASM	Surveys of Six Proposed Reroutes for a Proposed Fiber Optic Cable ROW	Baker and Webb (2001)	WCRM
2001-821.ASM	I-10 Bowie Survey	Shepard and Turner (2002)	Entranco
2002-153.ASM	Saguaro-Tortolita 500kV Intertie Project	Hill (2002)	Environmental Planning Group, Inc. (EPG)
2003-1070.ASM	EPNG Tucson Class III Survey	Hesse and Gutierrez (2003)	SWCA
2003-910.ASM	Cultural Resources Survey of the 360Networks Fiber Optics Lines	Railey et al. (2001)	TRC
2005-302.ASM	AT&T NexGen/Core Project	Baker (2004)	WCRM
2005-446.ASM	Tucson-Apache 115kV Transmission Line	Goldstein (2008)	Transcon Environmental
2006-1.ASM BLM 06-19	SFPP, LP, El Paso to Phoenix Expansion Project, Arizona Portion: Cochise and Pima Counties	Morgan et al. (2006) Rawson et al. (2006)	William Self Associates
2010-240.ASM	Tortolita Substation Survey	Jones (2010)	Tierra Right of Way
AMF Unpublished Survey	Amerind Foundation Survey	None available	Amerind Foundation
B 164/S# 210	AEPCO	None available	Unknown
B 196	Unknown	None available	Unknown
BLM 02-29	Unknown	None available	Unknown
BLM 03-2	Unknown	None available	Unknown
BLM S# 701	Unknown	None available	Unknown

Table E-2. Previously Recorded Archaeological Sites within the Study Area

Site Number	Site Description	NRHP* Eligibility [†]
AMF Survey: historic	Unknown	Unknown
AZ AA:11:240(ASM)	Unknown – no site card available	Unknown
AZ AA:12:875(ASM)	El Paso Natural Gas Pipeline No. 1007	Unevaluated
AZ AA:16:377(ASM)	State Route 86	Unevaluated
AZ AA:2:118(ASM)	State Route 84	Determined Eligible (Criteria A and D)
AZ BB:16:48(ASM)	El Paso Natural Gas Pipeline No. 1103	Unevaluated
AZ CC:3:91(ASM)	Historic United States (US) 191, US 71	Determined Eligible (Criteria A and D)
AZ CC:9:2(ASM)	Prehistoric artifact scatter	Unevaluated
AZ CC:10:12(BLM)	Prehistoric artifact scatter	Unevaluated
AZ CC:10:20(ASM)	Historic artifact scatter	Unevaluated
AZ CC:10:26(ASM)	Historic artifact scatter	Unevaluated
AZ CC:10:34(ASM)	Prehistoric artifact scatter	Unevaluated
AZ CC:10:41(ASM)	Prehistoric artifact scatter	Unevaluated
AZ CC:10:43(ASM)	Prehistoric structure and artifact scatter	Unknown
AZ CC:10:44(ASM)	Prehistoric artifact scatter with features	Unevaluated
AZ CC:10:107(ASM)	Prehistoric artifact scatter with features	Unevaluated
AZ CC:11:18(ASM) AR 544	Prehistoric artifact scatter	Unknown
AZ CC:11:48(ASM)	Canals	Unevaluated
AZ CC:11:49(ASM)	Prehistoric village with artifact scatter	Unevaluated
AZ CC:12:20(ASM)	Prehistoric artifact scatter	Unevaluated
AZ CC:12:22(ASM)	Prehistoric artifact scatter	Unknown
AZ CC:12:23(ASM)	Rock shelter with prehistoric artifact scatter	Unevaluated
AZ CC:12:24(ASM)	Historic artifact scatter	Unevaluated
AZ CC:12:25(ASM)	Prehistoric artifact scatter	Unevaluated
AZ CC:13:13(ASM)	Historic ranch	Unevaluated
AZ CC:13:14(ASM)	Prehistoric artifact scatter	Unevaluated
AZ CC:13:15(ASM)	Prehistoric artifact scatter	Unknown

AZ CC:13:70(ASM)	Prehistoric artifact scatter	Unevaluated
AZ CC:13:80(ASM)	Transmission line with artifact scatter	Unknown
AZ FF:1:33(ASM)	US666	Unevaluated
AZ FF:1:34(ASM)	Arizona & Colorado Railroad Company railroad	Determined Eligible (Criteria A and D)
AZ Z:2:40(ASM)	Southern Pacific Railroad Mainline – Southern route	Determined Eligible (Criterion A)
AZ T:15:32(ASM) AZ T:14:61(ASM) AZ U:14:313(ASM)	Butterfield Overland Stage Route	Listed in New Mexico Determined Eligible in Arizona (Criterion A)

* NRHP = National Register of Historic Places.

† Data were obtained from AZSITE and other sources and may represent agency determinations with SHPO concurrence or recorder recommendations.

Three NRHP-listed historic buildings or districts are also found within the study area: the Antonio Matus House and Property, the Pascua Cultural Plaza, and the Empirita Cattle Ranch Historic District #2.

GLO plat maps and historic USGS topographic maps for the study area were also examined. Ninety-four features were depicted within the study area: 80 roads, 2 fences, 3 pipelines, 3 railroad features, 1 stage route, 2 structures, 1 tank, and 2 telegraph lines. No field checks were conducted to verify the existence of these cultural features.

SUMMARY OF IMPACTS

A total of 33 archaeological sites, including the Butterfield Overland Stage Route, and three NRHP-listed historic buildings or districts are found within the study area. The majority of the sites are Native American artifact scatters and artifact scatters with features but several types of historic sites are present as well including the Butterfield Overland Stage Route. Of the archaeological sites, five sites have been determined eligible for the NRHP and 28 sites are of unknown or undetermined NRHP status; however, only 24 percent of the study area has been previously surveyed making the presence of undocumented archaeological sites or other historic properties likely.

As part of the Section 106 compliance process, the BLM has prepared a Programmatic Agreement ("PA") for the Project (*see* Exhibit B-1, Final EIS Appendix L), which stipulates that the area of potential effect for direct effects, including that for the CEC

Proposed Route, will be inventoried at the Class III level. Adverse effects to individual historic properties will then be assessed in consultation with the Arizona State Historic Preservation Office, the appropriate tribes, and other interested parties as stipulated in the executed PA. Measures to avoid, minimize, and/or mitigate any adverse effects on historic properties will then be developed by BLM in consultation with the Section 106 consulting parties. Avoidance of sites during final design is the preferred choice for impact reduction; impacts that cannot be avoided or minimized through design will be mitigated by other measures such as data recovery as outlined in an Historic Properties Treatment Plan ("HPTP").

CONCLUSION

Southline will make every effort to avoid historic properties in the study area, and will complete a Class III archaeological survey of the proposed route and assess the effect to historic properties in consultation with the Arizona State Historic Preservation Office, the appropriate tribes, and other interested parties. Avoidance can be accomplished by locating transmission structures, access roads, etc. outside the boundaries of known historic properties. When avoidance is not feasible adverse impacts will be mitigated through the implementation of an HPTP.

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