- Interference with existing and future land uses or development;
- Selection of a route that maximizes length through farmland or other undeveloped land;
- Selection of a route that does not bisect properties or reduce usable property;
- Selection of a route that follows existing rights-of-way, property lines, or floodways;
- Concerns about economic impact on property values;
- Concerns about damage to property and loss of trees;
- Concerns about easement restrictions;
- Selection of a route that minimizes impacts on environment and designated natural and wildlife areas;
- Safety concerns; and
- Concerns about construction-related flooding and drainage issues.

Respondents also were asked if there are other features in the study area that are important, and if so, to please describe them, their locations, and to mark them on the maps attached to the questionnaire. Features marked on maps were taken into consideration. Written responses included:

- Existing or future residences, residential developments, or subdivisions (Links 55, 56, 60, 84, 85, 134, 139, 145, 151, 153, and 166);
- Schools (Link 166);
- Existing or future businesses or commercial developments (Links 103, 151, 166, 167, 179, and 180);
- Ranching or farming operations (Links 12, 104, 105, 138, 139, 143, 144, 147, 166, and 167);
- Existing water, irrigation, and drainage systems (Links 2, 3, 6, 104, 105, 138, and 153);
- Existing utility lines/facilities (Links 138 and 166);
- High-value land proposed for development (Links 137, 138, 139, 140, 142, and 149);
- Meadow Creek Golf Course (Link 85);
- Rio Grande Valley Veterans Cemetery (Link 85);
- Municipal park (Link 85);
- Existing gas wells (Links 56 and 60);
- Mining operations (Link 49);
- Bentsen Rio Grande World Birding Center;
- Bentsen Rio Grande Valley state park (Link 84);
- National wildlife area and endangered species (Links 84 and 166); and
- North American National Butterfly Center (Link 84).

When asked if respondents had concerns with any particular links, respondents listed multiple links. Links 139 and 166 were the most listed links, with five and six respondents, respectively, specifying concern with these links. Other links specified were 12, 84, 85, 103, 137, 138, and 167 (by two or three respondents). Twenty-eight other links were also specified as having a particular concern by one respondent each.

When asked which of four situations applied to them, respondents provided the following:

- 46% indicated that a potential link is near their home;
- 11% indicated that a potential link is near their business;
- 48% indicated that a potential link crosses their land; and

- 7% answered "Other."

(Due to multiple responses on some questionnaires, totals do not equal 100%.)

Respondents who answered "other" included those who have a link near their property or indicated "city" as their reasoning.

The questionnaire provided examples of two possible structures for the Project. Respondents were asked which of the two structures, wide-based lattice tower or monopole, would be preferable. Of the questionnaires received, 67% said they prefer the monopole structure, while 4% said they prefer the lattice structure, and 29% did not respond to this question. When asked why they preferred one structure over another, respondents felt that the monopole structure would take up less space; have less impact on aesthetics, property values, and existing/future land uses; cost less; have less impact on birds and wildlife; generate less electronic interference and noise; and have fewer impacts overall. Those that preferred the lattice structure noted that it looked sturdier and safer.

When asked what cost difference would be significant enough to justify using a structure other than the type selected as most preferable, respondents indicated a 0 to 50% cost difference.

Respondents were asked if an increase in the size (height and width) of structures to reduce the number of structures located on their property would factor into their desired structure selection. Respondents were also asked to comment on the importance of reducing the number of structures located on their property. Comments and responses to these questions were evenly split between fewer structures and smaller structures, with several favoring no structures, and also considered consistency with existing structures as an important factor.

The questionnaire also provided a space for respondents to include any additional remarks and comments. Comments and responses included:

- Request for expedient information about location of line with respect to property developments that are currently underway; and
- Preference for routes that do not cross commercially viable properties.

3.2.2.3 Mercedes Open-House (October 10, 2012)

A total of 36 individuals attended the October 10, 2012 Mercedes public open-house meeting according to the sign-in sheet, with 35 submitting questionnaire responses at the meeting. Results from the questionnaires were reviewed and analyzed, and 33 (94%) of the respondents agreed that the need for the Project was adequately explained, while zero (0%) respondents said it was not. Ninety-one percent of respondents were pleased with the open-house format of the meetings and felt that the information provided was helpful to their understanding of the Project. Ninety-one percent of respondents found the video to be helpful.

In ranking the 16 factors that are taken into consideration for a routing study (see Appendix B), with **1** being the least important factor and **5** being the most important factor, the five criteria that were ranked by the respondents as being the most important, in descending order, were:

- Maximize distance from residences — Most Important: 26 (74%)
- Maintain reliable electric service — Most Important: 22 (63%)

- Maximize distance from public facilities (e.g., parks and schools) — Most Important: 19 (54%)
- Minimize length across cropland — Most Important: 17 (49%)
- Maximize length across property boundary lines — Most Important: 17 (49%)

When asked if there are other factors that should be considered, and if they had any comments regarding the listed factors, respondents provided the following:

- Safety concerns for humans and livestock;
- Selection of a route away from populated areas, homes, croplands, businesses, schools, government buildings, recreation areas, and high-value commercial property;
- Concerns about economic impact on commercial and residential property values;
- Selection of a route that follows existing easements, property lines, floodway properties, or large undeveloped tracts;
- Selection of a route on the east side of the floodway;
- Selection of a route that does not bisect properties;
- Selection of route other than Link 205;
- Interference with existing or future land uses;
- Concerns about impact of flooding and other weather-related events on operation and maintenance of transmission lines and structures; and
- Concerns about easement restrictions.

Respondents also were asked if there are other features in the study area that are important, and if so, to please describe them, their locations, and to mark them on the maps attached to the questionnaire. Features marked on maps were taken into consideration. Written responses included:

- County stormwater reservoir (Link 145);
- Existing or future residences or subdivisions (Links 199, 200, 203, 205, and 206);
- Farming operations (Links 165, 168, 169, and 205);
- Airport and associated crop dusting operations (Link 205);
- Floodway and flood levees (Links 205 and 210);
- High-value land proposed for development (Link 103); and
- Future wind turbine farm along Hidalgo and Cameron county lines between US Hwy 83 and TX Highway 107.

When asked if respondents had concerns with any particular links, respondents listed multiple links. Link 205 was the most listed link, with five respondents specifying concern with this link. Other links specified were 199, 200, 203, 206, and 210 (by two or three respondents). Twelve other links were also specified as having a particular concern by one respondent each.

When asked which of four situations applied to them, respondents provided the following:

- 60% indicated that a potential link is near their home;
- 11% indicated that a potential link is near their business;
- 51% indicated that a potential link crosses their land, and
- 0% answered "Other."

(Due to multiple responses on some questionnaires, totals do not equal 100%.)

The questionnaire provided examples of two possible structures for the Project. Respondents were asked which of the two structures, wide-based lattice tower or monopole, would be preferable. Of the questionnaires received, 83% said they prefer the monopole structure, while 11% said they preferred the lattice structure, and 6% did not respond to this question. When asked why they preferred one structure over another, respondents felt that the monopole structure would take up less space; have less impact on aesthetics, property values, and existing land uses; cost less; and have fewer impacts overall. Those that preferred the lattice structure noted that it looked sturdier and safer.

When asked about the cost difference that would be significant enough to justify using a structure other than the type selected as most preferable, respondents indicated a cost difference of 10 to 50%.

Respondents were also asked if an increase in the size (height and width) of structures to reduce the number of structures located on their property would factor into their desired structure selection, and to comment on the importance of reducing the number of structures located on their property. Comments and responses to these questions generally favored no structures or smaller structures.

The questionnaire also provided space for respondents to include any additional remarks and comments. Comments and responses included:

- Proponent for having dependable energy; and
- Concern about costs to rate payers.

3.2.2.4 Mercedes Open-House (October 11, 2012)

A total of 37 individuals attended the October 11, 2012 Mercedes public open-house meeting according to the sign-in sheet, with 27 submitting questionnaire responses at the meeting. Results from the questionnaires were reviewed and analyzed, and 20 (74%) of the respondents agreed that the need for the Project was adequately explained, while six (22%) respondents said it was not. Eighty-nine percent of respondents were pleased with the open-house format of the meetings and 81% felt that the information provided was helpful to their understanding of the Project. Seventy-four percent of respondents found the video to be helpful.

Respondents were asked to rank the 16 factors that are taken into consideration for a routing study (see Appendix B), with **1** being the least important factor and **5** being the most important factor. Due to ties, the six criteria that were ranked by the respondents as being the most important are listed in descending order:

- Maximize distance from residences — Most Important: 17 (63%)
- Maintain reliable electric service — Most Important: 16 (59%)
- Maximize length through undeveloped land — Most Important: 13 (48%)
- Maximize distances from businesses — Most Important: 12 (44%)
- Maximize distance from public facilities (e.g., parks and schools) — Most Important: 11 (41%)
- Maximize length along property boundary lines — Most Important: 11 (41%)

When asked if there are other factors that should be considered, and if they had any comments regarding the listed factors, respondents provided the following:

- Request for information about how far the line will be from respondent's home;
- Safety concerns for humans from electromagnetic radiation;
- Safety concerns related to fire and the height of proposed lines;
- Selection of a route away from populated areas, homes, croplands, businesses, and schools;
- Concerns about economic impact on property values, including undeveloped lands currently for sale;
- Selection of a route that follows existing easements, property lines, or roadways;
- Selection of a route along the arroyo Colorado;
- Selection of a route that does not parallel the existing 138 kV line or bisect properties;
- Selection of a route that follows Links 142-149-166-175-180-187 and then Highway 281;
- Selection of route other than Links 125, 128, and 224;
- Concerns about loss of trees;
- Concerns about reduction in usable property and easement restrictions;
- Interference with existing land uses and resulting loss of current/future income; and
- Concerns about damage to underground drainage tiles.

Respondents also were asked if there are other features in the study area that are important, and if so, to please describe them, their locations, and to mark them on the maps attached to the questionnaire. Features marked on maps were taken into consideration. Written responses included:

- Proposed highway loop (Links 150, 156, and 157);
- High school currently under construction (Link 153);
- Migratory birds in floodway area along Camparuer Rd.;
- Existing or future residences or residential areas (Links 136, 165, 168, 169, and 210);
- Existing irrigation and drainage systems (Links 190 and 192);
- Farming and crop dusting operations (Link 192); and
- Boll weevil eradication program property (Link 192).

When asked if respondents had concerns with any particular links, respondents listed multiple links. Links 192 and 210 were the most listed links, with four and three respondents, respectively, specifying concern with these links. Thirteen other links were also specified as having a particular concern by one respondent each.

When asked which of four situations applied to them, respondents provided the following:

- 41% indicated that a potential link is near their home;
- 22% indicated that a potential link is near their business;
- 41% indicated that a potential link crosses their land; and
- 4% answered "Other."

(Due to multiple responses on some questionnaires, totals do not equal 100%.)

The respondents who answered "other" included respondents that have a link near their property.

The questionnaire provided examples of two possible structures for the Project. Respondents were asked which of the two structures, a wide-based lattice tower or monopole, would be preferable. Of the questionnaires received, 78% said they prefer the monopole structure, while 15% said they

preferred the lattice structure, and 7% did not respond to this question. When asked why they preferred one structure over another, respondents felt that the monopole structure would take up less space; have less impact on aesthetics, property values, and existing and future land uses; and have fewer impacts overall. Those that preferred the lattice structure noted that it would require less ground disturbance and looked more stable.

When asked what cost difference would be significant enough to justify using a structure other than the type selected as most preferable, respondents indicated a cost difference of 10 to 50%.

Respondents were also asked if an increase in the size (height and width) of structures to reduce the number of structures located on their property would factor into their desired structure selection, and were asked to comment on the importance of reducing the number of structures located on their property. Comments and responses to these questions generally favored no structures or fewer structures.

The questionnaire also provided a space for respondents to include any additional remarks and comments. Comments and responses included:

- Concern about width of easement;
- Willing to discuss route(s) that will benefit both the Project and lessen the impact on respondent's daily living;
- Acknowledgement that electricity is needed; and
- Unclear about who is paying for the Project.

3.2.2.5 Harlingen Open-House (October 15, 2012)

A total of 102 individuals attended the October 15, 2012 Harlingen public open-house meeting according to the sign-in sheet, with 71 submitting questionnaire responses at the meeting. Results from the questionnaires were reviewed and analyzed, and 69 (97%) of the respondents agreed that the need for the Project was adequately explained, while two (3%) respondents said it was not. Eighty-seven percent of respondents were pleased with the open-house format of the meetings and felt that the information provided was helpful to their understanding of the Project. Eighty-two percent of respondents found the video to be helpful.

Respondents were asked to rank the 16 factors that are taken into consideration for a routing study (see Appendix B), with **1** being the least important factor and **5** being the most important factor. Due to ties, the six criteria that were ranked by the respondents as being the most important are listed in descending order:

• Maximize distance from residences	Most Important: 54 (76%)
• Maintain reliable electric service	Most Important: 48 (68%)
• Maximize distance from public facilities (e.g., parks and schools)	Most Important: 43 (61%)
• Minimize length across cropland	Most Important: 40 (56%)
• Minimize total length of line (reduces cost of line)	Most Important: 39 (55%)
• Minimize loss of trees	Most Important: 39 (55%)

When asked if there are other factors that should be considered, and if they had any comments regarding the listed factors, respondents provided the following:

- Safety concerns for humans, wildlife, and property;
- Selection of a route away from populated areas, residential areas, homes, recreation areas, businesses, and towns/cities;
- Selection of a route that follows existing easements, roadways, or property lines;
- Interference with existing and future land uses or development and resulting loss of current/future income;
- Request to balance desire for the straightest/shortest route with a route that is least disruptive to economic and residential well being;
- Selection of a route closer to the Rio Grande;
- Selection of a route that does not bisect properties;
- Selection of a route that follows proposed waste transfer station property on the west side of East Solis Rd.;
- Safety concerns about weather-related damage to transmission lines and structures;
- Safety concerns for humans from electromagnetic radiation, sound emissions, and fire potential from faulty construction;
- Concerns about multiple lines crossing property;
- Concerns about impacts on restored and natural environments;
- Selection of route other than Links 264 and 269;
- Preference for routes that do not cross commercially viable properties;
- Concerns about existing water wells;
- Concerns about economic impact on property values;
- Interference with existing or future land uses;
- Concerns about reduction in usable property;
- Concerns about the number of properties to be impacted;
- Concerns about size and number of structures; and
- Concerns about visual impact.

Respondents also were asked if there are other features in the study area that are important, and if so, to please describe them, their locations, and to mark them on the maps attached to the questionnaire. Features marked on maps were taken into consideration. Written responses included:

- Existing or future homes, residential areas, subdivisions, or developments (Links 224, 235, 236, 244, 245, 246, 250, 251, 256, 257, 264, 270, 271, 281, 296, 298, 307, and 312);
- Existing businesses (Link 250);
- Brush land (Links 305, 306, and 307);
- Wetlands (Links 236 and 264);
- Existing utility lines/facilities (Links 236, 250, 252, 254, and 264);
- Existing irrigation systems (Link 236);
- Existing recreation areas (Link 236);
- Proposed waste refuge transfer station (Link 206);
- Floodplain area currently being used by an excavation company (Link 206); and
- Farming operations (Links 254, 259, 260, and 264).

When asked if respondents had concerns with any particular links, respondents listed multiple links. Links 236 and 252 were the most listed links, with ten and four respondents, respectively, specifying concern with these links. Other links specified were 224, 230, 235, 236, 244, 245, 246, 250, and 251 (by two or three respondents). Thirty other links were also specified as having a particular concern by one respondent each.

When asked which of four situations applied to them, respondents provided the following:

- 45% indicated that a potential link is near their home;
- 14% indicated that a potential link is near their business;
- 38% indicated that a potential link crosses their land: and
- 20% answered "Other."

(Due to multiple responses on some questionnaires, totals do not equal 100%.)

Respondents who answered "other" included "irrigation/drainage" as their reasoning.

The questionnaire provided examples of two possible structures for the proposed Project. Respondents were asked which of the two structures, a wide-based lattice tower or monopole, would be preferable. Of the questionnaires received, 69% said they prefer the monopole structure, while 20% said they preferred the lattice structure, and 11% did not respond to this question. When asked why they preferred one structure over another, respondents felt that the monopole structure would take up less space and require fewer structures; have less impact on aesthetics, property values, and existing and future land uses; and have fewer impacts overall. Those that preferred the lattice structure felt that it would require fewer structures due to taller structures and longer spans, have less impact on property values, and looked sturdier and safer.

When asked what cost difference would be significant enough to justify using a structure other than the type selected as most preferable, respondents indicated a cost difference of 0 to 50%.

Respondents were also asked if an increase in the size (height and width) of structures to reduce the number of structures located on their property would factor into their desired structure selection, and to comment on the importance of reducing the number of structures located on their property. Comments and responses to these questions were generally split between fewer structures and smaller structures, with several favoring no structures.

The questionnaire also provided a space for respondents to include any additional remarks and comments. Comments and responses included:

- Request to have drainage/irrigation districts conduct an impact analysis.

3.2.2.6 Brownsville Open-House (October 16, 2012)

A total of 72 individuals attended the October 16, 2012 Brownsville public open-house meeting according to the sign-in sheet, with 37 submitting questionnaire responses at the meeting. Results from the questionnaires were reviewed and analyzed, and 34 (92%) of the respondents agreed that the need for the Project was adequately explained, while one (3%) respondent said it was not. Ninety-two percent of respondents were pleased with the open-house format of the meetings and felt that the

information provided was helpful to their understanding of the Project. Eighty-one percent of respondents found the video to be helpful.

Respondents were asked to rank the 16 factors that are taken into consideration for a routing study (see Appendix B), with **1** being the least important factor and **5** being the most important factor. Due to ties, the seven criteria that were ranked by the respondents as being the most important are listed in descending order:

- Maximize distance from residences — Most Important: 26 (70%)
- Maximize distance from public facilities (e.g., parks and schools) — Most Important: 22 (59%)
- Maintain reliable electric service — Most Important: 20 (54%)
- Maximize length through undeveloped land — Most Important: 18 (49%)
- Minimize impacts to archaeological and historic sites — Most Important: 17 (46%)
- Maximize distances from businesses — Most Important: 17 (46%)
- Maximize length along property boundary lines — Most Important: 17 (46%)

When asked if there are other factors that should be considered, and if they had any comments regarding the listed factors, respondents provided the following:

- Concerns about visual impacts;
- Concerns about loss of trees;
- Safety concerns for humans from electromagnetic radiation and sound emissions;
- Safety concerns associated with fires and weather-related events;
- Acknowledged the beneficial impact of the Project;
- Interference with existing and future businesses or developments;
- Selection of a route that follows existing easements;
- Preference for use of residential solar panels;
- Concerns about impacts to birds, wildlife, and livestock;
- Concerns about economic impact on commercial and residential property values;
- Concerns about obstructing access to property and reduction in usable property;
- Selection of a route that does not follow the expressway;
- Selection of a more direct route;
- Interference with existing and future land uses or development and resulting loss of current/future income; and
- Selection of a route away from farmlands, wildlife areas, and urban areas.

Respondents also were asked if there are other features in the study area that are important, and if so, to please describe them, their locations, and to mark them on the maps attached to the questionnaire. Features marked on maps were taken into consideration. Written responses included:

- Existing and proposed residences and residential subdivisions (Links 235, 275, 279, 285, 291, 294, 287, 288, 290, 295, 297, 304, 308, and 313);
- National battlefield site;
- Existing natural gas well (Link 336);
- Proposed SH 550 project;

- Cemetery (Links 235 and 290);
- Farming operations (Link 292);
- City of Brownsville overlay district on FM 511;
- Obstructs property entrance (Links 269 and 287);
- Proposed University of Texas, Brownsville site (Links 298, 307, 312, and 315);
- Commercial properties along expressway;
- Lago Vista Master planned community (Link 317);
- Los Fresnos ISD school (Link 317); and
- Existing utility lines/facilities (Links 317 and 340).

When asked if respondents had concerns with any particular links, respondents listed multiple links. Links 279, 285, and 290 were the most listed links, with two respondents each specifying concern with these links. Twenty-two other links were also specified as having a particular concern by one respondent each.

When asked which of four situations applied to them, respondents provided the following:

- 19% indicated that a potential link is near their home;
- 3% indicated that a potential link is near their business;
- 41% indicated that a potential link crosses their land; and
- 19% answered "Other."

The questionnaire provided examples of two possible structures for the proposed Project. Respondents were asked which of the two structures, a wide-based lattice tower or monopole, would be preferable. Of the questionnaires received, 70% said they would prefer the monopole structure, while 11% said they preferred the lattice structure, and 19% did not respond to this question. When asked why they preferred one structure over another, respondents felt that the monopole structure would take up less space; have less impact on aesthetics, property values, and existing and future land uses; have fewer impacts overall; and be sturdier. Those that preferred the lattice structure noted that it looked sturdier and safer.

When asked what cost difference would be significant enough to justify using a structure other than the type selected as most preferable, respondents indicated a cost difference of 0 to 50%.

Respondents were also asked if an increase in the size (height and width) of structures to reduce the number of structures located on their property would factor into their desired structure selection, and to comment on the importance of reducing the number of structures located on their property. Comments and responses to these questions generally favored smaller structures.

The questionnaire also provided a space for respondents to include any additional remarks and comments. Comments and responses included:

- Willingness to sell or lease land to help the Project.

3.2.2.7 Mailed Comments

A total of 52 questionnaires and two letters commenting on the Project were received by ETT and Sharyland after the initial six public meetings took place. Results from the questionnaires were

analyzed, and 25 (48%) of the respondents agreed that the need for the Project was adequately explained, while five (10%) respondents said it was not. Forty-eight percent of respondents were pleased with the open-house format of the meetings and 44% felt that the information provided was helpful to their understanding of the Project. Twenty-five percent of respondents found the video to be helpful.

When asked to rank the 16 factors that are taken into consideration for a routing study (see Appendix B), with **1** being the least important factor and **5** being the most important factor, the five criteria that were ranked by the respondents as being the most important, in descending order, were:

- Maximize distance from residences — Most Important: 29 (56%)
- Maximize distance from public facilities (e.g., parks and schools) — Most Important: 26 (50%)
- Minimize visibility of the line — Most Important: 23 (44%)
- Maintain reliable electric service — Most Important: 22 (42%)
- Minimize length across cropland — Most Important: 19 (37%)

When asked if there are other factors that should be considered, and if they had any comments regarding the listed factors, respondents provided the following:

- Concerns about migratory species and their habitats;
- Request for additional meetings once environmental impact studies have been completed;
- Concerns about informing landowners that lines may cross their property(s);
- Selection of a route that maximizes use of state and federal land;
- Concerns about economic impact on property values;
- Interference with existing land uses;
- Selection of a route that does not bisect properties;
- Concerns about reduction in usable property;
- Safety concerns for humans, livestock, and birds;
- Preference for linear water features to be crossed rather than paralleled;
- Concerns about visual impacts;
- Concerns about impacts to existing and proposed developments;
- Concerns about access across private property or to commercial and highway frontage property;
- Concerns about impacts to expansion and growth of industrial, commercial, and residential areas;
- Preference for the line to be buried;
- Interference with irrigation canal maintenance;
- Preference for the line to be added to existing structures;
- Selection of a more direct route;
- Selection of a route along the northern edge of the Rio Grande valley, along Highway 281, along west side of FM 2221, along the railroad, or along the border corridor;
- Selection of a route through farmlands;
- Selection of a route that minimizes the number of undeveloped tracts crossed;
- Selection of a route that avoids farmlands, irrigation/drainage systems, resacas, and nature preserve lands; and

- Selection of a route that follows existing easements, roadways, canals, levees, or property lines.

Respondents also were asked if there are other features in the study area that are important, and if so, to please describe them, their locations and to mark them on the maps attached to the questionnaire. Features marked on maps were taken into consideration. Written responses included:

- Future retail/commercial development (Links 60, 135, 136, and 137);
- Planned or future development (Links 82, 83, 84, 139, 140, 142, 151, 153, 287, and 293);
- Main entrance to Retama Village Subdivision (Link 82);
- Existing and future homes, residential areas, subdivisions, and residential development (Links 41, 82, 83, 84, 85, 87, 89, 90, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 167, and 287);
- Existing and future businesses, schools, and religious facilities (Links 87, 89, 90, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, and 104);
- Natural and recreation areas (Links 82, 83, 84, and 85);
- Bentsen Rio Grande state park (Links 82 and 84);
- IDEA school (Link 83);
- Future high school (Link 153);
- Critical bird habitat (Link 84);
- Migratory bird and butterfly fly-ways (Link 84);
- World Birding Center (Links 82 and 84);
- North American Butterfly Association headquarters and butterfly park (Link 84);
- City of Mission municipal park (Link 85);
- Mission hike and bike trail (Link 85);
- Farming or ranching operations (Links 41, 42, 48, 49, 50, 51, 52, 53, 54, 56, 70, 141, 167, 287, and 312);
- Existing gas wells (Links 55 and 60);
- Existing utility lines (Links 41, 48, 49, 50, 51, 52, 53, 54, and 56);
- Proposed land bypass highway (Links 55 and 58);
- Property enrolled in Chapter 381 agreement or boll weevil eradication program (Links 41, 48, 49, 50, 51, 52, 53, 54, 56, and 70);
- Proposed commercial aviation training facility (Links 335, 336, and 337);
- Proposed law enforcement training facility, helicopter training facility, and search and rescue helicopter decks (Links 338 and 340);
- Existing irrigation/drainage systems (Links 42, 167, and 287); and
- Border Patrol helicopter fly-way (Links 70, 80, 82, and 84).

When asked if respondents had concerns with any particular links, respondents listed multiple links. Link 84 was the most listed link, with 12 respondents specifying concern with this link. Other links specified were 82 and 83 (by ten respondents each), 85 (by six respondents), 167 (by four respondents), 56 and 287 (by three respondents each), and 50, 53, 54, 55, 60, 70, 80, and 136 (by two respondents each). Forty-four other links were also specified as having a particular concern by one respondent each.

When asked which of four situations applied to them, respondents provided the following:

- 50% indicated that a potential link is near their home;
- 46% indicated that a potential link is near their business;
- 67% indicated that a potential link crosses their land; and
- 6% answered "Other."

(Due to multiple responses on some questionnaires, totals do not equal 100%.)

Respondents who answered "other" included "medical" as their reasoning.

The questionnaire provided examples of two possible structures for the proposed Project. Respondents were asked which of the two structures, a wide-based lattice tower or monopole, would be preferable. Of the questionnaires received, 50% said they prefer the monopole structure, while 4% said they preferred the lattice structure, and 46% did not respond to this question. When asked why they preferred one structure over another, respondents felt that the monopole structure would take up less space; have less impact on aesthetics, property values, and existing and future land uses; present fewer health concerns; and have fewer impacts overall. Those that preferred the lattice structure noted that it looked sturdier.

When asked what cost difference would be significant enough to justify using a structure other than the type selected as most preferable, respondents indicated a cost difference of 10 to 50%.

Respondents were also asked if an increase in the size (height and width) of structures to reduce the number of structures located on their property would factor into their desired structure selection, and to comment on the importance of reducing the number of structures located on their property. Comments and responses to these questions generally favored no structures.

The questionnaire also provided a space for respondents to include any additional remarks and/or comments. Comments and responses included:

- Concerns about health-related impacts.

3.2.3 Correspondence with Agencies/Officials

As described previously in Section 2.1.5, POWER contacted federal, state, and local regulatory agencies, elected officials, and organizations regarding the Project. As of the date of this document, written replies to the letters sent in relation to the study area were received from the following agencies or offices:

- **Federal**: EPA, FAA, IBWC, NPS, NRCS, USACE, USFWS;
- **State**: GLO, TARL, TCEQ, THC, TPWD, TWDB, TXNDD, TxDOT; and
- **Local and Other Organizations**: the cities of Edinburg and McAllen, the County Judge of Hidalgo County, Cameron County Drainage District #3, Cameron County Irrigation Districts #2 and #16, Delta Lake Irrigation District, Hidalgo County Irrigation Districts #2, #5 and #6, Harlingen ISD, Pharr-San Juan-Alamo ISD, Cameron County Regional Mobility Authority, Hidalgo County Regional Mobility Authority and TNC.

Copies of all correspondence with these agencies and offices are included in Appendix A. All agency comments, concerns, and information received were taken into consideration by EIT, Sharyland, and POWER in the preparation of this EA. Additionally, the information received from the agencies will

be taken into consideration by ETT and Sharyland before and during construction of the Project. A summary of the comments provided by federal, state, and local officials that have responded as of this writing is included in the Agency Correspondence Table in Appendix A.

3.2.4 Modifications to Preliminary Alternative Links

Following the initial public open-house meetings, ETT, Sharyland, and POWER performed an analysis of the input, comments, and information received at and following the open house meetings, and from follow-up meetings and communication with landowners, interested public stake-holders, and governmental agencies and offices. The purpose of this analysis was to determine any issues warranting modification to the preliminary alternative links and identify potential new links not presented at the meetings. Several preliminary alternative links were modified and some new links were added for the following reasons:

- To further reduce the number of habitable structures located within 500 feet of the centerline of a proposed link;
- To improve the paralleling of apparent property lines;
- To improve the paralleling of compatible ROW;
- To reduce potential land use impacts identified by regulatory agencies;
- To reduce potential land use impacts to newly constructed schools and roadways;
- To reduce potential land use impacts to newly developed communities and businesses; and
- To reduce other potential land use impacts to ranching and farming operations.

3.2.5 Additional Public Meeting (February 25, 2013)

Because modifications to the preliminary alternative links presented at the public open-house meetings held in October 2012 affected 482 landowners that were not affected by the preliminary alternative links presented at the October 2012 public meetings, ETT and Sharyland determined that they would hold an additional public open-house meeting for these newly affected landowners. A public meeting for these landowners was held on February 25, 2013 at The University of Texas-Pan American at 1407 E. Freddy Gonzales, Edinburg, Texas. As with the October 2012 public meetings, the purpose of the February 25, 2013 meeting was to:

- Promote a better understanding of the Project, including the purpose, need, potential benefits and impacts, and the PUC CCN application approval process;
- Inform and educate the public about the routing procedure, schedule, and decision-making process; and
- Ensure that the decision-making process adequately identifies and considers the values and concerns of the public and community leaders.

A public open-house meeting notice, in both English and Spanish, was submitted to the 482 newly affected landowners who own property located within 500 feet of the preliminary alternative link centerlines, as modified following the October 2012 public meetings. This notice included maps of the study area depicting the preliminary alternative links, a question and answer document, and a diagram of typical 345 kV transmission line structures. An example of the notice letter and a copy of the attachments are provided in Appendix B.

As with the October 2012 public meetings, this public meeting was held in an open-house format with representatives of ETT, Sharyland, ROW Services, Inc. (ETT and Sharyland's property research

consultant), and POWER, including Spanish speaking representatives, available to assist attendees. Large displays of project maps were presented with representatives available to assist individuals in finding particular properties.

When individuals arrived at the open-house meeting they were asked to sign a sign-in sheet and were provided a questionnaire. The questionnaire solicited comments on the Project and an evaluation of the information presented at the public meeting. A Spanish version of the questionnaire was also available. An example copy of the questionnaire is provided in Appendix B.

After visiting with Project representatives, individuals were asked to complete the questionnaire. Completed questionnaires were returned either at the meeting or later by mail; however, not all respondents answered every question.

A total of 13 individuals attended the February 25, 2013 public open-house meeting according to the sign-in sheet, with six submitting questionnaire responses at the meeting and four returning the questionnaire by mail. Results from the questionnaires were reviewed and analyzed, and 6 (60%) of the respondents agreed that the need for the Project was adequately explained, while 4 (40%) of the respondents said it was not. Eighty percent of respondents were pleased with the open-house format of the meetings and 40% felt that the information provided was helpful to their understanding of the Project. Due to the smaller number of invitees, the video was not shown at this open-house meeting.

Respondents were asked to rank the 16 factors that are taken into consideration for a routing study (see Appendix B), with **1** being the least important factor and **5** being the most important factor. Due to ties, the 6 criteria that were ranked by the respondents as being the most important are listed in descending order:

- Maximize length along existing transmission lines — Most Important: 8 (80%)
- Maintain reliable electric service — Most Important: 7 (70%)
- Maximize length along property boundary lines — Most Important: 7 (70%)
- Minimize visibility of the lines — Most Important: 6 (60%)
- Maximize length along highways or other roads — Most Important: 5 (50%)
- Minimize length across cropland — Most Important: 5 (50%)

When asked if there are other factors that should be considered, and if they had any comments regarding the listed factors, respondents provided the following:

- Safety concerns for humans;
- Concerns about development patterns not being taken into consideration for future planning;
- Concerns about visual impacts;
- Preference for route along residential areas;
- Selection of a route that follows existing easements or levy/interior floodway;
- Selection of a route that goes through the western portion of the valley;
- Concerns about fair compensation for encumbered land and loss of fair market value for entire property;
- Selection of a more direct route;

- Selection of a route that follows Links 123, 132, and 133, or Links 126, 171, and 177 (from map dated August 31, 2012);
- Selection of a route that does not cross properties diagonally;
- Preference for route that crosses wetlands and floodplain properties;
- Interference with existing and future land uses;
- Concerns about economic impacts on property values;
- Concerns about conflicts of interest with Hunt-owned development of Sharyland Plantation;
- Selection of a route other than Links 124 and 172; and
- Concerns about impacts to proposed Hidalgo County RMA loop development, RMA toll road, and the City of Pharr's truck connector.

Respondents also were asked if there are other features in the study area that are important, and if so, to please describe them, their locations, and to mark them on the maps attached to the questionnaire. Features marked on maps were taken into consideration. Written responses included:

- Future master planned community between I Rd. and Caesar Chavez Rd.;
- Future TIRZ;
- Existing homes, businesses, and farming operations (Links 124 and 132);
- RMA toll roads;
- City of Pharr truck connector;
- Sharyland Plantation;
- Fortco Properties Master Planned Community (Links 124, 127, 128, 129, 130, 132, 133, 170a, 170b, 172, 173, 174, 175, 176, 178, 179, 180, 183, 186, and 188a);
- Ancestral home built in 1920 (Link 124); and
- Future development (Links 127, 128, 129, and 130).

When asked if respondents had concerns with any particular links, respondents listed multiple links. Link 124 was the most listed link, with two respondents each specifying concern with this link. Twelve other links were also specified as having a particular concern by one respondent each.

When asked which of four situations applied to them, respondents provided the following:

- 70% indicated that a potential link is near their home;
- 40% indicated that a potential link is near their business;
- 40% indicated that a potential link crosses their land; and
- 20% answered "Other."

(Due to multiple responses on some questionnaires, totals do not equal 100%.)

Respondents who answered "other" included those who have a link parallel to their property.

The questionnaire provided examples of two possible structures for the proposed Project. Respondents were asked which of the two structures, a wide-based lattice tower or monopole, would be preferable. Of the questionnaires received, 70% said they would prefer the monopole structure, no respondents preferred the lattice structure, 10% preferred an underground line, and 20% did not respond to this question. When asked why they preferred one structure over another, respondents felt that the monopole structure would take up less space, have less impact on aesthetics, property values,

and existing land uses; and have fewer impacts overall. Those that preferred a buried line felt that it was a better option in hurricane-prone areas.

When asked what cost difference would be significant enough to justify using a structure other than the type selected as most preferable, respondents indicated a cost difference of 0 to 50%.

Respondents were also asked if an increase in the size (height and width) of structures to reduce the number of structures located on their property would factor into their desired structure selection, and to comment on the importance of reducing the number of structures located on their property. Comments and responses to these questions generally favored no structures or fewer structures.

The questionnaire also provided a space for respondents to include any additional remarks and comments. Comments and responses included:

- Proponent of buried transmission line; and
- Concerns about not receiving open-house meeting notices or Project information (e.g., timeline, process for intervening).

3.2.6 *Primary Alternative Links*

Following the February 25, 2013 public open-house meeting, additional modifications were made to the preliminary alternative links, resulting in development of 367 primary alternative links (route links). Using the 367 primary alternative links, ETT, Sharyland, and POWER identified primary alternative routes for the Project, with each of the 367 primary alternative links incorporated in at least one route. Ultimately, 32 primary alternative routes were selected that, when combined, form an adequate number of reasonable and geographically diverse primary alternative routes that reflect all of the previously discussed routing considerations. These 32 primary alternative routes were then specifically studied and evaluated by POWER staff, though of course, many more alternative routes might be formed by utilizing the links in different combinations.

The primary alternative routes, their link compositions, and approximate lengths are presented in Table 3-1 and are depicted in Figure 3-2 and Figure 5-1 in Appendix D. Potential impacts for each of the evaluation criteria (see Table 2-1) were tabulated for each of the primary alternative routes (see Section 4.0 and Table 4-1).

TABLE 3-1 LINK COMPOSITION AND APPROXIMATE LENGTH OF THE PRIMARY ALTERNATIVE ROUTES

ALTERNATIVE ROUTE	LINK COMPOSITION	LENGTH (MILES)
1	2-6-8-12-14-18-27-28-41a-353-62b-85a-85c-84b-85b-88-91-102-111-118a-118c-125a-125b-127 172-173b-178-184-193a-193b-361-351b-193c-195-198-202-208-211-218-223-224-228-232-241-250-252-254-264-270-269-268-275-280-282-284-296-307-315-316-318-332-333	101.9
2	1-3-6-8-11-13-14-18-27-28-41a-353-62a-59-61-342-72-74-77-81-82-83-85a-85c-84b-84c-87-90-91-99-100-101a-101b-105-106-113-117-119-121-129-179-181-184-193a-193b-361-351b-193c-195-198-199-203-212-214-216-218-223-224-227-231-236-261a-354-263b-266-273-308-319-326-328-335-340-341	119.5
3	1-3-5-7-9-8-11-15 20-19-18-27-28-41a-41b-57-59-347-60-64-342-71a-71b-75-79-80-82-83-85a-85c-84b-84c-87-89-92-94-98-101a-104-108-111-118a-118c-352-170b-172-173b-174-175-179-185 187a-187b-196a-196b-200-203-212-214-216-	114.6

TABLE 3-1 LINK COMPOSITION AND APPROXIMATE LENGTH OF THE PRIMARY ALTERNATIVE ROUTES

ALTERNATIVE ROUTE	LINK COMPOSITION	LENGTH (MILES)
	218-221-222-231-237-241-250-252-254-264-270-272-285-287-295-296-306-312-313-330a-358-330c-339-341	
4	1-4-7-9-8-11-15-22-23-24-27-28-41a-41b-57-62a-62b-85a-85c-84b-84c-87-89-92-93-97-105-107-115-122-123-132a-356-124-133-188a-188b-196a-196b-204-215-220-226-233-235-257-258-265-286-288-290-293-301-302-317-318-332-334	107.7
5	1-3-6-8-11-15-20-19-18-27-28-41a-353-62b-85a-85c-84b-85b-88-91-102-111-118a-118c-352-170b-172-173b-178-184-193a-193b-361-351b-193c-195-198-202-208-211-218-223-224-228-232-241-250-252-254-259-260-261a-354-263b-266-273-308-320-326-328-336-338-339-341	107.1
6	2-6-9-10-16-26-32-33-35-36-37-39-40-41a-41b-57-62a-62b-85a-85c-84b-84c-87-89-92-93-97-105-107-114-119-120-122-123-132a-132b-133-188a-350-349b-187a-360-361-351b-193c-195-198-202-208-211-216-219-226-233-235-256-258-265-286-288-289-291-297-298-315-316-318-331	109.7
7	1-4-7-9-8-11-15-22-25-31-32-33-35-36-37-38-40-41a-353-62a-59-347-60-63-67a-67b-343-71b-75-78-81-82-359-85c-84b-84c-87-90-91-102-111-116-117-119-121-130-180-183-188a-188b-196a-196b-200-203-212-214-219-226-233-234-244-245-253-254-259-262-263a-263b-266-274-277-304-305-312-313-330a-330b-330c-339-341	116.1
8	1-3-6-8-11-15-22-25-30-33-35-36-37-39-40-41a-41b-57-59-61-342-71a-71b-75-79-80-82-84a-84b-84c-87-90-91-102-111-118a-118c-352-170a-171-173a-173b-178-184-193a-349a-187a-187b-196a196b-204-215-220-226-233-234-240-239-242-251-252-254-264-270-272-279-281-282-283-305-312-314-316-318-331	112.0
9	2-6-8-11-15-20-21-24-27-29-36-37-38-40-41a-41b-57-59-347-60-64-342-72-73-75-78-81-82-84a-84b-84c-87-89-92-94-98-101a-104-109-113-117-119-121-130-180-186-350-188b-196a-196b-200-203-212-214-217-220-226-233-234-244-246-255-265-286-287-295-296-307-315-316-318-332-333	105 7
10	2-5-7-10-17-26-32-33-43-45-51-48-54-56-60-64-342-71a-71b-75-78-81-82-359-85c-84b-84c-87-89-92-93-97-105-107-114-119-121-131-132a-132b-133-188a-188b-196a-196b-200-203-212-214-219-226-233-235-256-258-265-271-270-269-268-275-276-277-304-305-312-313-357-339-341	113.6
11	2-6-9-10-16-26-32-33-43-45-47-50-53-55-344-347-61-342 72-74-77-81-82-83-85a-85c-84b-85b-88-91-102-111-118a-118c-125a-125b-127-172-173b-178-184-193a-193b-361 351b-193c-195-197-201-210-222-231-237-238-242-248-249-255-265-271-270-269-268-267-273-308-321-322-327-328-336-338-339-341	121.4
12	1-3-6-8-11-15-22-25-31-34-46-51-48-53-55-344-60-64-342-71a-71b-75-78-81-82-84a-84b-84c-87-89-92-94-98-101a-101b-105-106-113-117-119-121-131-132a-132b-133-188a-188b-196a-196b-200-203-209-211-218-223-224-227-231-236-261a-261b-263a-263b-266-267-275-276-277-309-310-322-323-324-329-337-340-341	124 5
13	2-6-8-11-15-20-19-18-27-29-36-42-50-53-55-344-60-63-67a-67b-70-80-82-359-85c-84b-84c-87-89-92-94-96-97-105-107-115-120-121-131-132a-132b-133-188a-188b-196a-351a-351b-193c-195-198-202-208-211-218-223-225-230-233-235-256-258-265-286-288-289-292-293-300-302-317-318-332-333	119 8
14	1-3-6-8-12-14-18-27-29-36-42-50-53-55-344-347-61-342-72-74-76-78-81-82-84a-84b 84c-87-90-91-102-108-109-110-114-119-120-122-123-132a-356-124-133-188a-188b-196a-196b-204-213 214-219-226-233-234-244-245-253-254-264-271-286-287-294-297-299-317-318-332-334	117.7
15	2-6-8-12-14-18-27-29-36-42-50-53-55-344-347-59-62a-62b-85a-85c-84b-85b-88-91-102-111-118a-118c-352-170b-172-173b-178-184-193a-193b-361-351b-193c-	118.1

TABLE 3-1 LINK COMPOSITION AND APPROXIMATE LENGTH OF THE PRIMARY ALTERNATIVE ROUTES

ALTERNATIVE ROUTE	LINK COMPOSITION	LENGTH (MILES)
	195-198-202-208-211-218-223-224-228-232-241-250-252-254-264-270-269-268-275-280-282-284-296-307-315-316-318-332-333	
16	2-6-9-10-17-26-32-33-43-45-47-50-54-56-347-61-342-71a-71b-75-78-81-82-359-85c-84b-84c-87-90-91-99-100-101a-101b-105-106-113-117-119-121-130-176-175-174-178-184-193a-193b-361-351b-193c-194-201-210-222-231-237-238-242-248-249-255-265-271-270-269-268-267-273-308-320-326-328-335-340-341	119.0
17	2-5-7-10-17-26-32-33-43-45-51-48-54-56-60-64-342-71a-71b-75-78-81-82-359-85c-84b-84c-87-90-91-102-111-118a-118c-352-170b-172-173b-178-184-193a-193b-361-351b-193c-195-198-202-208-211-218-223-224-228-232-241-250-252-254-264-270-269-268-267-273-308-321-322-327-328-335-340-341	116.4
18	1-3-6-8-11-15-22-25-30-33-43-44-46-51-52-55-344-60-64-342-71a-71b-75-78-81-82-83-85a-85c-84b-85b-88-91-102-111-118a-118c-125a-125b-128-175-179-185-187a-187b187-196a-196b-200-203-212-214-219-226-233-234-244-246-255-265-286-287-294-297-298-315-316-318-331	115.1
19	1-3-6-8-11-13-14-18-27-29-36-42-50-54-56-347-61-342-72-74-76-79-80-82-84a-84b-84c-86-88-91-99-100-101a-101b-105-107-114-119-121-131-132a-132b-133-188a-188b-196a-196b-204-215-220-226-230-229-232-241-250-252-254-264-271-286-288-290-293-301-302-317-318-332-333	114.7
20	134-136a-355-137b-139-142-149-166-170a-352-118c-118a-116-117-119-121-130-180-186-349b-187a-360-361-351b-193c-195-198-202-208-211-218-223-224-228-232-241-250-252-254-259-260-261a-354-263b-266-273-308-320-326-328-336-338-339-341	98.8
21	134-135-137a-137b-138-141-147-148-151-154-158-157-156-166-170a-352-118c-118a-116-117-119-121-130-176-179-185-187a-187b-196a-196b-200-203-209-211-218-223-224-228-232-237-236-261a-354-263b-266-274-277-309-311-324-329-337-340-341	112 1
22	134-136a-355-137b-139-142-149-166-170a-352-118c-118a-116-117-119-121-130-180-186-350-188b-196a-196b-200-203-212-214-219-226-233-235-256-258-265-271-270-269-268-275-276-277-304-305-312-313-357-339-341	96.3
23	134-136a-136b-137a-137b-138-141-145-144-150-156-166-170a-170b-172-173b-174-175-129-121-119-114-115-122-123-132a-356-124-133-188a-188b-196a-196b-200-203-212-214-219-226-233-234-240-239-242-251-252-254-259-260-261a-261b-263a-263b-266-273-303-304-305-306-307-315-316-318-332-333	112.5
24	134-135-137a-137b-138-141-147-152-153-154-158-157-156-166-171-173a-173b-174-175-176-130-121-119-114-115-122-123-132a-356 124-133-188a-188b-196a-196b-204-215-220-226-233-234-244-245-253-254-264-271-286-288-289-292-293-301-302-317-318-332-334	111.9
25	134-136a-355-137b-139-142-149-156-157-158-159-160-162-165-169-184-178-173b-172-170b-352-118c-118a-116-117-119-121-129-179-185-187a-360-361-351b-193c-194-201-210-222-231-237-241-247-248-249-255-265-271-270-272-279-278-268-275-276-277-309-311-324-329-337-340-341	110.0
26	134-135-137a-137b-139-142-143-150-157-167-168-169-184-181-182-180-130-121-119-114-115-122-123-132a-132b-133-188a-188b-196a-196b-204-215-220-226-233-234-240-243-253-254-259-260-261a-354-263b-266-267-275-276-277-309-311-324-325-330a-330b-330c-339-341	112 3
27	134-136a-355-137b-139-142-143-144-146-151-154-159-161-163-165-169-184-178-174-128-125b-125a-118c-118a-116-117-119-121-130-180-186-349b-187a-360-361-351b-193c-194-201-207-208-211-218-223-224-228-232-241-250-252-254-264-270-272-279-281-282-283-305-312-313-330a-358-330c-339-341	104.3

TABLE 3-1 LINK COMPOSITION AND APPROXIMATE LENGTH OF THE PRIMARY ALTERNATIVE ROUTES

ALTERNATIVE ROUTE	LINK COMPOSITION	LENGTH (MILES)
28	134-136a-355-137b-139-142-143-144-146-148-152-155-162-165-169-184-178-173b-172-170b-352-118c-118a-116-117-119-121-130-180-186-349b-187a-187b-196a-196b-200-203-212-214-216-218-223-224-228-232-241-247-248-249-255-265-271-270-269-268-275-276-277-304-305-312-314-316-318-332-333	108 0
29	134-135-137a-137b-138-141-145-146-151-154-159-161-164-168-169-184-178-173b-172-170b-352-118c-118a-116-117-119-121-130-180-186-350-188b-196a-196b-204-215-217-216-218-223-224-227-231-237-241-250-252-254-264-271-286-287-294-297-299-317-318-332-333	109.2
30	134-136a-355-137b-138-141-147-152-155-162-165-169-184-181-182-180-130-121-119-114-115-122-123-132a-356-124-133-188a-188b-196a-196b-200-203-212-214-219-226-233-235-257-258-265-271-270-269-268-275-276-277-304-305-312-313-357-339-341	113 2
31	2-6-8-11-15-20-19-18-27-29-36-42-50-54-56-60-64-342-71a-71b-75-78-81-82-83-85a-85c-84b-84c-87-89-92-94-98-101a-101b-105-107-114-119-121-130-180-186-349b-187a-360-361-351b -193c-195-198-202-208-211-218-223-224-228-232-238-242-248-249-255-265-286-288-289-291-297-299-317-318-331	108 2
32	1-4-7-10-17-26-32-33-43-45-51-48-54-56-60-64-342-71a-71b-75-78-81-82-83-85a-85c-84b-84c-87-89-92-94-96-97-105-107-114-117-116-118a-118c-125a-125b-128-175-179-185-187a-187b-196a-196b-200-203-212-214-219-226-233-235-256-258-265-271-270-269-268-267-274-277-304-305-312-313-357-339-341	117 5

(This page left blank intentionally.)

4.0 POTENTIAL IMPACTS OF THE PRIMARY ALTERNATIVE ROUTES

This section discusses potential impacts that could be caused by the Project's construction and operation. POWER evaluated the potential impacts of each of the primary alternative routes identified in Section 3.0 by tabulating the data for the evaluation criteria in Table 2-1 (relating to community values, parks and recreation areas, cultural resources, aesthetics, and environmental integrity). The results of the tabulation are presented in Table 4-1. Additionally, through the identification of key evaluation criteria and a consensus process, POWER recommended to ETT and Sharyland the alternative route that best addresses the requirements of PURA and the P.U.C. Substantive Rules (see Section 5.0) relating to ecology, community values, land use and cultural resources.

4.1 IMPACTS ON COMMUNITY VALUES, LAND USE, AND SOCIOECONOMICS

An evaluation of adverse impacts or effects upon community values is conducted to identify aspects of the proposed Project that would significantly and negatively alter the use, enjoyment, or intrinsic value attached to an important area or resource by a community. This evaluation considers community concerns that are applicable to this specific project's location and characteristics and does not include consideration of objections to electric transmission lines in general.

Potential impacts to community resources can be classified into direct and indirect effects. Direct effects are those that would occur if the location and construction of a transmission line result in the removal or loss of public access to a valued resource. Indirect effects are those that would result from a loss in the enjoyment or use of a resource due to the characteristics (primarily aesthetic) of the proposed transmission line, tower structures, or ROW.

4.1.1 Impacts on Land Use

The magnitude of potential impacts to land use resulting from the construction of a transmission line is determined by the amount of land (land use type) temporarily or permanently displaced by the actual ROW and by the compatibility of the facilities with adjacent land uses. During construction, temporary impacts to land uses within the ROW might occur due to the movement of workers, equipment, and materials through the area. Construction noise and dust, as well as temporary disruptions of traffic flow, might also temporarily affect local residents and businesses in the area immediately adjacent to the ROW. Coordination between ETT, Sharyland, their contractors, local governmental agencies and landowners regarding road and ROW access and construction scheduling should minimize these disruptions.

The evaluation criteria used to compare potential land use impacts include overall route length, route length parallel to existing linear corridors (including apparent property boundaries), route proximity to habitable structures, route length across various land use types, and route proximity to park and recreational areas. An analysis of the existing land use within and adjacent to the proposed ROW is required to evaluate the potential impacts.

Alternative Route Length
The total lengths of the alternative routes vary from 96.3 miles for Alternative Route 22 to 124.5 miles for Alternative Route 12. The differences in route lengths reflect the direct or indirect pathway of each alternative route between the Project endpoints, which include the routing of the alternative

routes near the AEP TCC South McAllen Substation. The lengths of the alternative routes may also reflect the effort to parallel existing transmission lines, other existing linear features, apparent property boundaries, and the geographic diversity of the alternative routes. The approximate lengths for each of the alternative routes are presented in Table 4-1.

Compatible ROW

P.U.C. SUBST. R. 25.101(b)(3)(B) requires that the PUC consider whether new transmission line routes are within existing compatible ROWs and/or parallel to existing compatible ROWs, apparent property lines, or other natural features. Criteria were used to evaluate compatible ROW utilization, length of route parallel and adjacent to existing transmission line ROW, length of route parallel to other existing linear ROWs, and length of route parallel to apparent property lines.

It should also be noted that if a link parallels more than one existing linear corridor, only one linear corridor was tabulated (e.g., Link 86 parallels both an existing transmission line and a roadway, but it was only tabulated as paralleling the transmission line).

Three alternative routes will potentially utilize existing transmission line ROW. Alternative Routes 12 and 23 utilize 0.6 mile each, while Alternative Route 7 utilizes 0.4 mile. All of the alternative routes parallel some length of existing transmission line ROW. The total alternative route lengths parallel and adjacent to existing transmission line ROW vary from approximately 11.8 miles for Alternative Route 25, to approximately 40.6 miles for Alternative Route 5. The lengths parallel and adjacent to existing transmission line ROW for each of the alternative routes are presented in Table 4-1.

The alternative routes with lengths paralleling other existing linear features, including roadways, pipelines, railways, and canals range from approximately 25.2 miles for Alternative Route 5, to approximately 52.4 miles for Alternative Route 25. The lengths paralleling other existing linear features for each of the alternative routes are presented in Table 4-1.

The alternative routes were developed to parallel apparent property boundaries to the extent feasible in the absence of other existing linear corridors. The lengths paralleling apparent property boundaries range from approximately 12.1 miles for Alternative Route 1, to approximately 22.2 miles for Alternative Route 16. The lengths paralleling apparent property boundaries for each of the alternative routes are presented in Table 4-1.

All of the alternative routes parallel existing linear features for at least 73% of their lengths. The percentage of each route that parallels existing linear features ranges from 73% for Alternative Route 6, to 81.5% for Alternative Route 30.

Table 4-1 Environmental Data for Route Evaluation
(Sheet 1)

**THIS PAGE IS OVERSIZED
AND CAN BE VIEWED
IN CENTRAL RECORDS**

(This page left blank intentionally.)

Table 4-1 Environmental Data for Route Evaluation
(Sheet 2)

**THIS PAGE IS OVERSIZED
AND CAN BE VIEWED
IN CENTRAL RECORDS**

(This page left blank intentionally.)

4.1.1.1 Impacts on Urban and Residential Areas

Typically, one of the most important measures of potential land use impacts is the number of habitable structures located in the vicinity of each alternative route. Based on direction provided by the PUC, habitable structure identification is included in the CCN filing. POWER determined the number of habitable structures located within 500 feet of each alternative route centerline and their distance from the centerline through the use of GIS software, interpretation of aerial photography, and verification during reconnaissance surveys.

All of the 32 alternative routes for this Project have habitable structures located within 500 feet of their centerlines. Alternative Route 32 has the fewest with 465 habitable structures located within 500 feet of the centerline, followed by Alternative Route 31 with 674, and Alternative Route 10 with 718. By comparison, Alternative Route 26 has the most habitable structures located within 500 feet of the centerline with 1,818, followed by Alternative Route 23 with 1,725, and Alternative Route 20 with 1,508. The number of habitable structures located within 500 feet of each of the alternative route centerlines are presented in Table 4-1.

Several of the alternative routes for this Project have habitable structures located within 75 feet of their centerlines. These habitable structures will potentially have to be relocated or removed due to engineering constraints associated with the size of the double circuit capable 345 kV transmission line. Alternative Routes 13, 15, 22, 24, and 31 have the fewest with zero habitable structures potentially to be relocated or removed, followed by Alternative Routes 10, 18, 20, and 21 with one. By comparison, Alternative Routes 8 and 9 have the most habitable structures potentially to be relocated or removed with 13 each, followed by Alternative Route 12 with ten. The number of habitable structures potentially to be relocated or removed for each of the alternative routes is presented in Table 4-1.

Land Use Categories
An analysis of compatibility with adjacent land use types was completed for each alternative route. Land use categories identified within the study area include cropland, land with traveling irrigation systems, pastureland/rangeland, orchards, and lands with conservation easements.

4.1.1.2 Impacts on Agriculture

Impacts to agricultural land uses can generally be ranked by degree of potential impact, with the least potential impact occurring in areas where cultivation is not the primary use (pasture/rangeland), followed by cultivated croplands, and then by cultivated orchards, which have the highest degree of potential impact. The use of pasture/rangeland can be continued within the ROW following construction. Most cultivated cropland use should be able to be resumed within the ROW following construction and restoration. Restoration would include repair to the irrigation system if damaged. If the route crosses a cultivated orchard, ETT and Sharyland would prefer to have the 150 foot easement cleared of trees for construction, operation, and maintenance benefits.There are both NERC and ANSI clearance guidelines that must be considered for any vegetation remaining within the 150 foot easement. However, ETT and Sharyland are willing to work with the owner of a cultivated orchard to retain trees within the 150 foot easement if they are regularly trimmed by the operator of the orchard to remain under 15 feet in height with some additional structure height being added. This would provide for the necessary NERC and ANSI clearance requirements for safety and reliability. Additional clearance height may also be required based on the height of equipment used by the operator for harvesting. Also, if the operator of the cultivated orchard does desire to retain trees

within the 150 ft easement, there will still be some damage to the cultivated orchard during construction and there will be some loss of trees where structures are located. ETT and Sharyland will retain the right in its easement language to remove trees if the operator of the orchard discontinues its operation and if the operator fails to keep trees trimmed to 15 feet or less those trees shall be removed.

All of the alternative routes cross some length of pasture/rangeland; however, because the ROW for this Project will not be fenced or otherwise separated from adjacent lands, there will be no significant long-term displacement of farming or grazing activities. Alternative route lengths crossing pasture/rangeland areas range from approximately 21.2 miles for Alternative Route 27, to approximately 31.4 miles for Alternative Route 11. The lengths of each of the alternative routes crossing pasturelands are presented in Table 4-1.

All of the alternative routes cross some length of cropland with a large portion being irrigated; however, due to the relatively small area affected (beneath the structures), and the short duration of construction activities at any one location, such impacts should be short term with a small loss of production area. Alternative route lengths crossing cropland areas range from approximately 50.5 miles for Alternative Route 1, to approximately 72.3 miles for Alternative Route 26. The lengths of each of the alternative routes crossing croplands are presented in Table 4-1.

All of the alternative routes cross some length of citrus orchards. During the route development process, efforts to minimize potential impacts to orchards included avoidance and paralleling apparent property lines or existing transmission lines when possible. Alternative route lengths crossing orchards range from approximately 2.7 miles for Alternative Route 26, to approximately 7.9 miles for Alternative Route 6. The lengths of each of the alternative routes crossing orchards are presented in Table 4-1.

None of the alternative routes cross agricultural lands with known mobile irrigation systems (rolling or pivot); see Table 4-1.

4.1.1.3 Impacts on Lands with Conservation Easements

As discussed in Section 2.2.2.3, there are numerous properties within the study area with known conservation easements. The proposed Project would have no significant impact on lands with conservation easements. Further, ETT and Sharyland will coordinate with landowners during transmission line construction and operation for continued operation of ongoing or existing land management activities.

4.1.1.4 Impacts on Transportation, Aviation and Utility Features

Transportation

Potential impacts to transportation could include temporary disruption of traffic or conflicts with future proposed roadways and/or utility improvements. Traffic disruptions would include those associated with the movement of equipment and materials to the ROW, and slightly increased traffic flow and/or periodic congestion during the construction phase of the proposed Project. In the rural portions of the study area, these impacts are typically considered minor, temporary, and short-term. In the urban portions of the study area, the temporary impacts to traffic flow can be significant during construction, and ETT and Sharyland will coordinate with the agencies in control of the impacted roadways to address these traffic flow impacts as well as possible during the construction phase of the

Project. As mentioned in Section 2.2.2.5, there are a number of future roadway expansion projects that were considered during the routing process.

The number of US and State highways crossed by the alternative routes ranges from six highway crossings for Alternative Routes 6 and 31, to 26 highway crossings for Alternative Route 26. The number of FM roads crossed by the alternative routes ranges from 14 road crossings for Alternative Route 22, to 28 road crossings for Alternative Route 18. As mentioned above, ETT and Sharyland would be required to obtain road-crossing permits from TXDOT for any crossing of state-maintained roadways. The number of US, State highways, and FM road crossings for each of the alternative routes are presented in Table 4-1.

Aviation

According to FAA regulations, Title 14 CFR Part 77, the construction of a transmission line requires FAA notification if tower structure heights exceed the height of an imaginary surface extending outward and upward at a slope of 100:1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway having at least one runway longer than 3,200 feet. The FAA also requires notification if tower structure heights exceed a 50:1 slope for a horizontal distance of 10,000 feet from the nearest runway where no runway is longer than 3,200 feet in length, and if tower structure heights exceed a 25:1 slope for a horizontal distance of 5,000 feet for heliports.

One public FAA-registered airport is located within 20,000 feet of the alternative route links, the McAllen Miller International Airport. Following PUC approval of a route for the proposed transmission line, ETT and Sharyland will make a final determination of the need for FAA notification, based on specific route location and structure design. The result of this notification, and any subsequent coordination with the FAA, could include changes in the line design and/or potential requirements to mark and/or light the structures.

All of the alternative routes have three or four public and/or private FAA-registered airports with one runway more than 3,200 feet in length located within 20,000 feet of their centerline.

The number of FAA-registered airports with no runway more than 3,200 feet in length located within 10,000 feet of the alternative routes ranges from none (zero) on Alternative Routes 4, 6, and 30 to five on Alternative Route 17.

Each of the alternative routes has one private airstrip located within 10,000 feet of the centerlines. The number of heliports located within 5,000 feet of the alternative routes ranges from none (zero) on 20 of the alternative routes to three on Alternative Route 5. Table 4-1 presents airport, airstrip and heliport information for each of the alternative routes.

Regarding private airstrips, there are nine known private airstrips located within 10,000 feet of the alternative route links; seven are FAA registered. There are also three private heliports located within 5,000 feet of the alternative links. The distance for each private airstrip from the nearest route was measured using GIS software and aerial photography interpretation (see Table 4-2). All known airport/airstrip and heliport locations are shown on Figure 5-1 in Appendix D.

TABLE 4-2 AIRSTRIP RUNWAY LOCATIONS

FIGURE 5-1 MAP ID	AIRSTRIP	ALTERNATIVE ROUTES	ESTIMATED RUNWAY LENGTH (FEET)[1]	EXCEEDS SLOPE[1,2]
6579	Moore Field (FAA Private)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 31, 32	Runway 13/31: 5,150 Runway 9/27: 5,000 Runway 18/36: 5,000	Yes
6580	Private Airstrip 1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 ,13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32	1,434	Yes
6581	Norman & White[3] (FAA Private)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 ,13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32	4,000	Yes
6583	Palmview Police Department (FAA Private Heliport)	1, 4, 5, 6, 15	60	Yes
6584	Moore Airpark (FAA Private)	2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 31, 32	2,150	Yes
6585	McAllen-Miller International Airport (FAA Public)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 ,13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32	Runway 13/31: 7,120 Runway 18/36: 2,638	Yes
6586	Mid-Valley Dusters Airport (FAA Private)	1, 3, 5, 8, 11, 15, 16, 17, 20, 21, 22, 23, 24, 25, 27, 28, 29	1,925	Yes
6590	Progreso Airport (FAA Private)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 ,13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32	4,470	Yes
6593	Farmer's Co op Airport	1, 2, 3, 5, 7, 8, 12 14, 15, 17, 19, 20, 21, 23, 24, 26, 27, 29	1,479	Yes
6594	Valley Baptist Medical Center 1 (FAA Private Heliport)	2, 5, 12, 20, 21, 23, 26	60	Yes
6595	Valley Baptist Medical Center 2 (FAA Private Heliport)	2, 5, 7, 12, 20, 21, 23, 26	60	Yes
6596	Kornegay Private Airport (FAA Private)	2, 5, 7, 11, 12, 16, 17, 20, 21, 23, 26, 32	2,600	Yes
6597	Drennan Farm Airport (FAA Private)	2, 5, 11, 16, 17, 20	1,500	Yes

[1] Sources: FAA 2013; POWER aerial photo and USGS interpretation
[2] Sources: POWER aerial photo and USGS interpretation considering elevation information obtained from USGS topographic maps and a typical transmission structure height of 145 feet.

[3] It is unlikely that the Norman & White private airstrip is currently being used as an active airstrip on a regular basis. The runway was originally registered with the FAA as 4 000 feet in length, however, the currently useable length was measured at 2,830 feet. Obstructions such as a fence at one end of the runway and a building at the other end limit the useable length to less than 3,200 feet. Satellite imagery from 1995 shows airplanes near the dirt runway and indicates that the runway was being used at that time. Recent imagery shows that the location of the planes shown in 1995 is currently not accessible from the runway due to a fence, utility pole, and vegetation.

Utilities

Utility features, including existing electrical transmission lines, distribution lines, pipelines, and water wells are crossed by all of the alternative routes. If these utility features are crossed by or are in close vicinity to the centerline of the alternative route approved by the PUC, ETT and Sharyland will coordinate with the appropriate entities to obtain necessary permits or permission as required to ensure safety and the continued use of the existing services provided by these utility features.

Several existing electric transmission lines were identified within the study area, and each of the alternative routes cross several existing transmission lines. The number of transmission line crossings ranges from 19 crossings for Alternative Route 17 to 34 crossings for Alternative Route 7. As mentioned above, ETT and Sharyland will coordinate with the appropriate entity to ensure safe and continued operation of these and other utility features. The number of transmission line crossings for each of the alternative routes is presented in Table 4-1.

Numerous oil and gas pipelines were identified within the study area. ETT, Sharyland and POWER applied a set-back distance of 200 feet from alternative route centerlines to identified well heads using 2012 RRC data layers, aerial photo interpretation, and GIS software generated measurements. In some instances the set-back distance was reduced due to the need to traverse a particular area to connect the Project endpoints while also considering other existing constraints in the area. Pipelines that are crossed by the alternative route approved by the PUC will be indicated on engineering drawings and flagged in the field prior to construction. ETT and Sharyland will coordinate with pipeline companies during transmission line construction and operation for continued safe operation of potentially-affected oil and gas facilities. The number of known pipelines crossed by the alternative routes ranges from 48 pipeline crossings for Alternative Route 22, to 106 pipeline crossings for Alternative Route 15. The number of pipeline crossings for each of the alternative routes is presented in Table 4-1.

In addition, primarily in the southeast portion of the study area, irrigation canals and distribution piping are also crossed by the alternative routes. Water wells and water tanks are scattered throughout the study area and were mapped and avoided to the extent practicable. There is also a large IBWC managed ROW traversing several sections of the study area. All of the alternative routes cross this IBWC managed ROW. Alternative route lengths crossing IBWC managed ROW range from approximately 0.9 mile each for Alternative Routes 23 and 30 to approximately 10.4 miles for Alternative Route 25. The lengths of each of the alternative routes crossing IBWC are presented in Table 4-1.

4.1.1.5 Impacts on Electronic Communication Facilities

The distance of each electronic communication facility from the closest link was measured using GIS software and aerial photograph interpretation (see Table 4-3).

TABLE 4-3 ELECTRONIC COMMUNICATION FACILITIES

FIGURE 5-1 MAP ID	TOWER TYPE	NEAREST LINK	DISTANCE FROM NEAREST LINK(FEET)
6343	Other electronic installation	1	369
6344	Other electronic installation	7	664
6345	Other electronic installation	14	1,081
6346	Other electronic installation	14	1,086
6347	FM radio transmitter	16	394
6348	FM radio transmitter	35	160
6349	Other electronic installation	28	1,669
6350	Other electronic installation	28	608
6351	Other electronic installation	28	187
6352	AM radio transmitter	28	974
6359	Other electronic installation	62b	442
6360	Other electronic installation	62b	1,910
6373	Other electronic installation	88	998
6383	Other electronic installation	94	761
6385	Other electronic installation	100	1,646
6386	Other electronic installation	100	146
6390	Other electronic installation	105	793
6391	Other electronic installation	115	832
6395	Other electronic installation	121	1,508
6396	Other electronic installation	121	1,327
6397	Other electronic installation	121	1,486
6398	Other electronic installation	121	1,590
6399	Other electronic installation	121	1,529
6400	Other electronic installation	123	790
6404	FM radio transmitter	128	1 318
6405	Other electronic installation	180	277
6452	AM radio transmitter	137b	4,462
6453	AM radio transmitter	355	4,179
6454	AM radio transmitter	136a	3,953
6455	AM radio transmitter	136a	3,951
6456	Other electronic installation	136a	1,977
6459	Other electronic installation	137b	1,093
6460	Other electronic installation	142	268
6461	AM radio transmitter	141	2,257
6462	AM radio transmitter	141	2,115
6463	AM radio transmitter	141	2,351
6464	AM radio transmitter	141	1,975
6465	AM radio transmitter	141	2,068
6467	Other electronic installation	141	1,210
6468	Other electronic installation	141	1,215
6469	AM radio transmitter	151	2 072
6470	AM radio transmitter	151	2,221
6471	AM radio transmitter	151	2,401
6472	AM radio transmitter	151	1,976
6473	AM radio transmitter	151	2,074
6474	Other electronic installation	149	638

TABLE 4-3 ELECTRONIC COMMUNICATION FACILITIES

FIGURE 5-1 MAP ID	TOWER TYPE	NEAREST LINK	DISTANCE FROM NEAREST LINK(FEET)
6475	FM radio transmitter	158	233
6477	Other electronic installation	169	1,638
6480	Other electronic installation	169	1,193
6482	Other electronic installation	188b	605
6529	Other electronic installation	196b	1,486
6530	Other electronic installation	196b	834
6531	Other electronic installation	199	1,582
6532	Other electronic installation	216	1,201
6533	Other electronic installation	226	1,125
6535	Other electronic installation	222	1,801
6536	FM radio transmitter	222	1,530
6537	FM radio transmitter	226	781
6539	Other electronic installation	235	248
6540	Other electronic installation	235	190
6541	Other electronic installation	254	573
6542	Other electronic installation	254	360
6543	Other electronic installation	255	784
6544	Other electronic installation	257	1,444
6549	Other electronic installation	261a	71
6550	Other electronic installation	261a	1,893
6551	Other electronic installation	354	984
6560	Other electronic installation	329	460
6561	Other electronic installation	295	830
6563	Other electronic installation	295	115
6565	Other electronic installation	300	1,638
6566	Other electronic installation	301	500
6567	Other electronic installation	317	230
6578	Other electronic installation	122	93

Sources: POWER aerial photo and USGS interpretation; FCC 2011

The number of commercial AM radio towers located within 10,000 feet of the alternative route centerlines ranges from none (zero) for twelve of the alternative routes to 14 for seven of the alternative routes. The number of FM radio transmitters, microwave towers, and other electronic installations located within 2,000 feet of the alternative route centerlines ranges from five on Alternative Route 17, to 25 on Alternative Route 26. Refer to Table 4-1 for the number of commercial AM radio transmitters located within 10,000 feet of the alternative routes, and the number of FM radio transmitters, microwave towers, and other electronic installations located within 2,000 feet of the alternative routes.

4.1.1.6 Impacts on Socioeconomics

Construction and operation of the proposed transmission line is not anticipated to result in a significant change in the population or employment rate within the study area. For this Project, some short-term employment would be generated. ETT and Sharyland normally use contract labor supervised by ETT and Sharyland employees during the clearing and construction phase of transmission line projects. Construction workers for the Project would likely commute to the work

site on a daily or weekly basis instead of permanently relocating to the area. The temporary workforce increase would likely result in an increase in local retail sales due to purchases of lodging, food, fuel, and other merchandise for the duration of construction activities. No additional staff would be required for line operations and maintenance.

ETT and Sharyland are also required to pay sales tax on purchases and are subject to paying local property tax on land or improvements as applicable.

4.2 IMPACTS ON PARKS AND RECREATION AREAS

Potential impacts to parks or recreation areas include the disruption or preemption of recreation activities. As previously mentioned in Section 2.3, numerous parks and recreational areas were identified within the study area.

The distance of each park or recreation area from the nearest route link was measured using GIS software and aerial photography interpretation (see Table 4-4). No significant impacts to the use or enjoyment of the parks and recreation facilities located within the study area are anticipated from any of the alternative routes. No adverse impacts from any of the alternative routes are anticipated for any fishing or hunting areas.

TABLE 4-4 PARKS AND RECREATION AREAS

FIGURE 5-1 MAP ID	PARKS AND RECREATION AREAS	NEAREST LINK	DISTANCE FROM NEAREST LINK (FEET)
6599	LRGV NWR Monte Cristo	17	121
6600	Martin Valley Ranch Golf Course	59	103
6601	Chihuahua Woods Preserve	72	0
6602	Las Palomas WMA-Kiskadee Unit	70	95
6603	Bentsen Rio Grande Valley State Park	84a	0
6605	City of Mission Hike and Bike Trail	85b	478
6606	Madero Park	87	306
6607	Palm View Golf Course	102	0
6608	Balboa Park	102	408
6609	Springfest Park	102	0
6610	San Juan Community Resource Center and Park	149	775
6611	Las Palomas WMA-Baird Unit	193b	96
6612	Las Palomas WMA-Taormina Unit	193b	437
6613	Las Palomas WMA-Champion Unit	188b	481
6614	Las Palomas WMA-Ebony Unit	255	528
6615	Resaca de la Palma State Park	301	409
6616	Brownsville Sports Park	317	0
6617	Palo Alto Battlefield National Historical Site/Park	330b	0

Sources POWER aerial photo and USGS interpretation.

The number of parks or recreation areas crossed by the alternative routes ranges from none (zero) for 13 of the alternative routes to five for Alternative Route 14. The number of additional parks or

recreation areas located within 1,000 feet of the alternative route centerlines ranges from none (zero) for Alternative Route 21 to 9 for Alternative Route 16. Refer to Table 4-1 for the number of parks or recreation areas crossed and located within 1,000 feet of the alternative routes.

Alternative route lengths crossing the USFWS LRGV NWR range from none (zero) for 16 of the alternative routes to approximately 1.8 miles for Alternative Route 8. The lengths of each of the alternative routes crossing the LRGV NWR are presented in Table 4-1.

4.3 IMPACTS ON HISTORICAL (CULTURAL RESOURCES) VALUES

4.3.1 Impacts on Historical (Cultural Resources) Values

Methods for identifying, evaluating, and mitigating impacts to cultural resources have been established for federal projects or permitting actions, primarily for purposes of compliance with the National Historic Preservation Act (NHPA). Similar methods are often used when considering cultural resources affected by state-regulated actions. In either case, this process generally involves: (1) identifying significant (i.e., national or state-designated) cultural resources within 1,000 feet of the centerline of each routing alternative; (2) determining the potential impacts of the project on those resources; and (3) implementing, where appropriate, measures to avoid, minimize, or mitigate those impacts.

Impacts associated with the construction, operation, and maintenance of transmission lines can affect cultural resources either directly or indirectly. Construction activities associated with any proposed project can adversely impact cultural resources if those activities alter the integrity of key characteristics that contribute to a property's significance as defined by the standards of the NRHP or the Texas State Antiquities Code. These characteristics might include location, design, setting, materials, workmanship, feeling, or association for architectural and engineering resources or archeological information potential for archeological resources.

4.3.2 Direct Impacts

Direct impacts are those effects that physically or visually alter the integrity of key aspects or qualities that define the historical significance of the resource. Typically, direct impacts are caused by the actual construction of the line or through increased vehicular traffic during the construction phase.

4.3.3 Indirect Impacts

Indirect impacts include those effects caused by the Project that are farther removed in distance or that occur later in time but are reasonably foreseeable. These indirect impacts might include introduction of visual or audible elements that are out of character with the resource or its setting. Indirect impacts might also occur as a result of alterations in the pattern of land use, changes in population density, accelerated growth rates, or increased pedestrian or vehicular traffic after construction. Historic buildings, structures, landscapes, and districts are among the types of resources that might be adversely impacted by the indirect impact of the proposed transmission towers and lines.

4.3.4 Mitigation

Mitigation for direct and indirect impacts to cultural resources may be achieved, where appropriate, by avoidance through Project redesign. Additional mitigation measures for direct impacts may include implementing a program for data recovery excavations if an archeological site cannot be avoided. Indirect impacts on historical properties and landscapes can be lessened through careful design and landscaping considerations, such as using vegetation screens or berms where practicable. Additionally, relocation might be possible for some historic structures.

4.3.5 Summary of Cultural Resource Impacts

The distance of each recorded archeological site, NRHP property, NHL and cemetery located within 1,000 feet from the nearest route was measured using GIS software and aerial photography interpretation. Eight recorded archeological sites are directly crossed by alternative route centerlines. These include sites 41CF92, 41CF107, 41CF203, 41CF208, 41HG94, 41HG144, 41HG151, and 41HG230, which are discussed below. The routes crossing these sites are shown in tables in Appendix C. Aside from 41CF92, a site that includes the Palo Alto Battlefield National Historic Landmark (discussed below) and could potentially be impacted, no impacts are expected for the archeological sites. It is anticipated that potential direct impacts to these sites will be mitigated through routing and/or engineering design and construction measures that will protect the archeological sites. An additional seven archeological sites, 41CF123, 41CF143, 41HG141, 41HG142, 41HG145, 41HG208, and 41HG226 will be crossed by a ROW that is assumed to extend 75 feet from the centerline. Potential direct impacts to these sites could be mitigated through routing and/or engineering design and construction measures that will protect the archeological sites. Recorded archeological sites do not typically depend on visual and aesthetic qualities for their cultural significance, so no visual indirect effects are anticipated for the archeological sites. No cemeteries are crossed by the proposed routes.

Because a cultural resource survey has not been conducted for most of the alternative routes, additional cultural resources sites that have not yet been recorded or evaluated might also exist within these corridors. Consequently, the potential of impacting undiscovered cultural resources exists along many of the alternative routes. To assess this potential, HPAs for additional, unrecorded prehistoric resources were identified by a professional archeologist by reviewing aerial, soil, and topographic maps. Topography, availability of water and other natural resources are all taken into consideration to determine HPAs, as well as the effects of geologic processes on archeological deposits. Water crossings, stream confluences, closed depressions capable of holding water, stream terraces, wide floodplains, and areas near previously recorded sites are all typical HPAs, as well as lithic resource outcroppings, and the locations of other resources. HPAs defined using these considerations were mapped using GIS and the length of each alternative route across the HPAs was tabulated for use in comparison of the alternative routes. The TASA was also reviewed to identify areas where prehistoric resources have been documented in the vicinity of the study area.

HPAs for prehistoric sites were identified near streams, closed depressions, and previously recorded archeological sites. Historic HPAs were also identified within the Louisiana-Rio Grande Canal Company Irrigation System boundary, and within 1,000 feet of known historical sites. These include sites 41CF208 and 41HG230, remnants of the Old Military Road, each previously determined eligible for listing on the NRHP. The following discussion summarizes the number of previously recorded cultural sites as well as predicted HPAs as they were identified for the Project.

Archeological site 41CF92, the archeological site trinomial assigned to the Palo Alto Battlefield, includes within its boundary the Palo Alto Battlefield National Historic Site as mapped by the NPS and by the NRHP. The Palo Alto Battlefield Historic Site is also a NHL, a Texas Cultural Landscape, a Texas Military Site, and the subject of an OTHM. For purposes of this analysis, the boundary mapped by the THC will be used to assess possible impacts to the largest and most inclusive recorded site boundary. Alternative Routes 1, 3, 4, 6, 7, 8, 9, 13, 14, 15, 18, 19, 23, 24, 26, 27, 28, 29, and 31 cross the battlefield. Alternative Routes 10, 22, 30, and 32 are proposed to be 154 feet from the battlefield. Each of these routes has the potential to affect the visual and aesthetic qualities of this historic property, and potentially directly impact archeological deposits. According to the THC (2013), the Palo Alto Battlefield remains undeveloped and "appears much as it was during the battle, with cordgrass surrounded by mesquite and cactus." In addition to historic material, prehistoric archeological material has been noted within the battlefield boundary.

All route alternatives cross the Louisiana-Rio Grande Canal Company Irrigation System (commonly known today as the Hidalgo County Irrigation District No. 2), an NRHP-listed historic property. No adverse effects to the NRHP district are anticipated because engineering design and construction measures used for the Project will not directly affect the contributing elements of the historic property, and the visual and aesthetic qualities historically associated with the canal system have already been substantially altered. The historic property consists of three primary elements: the First Lift Pumphouse, the Second Lift Pumphouse, and the canal system. The First Lift Pumphouse is located south of the study area boundary. The Second Lift Pumphouse is located over one mile from the nearest proposed route. The canal system includes over 500 miles of lined and unlined canals and pipes, bank to bank, along with 10 feet of buffer zone along the banks. This large-area resource was designed and built to support intensive agricultural development, although land use patterns have changed extensively to dense suburban residential and commercial development in recent decades. Thus, the aesthetic quality and historical integrity of the setting associated with this canal system has been extensively altered in recent years, thereby diminishing the severity of visual or aesthetic changes caused by the proposed Project. It is anticipated that direct impacts to the canal system components will be avoided by Project design. The entirety of the property boundary is considered to have a high potential for archeological sites associated with temporary camps and other activities associated with the construction of the canal system.

The centerlines of Alternative Routes 4, 6, and 10 are located approximately 221 feet northeast of the southeast corner of the NRHP-listed La Lomita Historic District. La Lomita is a ranch established in 1770 by Jose Antonio Cantu. In 1851, the ranch became an important stop between the Catholic Church's Brownsville headquarters and the Roma mission. An adobe chapel was built on the ranch in 1865, and rebuilt in 1899 after the original chapel was destroyed in a flood. A rectory, guesthouse, quarters for lay brothers, blacksmith shop, buggy shed and houses followed as a village sprang up around the chapel. In 1912, St. Peter's Novitiate was constructed on top of a small hill for which the ranch was named. No impacts to the district are anticipated by the proposed Project.

Archeological site 41CF107 is crossed by the centerlines of Alternative Routes 1, 6, 8, 9, 15, 18, 23, and 28. The centerlines of Alternative Routes 4, 13, 14, 19, 24, 29, and 31 are approximately 92 feet from the site. 41CF107 is a scatter of burned clay and shell fragments on a low, ovoid clay dune. Although no subsurface testing was undertaken at the site, the depth of the site is estimated to be less than one foot, according to the site form. No additional work was recommended for the site.

Archeological site 41CF203 is crossed by the centerlines of Alternative Routes 4, 13, 19, and 24. 41CF203 is a scatter of post-1939 glass and ceramics that has been disturbed by plowing. According to the site form, 41CF203 does not appear to be eligible for listing on the NRHP.

Archeological site 41CF208 includes portions of the Old Military Road in Cameron County. The Old Military Road stretched from La Puerta to Brownsville, and is now mostly covered by US Hwy 281. Based on National Register eligibility testing excavations, portions of the approximately 92-mile-long site have been determined to be eligible for listing on the NRHP, although much of it has been destroyed by highway construction, pipeline construction, canal construction, and other impacts. 41CF208 is crossed several times by the centerlines of Alternative Routes 4, 8, 9, 13, 19, 24, 26, 29, and 30. In addition, the 150-foot ROW of Alternative Routes 6, 10, 22, and 32 would cross the site.

Archeological site 41HG94 is a lithic scatter that surrounds a large depression in a citrus grove. Lithic debitage, bifacial tools, and burned rocks were observed at the site. The centerlines of Alternative Routes 1, 2, 3, 4, 5, 6, 7, 8, and 9 cross the site. Although no recommendations concerning NRHP eligibility were made on the site form, it was recommended that construction activities near and within the site be monitored by archeologists.

Archeological site 41HG144 is a large prehistoric open campsite that is crossed by the centerlines of Alternative Routes 2, 9, 11, 14, and 19, and within 1,000 feet of the centerlines of Alternative Routes 3, 8, 10, 12, 16, 17, 18, 31, and 32. Burned rocks, projectile point fragments, stone tools, and lithic debitage have been observed at the site, although no evidence of features was noted during the most recent site visit. The northernmost extent of the large site is reported to be disturbed, although the southern portion of the site appears to be less disturbed and has the potential for buried archeological deposits.

Archeological site 41HG151 is a large prehistoric lithic scatter and possible campsite crossed by the centerlines of Alternative Routes 3, 9, 10, 12, 17, 18, 31, and 32. The centerlines of Alternative Routes 2, 8, 11, 14, 16, and 19 are approximately 105 feet from the site. Archeological site 41HG151 dates, at least in part, to the Late Prehistoric period. A Starr projectile point, stone tools, cores, debitage, and edge-modified debitage were observed at the site. The site has been impacted by plowing, roadway construction, and the installation of utilities, and is not recommended to be eligible as an SAL or for listing on the NRHP.

Archeological site 41HG230 is the Hidalgo County portion of the Old Military Road, a 92-mile-long historic road that stretched from La Puerta to Brownsville, and is now mostly covered by US Hwy 281. Based on National Register eligibility testing excavations, portions of the Old Military Road have been located and been determined to be eligible for listing on the NRHP, although much of it has been destroyed by highway construction, pipeline construction, canal construction, and other impacts. Archeological site 41HG230 is crossed several times by the centerlines of Alternative Routes 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, and 32. In addition, the 150-foot ROW of Alternative Routes 1, 5, and 15 would cross the site. The centerline of Alternative Route 21 comes within 271 feet of the site.

Archeological site 41CF123 is located four feet from the centerline of Alternative Routes 1, 3, 5, 7, 8, 14, 15, 17, 19, 20, 23, 24, 26, 27, and 29. Only a point is provided by TASA for the site location. According to the site form, the site measures 20 meters by 10 meters, so it is likely to be crossed by the centerlines of the above mentioned alternative route centerlines, and will be crossed by the ROW

of those routes. Archeological site 41CF123 is an historic lithic scatter dating after 1918. The site is likely the former location of a house. The site has been destroyed by plowing and highway construction and is not eligible for listing on the NRHP.

Archeological site 41CF143 is a prehistoric open campsite located 34 feet from the centerlines of Alternative Routes 2, 12, 16, 17, 21, and 25, and thus likely to be crossed by the proposed ROWs of those alternative routes. Otoliths, shell fragments, and possible expedient shell tools were observed at the site, located on a clay dune near San Martin Lake. The site has been impacted by the construction of a transmission line and ranching, and is not recommended as eligible for listing on the NRHP on the site form.

Archeological site 41HG141 is an open campsite containing Cameron, Starr, and Fresno projectile points, a disk-shaped conch whorl bead, and debitage. The assemblage at the site is typical of Brownsville Complex sites. The site is located 75 feet from the centerlines of Alternative Routes 2, 3, 8, 9, 10, 11, 12, 14, 16, 17, 18, 19, 31, and 32. Only point location data is available for the site, although the site form states the site is approximately 40 feet by 50 feet, thus likely to extend into the ROW of the above alternative routes. According to the site form, 41HG141 lacks deep deposits and does not appear to warrant additional investigations.

Archeological site 41HG142 is a prehistoric open campsite located approximately 73 feet from, and in the ROW of the centerlines of Alternative Routes 2, 3, 8, 9, 10, 11, 12, 14, 16, 17, 18, 19, 31, and 32. This large, dense site contains evidence of multiple occupations dating to the Archaic and Late Prehistoric periods. Shell, projectile points, and a variety of stone tools have been observed at the site. Portions of the large site have been obliterated by residential developments, and most of the site has been disturbed by terracing and cultivation. Relatively undisturbed portions of the site appear to have the potential for listing on the NRHP, or for SAL designation.

Archeological site 41HG145 is an historic scatter dating to the early 1900s and a prehistoric open campsite located 46 feet from the centerline of Alternative Routes 1, 5, 11, 15, 18 and 19, and thus crossed by the ROW of these alternative routes. The historic scatter consists of glass, ironstone, brick fragments, and metal. The prehistoric component consists of a small amount of lithic debitage and burned clay. It is suggested that the prehistoric component may actually be derived from road gravels, and thus modern. Despite this possibility, and disturbances from plowing, floodway construction, and road construction, the site form states that the site has the potential to be a SAL, although it is not eligible for listing on the NRHP.

Archeological site 41HG208 is an historic scatter located 59 feet from the centerline of Alternative Route 13, and thus within the proposed ROW Prehistoric, protohistoric, and Spanish Colonial materials are reported from the site. Prehistoric lithic debitage, a Guerro projectile point, historic ceramics, and modern trash were observed at the site. The potential for Spanish Colonial materials and contact-era native artifacts suggests the site has the potential for listing on the NRHP. Additional testing to determine the eligibility status of the site is recommended on the site form.

Archeological site 41HG226 is a prehistoric lithic scatter located approximately 68 feet from the centerline of Alternative Routes 10, 16, 17, 19, 31, and 32, and thus within the proposed ROWs associated with those routes.

An additional 31 archeological sites are located between 75 and 1,000 feet from the alternative route centerlines. These sites are all summarized in Table 4-5. Seventeen cemeteries are located within 1,000 feet of the alternative route centerlines. Fifteen of these cemeteries are recorded in the TASA. Of these fifteen cemeteries, five are designated Historic Texas Cemeteries. The distances and directions to the cemeteries are summarized in Table 4-6.

All of the alternative routes cross high probability areas for prehistoric cultural resources (see Table 4-1). Alternative Routes 5, 28, and 1 cross the least amount of HPA, with 69.8, 71.7, and 75.4 miles of HPA, respectively. Alternative Routes 19, 24, and 23 cross the most HPA, with 92.4, 95.9, and 96.0 miles of HPA crossed, respectively. Alternative Routes 11 and 5 also cross the first and third least amount of HPA as a percentage of the route length (62.2 and 65.2 percent, respectively), whereas Alternative Routes 24 and 23 cross the second and third highest percentage of HPA (85.4 and 85.7 percent, respectively).

TABLE 4-5 KNOWN ARCHEOLOGICAL SITES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

SITE TRINOMIAL	DESCRIPTION	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE SITE	ALTERNATIVE ROUTE(S)	COMMENTS
41CF92	Palo Alto Battlefield National Historic Site (archeological site boundary). Site of 1846 battle between Mexican and American troops.	318, 330b, 330c, 331, 332, 333, 334, 358	0		1, 3, 4, 6, 7, 8, 9, 13, 14, 15, 18, 19, 23, 24, 26, 27, 28, 29, 31	NRHP-listed property, NHL, Texas Cultural Landscape, OTHM, Texas Military Site.
		357	154	SW	10, 22, 30, 32	
41CF107	Prehistoric; Burned clay and shell fragment on clay dune	316	0		1, 6, 8, 9, 15, 18, 23, 28	No additional work recommended per site form.
		318	92	NW	4, 13, 14, 19, 24, 29, 31	
41CF122	Prehistoric; Three pieces of burned clay and one mussel shell fragment along resaca	254	705	NE	1, 3, 5, 7, 8, 14, 15, 17, 19, 20, 23, 24, 26, 27, 29	Described as destroyed on site form.
41CF123	Historic refuse scatter	254	4	E	1, 3, 5, 7, 8, 14, 15, 17, 19, 20, 23, 24, 26, 27, 29	Described on site form as destroyed by plowing.
41CF143	Prehistoric open campsite; otoliths, shell fragments, utilized shell fragment	329	33	E	2, 12, 16, 17, 21,25	No recommended actions on site form.
41CF195	Prehistoric open campsite; Lightning whelk tool, oyster shell fragments, and daub	329	780	N	12, 21, 25	Disturbed by erosion and plowing.
41CF201	Historic whiteware scatter	293	408	S	4, 13, 19, 24	Recommended ineligible for NRHP per site form; disturbed by plowing.
41CF202	Historic scatter (1916 present)	293	296	S	4, 13, 19, 24	Ineligible for NRHP per site form, disturbed by plowing.
41CF203	Historic scatter (post 1939)	293	0		4, 13, 19, 24	Ineligible for NRHP per site form; disturbed by plowing.
41CF207	Historic: Mexican Period, Republic of Texas Period	332	395	SW	1, 4, 9,13, 14,15, 19, 23, 24, 28, 29	Isolate: not recommended as

TABLE 4-5 KNOWN ARCHEOLOGICAL SITES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

SITE TRINOMIAL	DESCRIPTION	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE SITE	ALTERNATIVE ROUTE(S)	COMMENTS
	Isolated lead ingots	331	927	S	6, 8, 18, 31	eligible as SAL per site form.
41CF208	Historic: Early Statehood. Old Military Road. Rounded aligned cobbles/stones with large pieces of cedar exposed in testing efforts.	217, 220, 257, 209, 292, 293	0		4, 8, 9, 13, 19 24, 26, 29, 30	Eligible for listing in the National Register on its own merit, and may be a component of a potential National Register Archeological District associated with the Mexican American War Battlefield Sites.
		235	66	SW	6, 10, 22, 32	
41HG30	Prehistoric open campsite	118c	687	N	1, 3, 5, 8, 11, 15, 17, 18, 20, 21, 22, 25, 27, 28, 29, 32	Extensive testing recommended per site form.
41HG92	Prehistoric lithic scatter	41a	284	N	1, 2, 3, 4, 5, 6, 7, 8, 9	Monitoring of impacts to site recommended on site form.
41HG94	Prehistoric lithic scatter	41a	0		1, 2, 3, 4, 5, 6, 7, 8, 9	Monitoring of impacts to site recommended on site form.
41HG95	Prehistoric lithic scatter	41b	457	S	3, 4, 6, 8, 9	Monitoring of impacts to site recommended on site form.
41HG96	Prehistoric open campsite	41b	166	S	3, 4, 6, 8, 9	Has potential for listing on NRHP, testing recommended on site form.
41HG97	Prehistoric lithic scatter	41b	356	SE	3, 4, 6, 8, 9	Monitoring of impacts to site recommended on site form.
41HG98	Prehistoric lithic scatter / open campsite	41b	212	W	3, 4, 6, 8, 9	Monitoring of impacts to site recommended on site form.

TABLE 4-5 KNOWN ARCHEOLOGICAL SITES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

SITE TRINOMIAL	DESCRIPTION	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE SITE	ALTERNATIVE ROUTE(S)	COMMENTS
41HG99	Archaic lithic scatter	56	901	W	10, 16, 17, 19, 31, 32	
41HG108	Archaic lithic scatter	585	585	S	10, 12, 17,18, 32	Described on site form as disturbed by orchard.
41HG114	Unknown	12	762	E	1, 14, 15	
41HG118	Archaic lithic scatter, possible habitation site	88	488	N	1, 5, 11, 15, 18, 19	Potentially eligible for listing in NRHP; additional testing recommended.
41HG119	Historic scatter and burned clay	88	410	E	1, 5, 11, 15, 18, 19	
41HG129	Prehistoric open campsite	142	255	N	20, 22, 25, 26, 27, 28	Lacks potential for NRHP listing per site form.
41HG141	Prehistoric open campsite; lithic scatter, shell refuse, Starr and Fresno projectile points and shell bead observed	342	75	E	2, 3, 8, 9, 10, 11, 12, 14, 16, 17, 18, 19, 31, 32	Appears to lack buried deposits per site form. Site is likely to extend into ROW.
41HG142	Prehistoric open campsite with evidence of multiple occupations; shell, projectile points, stone tools	342	73	W	2, 3, 8, 9, 10, 11, 12, 14, 16, 17, 18, 19, 31, 32	Large, dense site has potential for NRHP listing or SAL per site form.
41HG144	Prehistoric open campsite: rabdotus, hearthstones, projectile point fragment and stone tools	72	0		2, 9, 11, 14, 19	Lacks potential for SAL or NRHP listing per site form.
		71a	743	E	3, 8, 10, 12, 16, 17, 18, 31, 32	
41HG145	Historic scatter / Prehistoric campsite containing burned clay, lithic debitage	88	46	S	1, 5, 11, 15, 18, 19	Potential for SAL, although prehistoric portion of site may be modern road debris, per site form.

TABLE 4-5 KNOWN ARCHEOLOGICAL SITES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

SITE TRINOMIAL	DESCRIPTION	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE SITE	ALTERNATIVE ROUTE(S)	COMMENTS
41HG149	Prehistoric open campsite / lithic scatter	347	553	S	3, 7, 9, 11, 14, 15, 16, 19	Lacks potential for SAL and listing on NRHP per site form.
		60	902	E	10, 12, 13, 17, 18, 31, 32	
41HG150	Prehistoric open campsite / lithic scatter	64	686	E	3, 9, 10, 12, 17, 18, 31, 32	Lacks potential for SAL and listing on NRHP per site form.
		60	943	E	7, 13	
41HG151	**Prehistoric open campsite / lithic scatter**	**64**	**0**		**3, 9, 10, 12, 17, 18, 31, 32**	**Disturbed by various factors. Not eligible for NRHP listing or SAL per site form.**
		61	105	W	2, 8, 11, 14, 16, 19	
41HG161	Historic cotton gin foundation slab and scatter	122	402	S	4, 6, 14, 23, 24, 26, 30	Not eligible for listing on NRHP or as SAL per site form.
41HG185	Prehistoric lithic scatter	62b	397	W	1, 4, 5, 6, 15	Disturbed by leveling, plowing. Lacks research potential per site form.
41HG206	Historic scatter possible location of Las Nuevas ranch (ca. 1870-1930). One prehistoric lithic flake.	84a	815	W	8, 9, 10, 12, 14, 19	Has potential for SAL and/or NRHP listing.
41HG208	**Historic scatter (Spanish Colonial period to modern); prehistoric and protohistoric scatter including Guerro point, lithic debitage**	**70**	**59**	**SW**	**13**	**Potentially eligible NRHP listing; testing recommended per site form.**
41HG216	Prehistoric campsite/lithic scatter	56	310	E	10, 16, 17, 19, 31, 32	NRHP and SAL eligibility unknown per site form.
41HG217	Prehistoric lithic scatter	56	366	E	10, 16, 17, 19, 31, 32	

TABLE 4-5 KNOWN ARCHEOLOGICAL SITES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

SITE TRINOMIAL	DESCRIPTION	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE SITE	ALTERNATIVE ROUTE(S)	COMMENTS
41HG219	Middle Archaic and Late Archaic deeply buried lithic scatter	67b	77	SW	7, 13	
41HG220	Historic domestic refuse scatter	188b	144	N	4, 7, 9, 10, 12, 13, 14, 19, 22, 23, 24, 26, 29, 30	NRHP and SAL eligibility unknown per site form.
41HG222	Historic domestic refuse scatter	141	333	N	21, 23, 24, 29, 30	NRHP and SAL eligibility unknown per site form.
41HG223	Prehistoric lithic scatter	61	789	E	2, 8, 11, 14, 16, 19	Site does not appear to warrant listing on NRHP per site form.
41HG225	Historic engineering structures: Section of the McAllen Main Canal and associated sub-structures and features	102	146	E	1, 5, 7, 8, 11 14, 15, 17, 18	Eligibility for SAL or NRHP unknown, although entire canal and associated features likely eligible for NRHP per site form
41HG226	**Prehistoric lithic scatter**	**56**	**68**	**E**	**10, 16, 17, 19, 31, 32**	**Site does not appear to warrant listing on NRHP per site form.**
41HG228	Prehistoric campsite, lithic scatter, and one possible burned rock feature	56	410	E	10, 16, 17, 19, 31, 32	**Site does not appear to warrant listing on NRHP per site form.**
41HG230	**Historic: Early Statehood. Old Military Road. rounded aligned cobbles/stones with large pieces of cedar exposed in testing efforts.**	**67b, 70, 80, 81, 82, 84a, 097, 133, 183, 186, 188b, 213,215,350**	**0**		**2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32**	Eligible for listing in the National Register on its own merit, and may be a component of a potential National Register Archeological District associated with the Mexican American War Battlefield Sites.
		84b	**57**	**S**	**1, 5, 15**	
		196a	271	S	21	

TABLE 4-5 KNOWN ARCHEOLOGICAL SITES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

SITE TRINOMIAL	DESCRIPTION	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE SITE	ALTERNATIVE ROUTE(S)	COMMENTS
41HG231	Lithic campsite / surface scatter	194	737	N	16, 25, 27	NRHP eligibility unknown due to possible buried component per site form.

Notes: **Bold** entries are crossed by a 150-foot ROW.
Sources: TASA 2012, TARL 2012.

TABLE 4-6 CEMETERIES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

CEMETERY NAME	THC CEMETERY NUMBER	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE CEMETERY	ALTERNATIVE ROUTE	COMMENTS
Abram	HG-C058	71b, 73, 75	436	SW	3, 7, 8, 9, 10, 12, 16, 17, 18, 31, 32	
Asadores Ranch	HG-C023	188b	684	N	4, 7, 9, 10, 12, 13, 14, 19, 22, 23, 24, 26, 29, 30	HTC
Don Patricio Gonzales	HG-C015	138	839	S	21, 23, 24, 29, 30	
Ebony Grove	HG-C082	210	852	N	11, 16, 25	HTC
Garden of Angels	HG-C089	75	389	S	3, 7, 8, 9, 10, 12, 16, 17, 18, 31 32	
Gomez	CF C051	257	464	SE	4, 30	
Granjeno	HG C028	93	397	S	4, 6, 10	
Hillcrest Memorial Park	HG-C012	139	744	W	20, 22, 25, 26, 27, 28	
Los Pajaritos	HG-C004	196b	631	S	3, 4, 7, 8, 9, 10, 12, 14, 18, 19, 21, 22, 23, 24, 26, 28, 29, 30, 32	
Penitas	HG-C057	67a	724	W	7, 13	
Rio Grande Veterans Cemetery	N/A	85b	767	NW	1, 5, 11, 15, 18	
		84b	973	N	1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19, 31, 32	
San Benito City	CF-C022	266	341	NE	2, 5, 7, 12, 20, 21, 23, 26	HTC
San Pedro at Rancho Viejo	CF-C004	307	999	S	1, 9, 15, 23	HTC

TABLE 4-6 CEMETERIES WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTES

CEMETERY NAME	THC CEMETERY NUMBER	NEAREST LINK	DISTANCE IN FEET FROM CENTERLINE	DIRECTION TO THE CEMETERY	ALTERNATIVE ROUTE	COMMENTS
Unknown Cemetery 1	CF-0015	293	576	N	4, 13, 19, 24	
Unknown Cemetery 4	N/A	235	281	NE	4, 6, 10, 13, 22, 30, 32	
Weaver #2	CF-C012	235	750	South	4, 6, 10, 13, 22, 30, 32	
Zepeda	CF-C006	292	242	West	13, 24	HTC

4.4 IMPACTS ON AESTHETIC VALUES

Aesthetic impacts, or impacts to visual resources, exist when the ROW, lines and/or structures of a transmission line system create an intrusion into, or substantially alter the character of the existing view. The significance of the impact is directly related to the quality of the view, in the case of natural scenic areas, or to the importance of the existing setting in the use and/or enjoyment of an area, in the case of valued community resources and recreational areas.

Construction of the proposed 345 kV transmission line could have both temporary and permanent aesthetic effects. Temporary impacts would include views of the actual assembly and erection of the tower structures. If wooded areas are cleared, the brush and wood debris could have an additional negative temporary impact on the local visual environment. Permanent impacts from the Project would involve the views of the cleared ROW, tower structures, and lines.

The Palo Alto Battlefield National Historic Landmark is located within the study area and is protected under the National Historic Preservation Act. The NPS has expressed concerns with the viewshed from the Palo Alto Battlefield National Historic Landmark. Since no unique, pristine, or very high quality landscapes, or extensive landscapes protected from most forms of development exist within the study area, potential visibility impacts were evaluated by estimating the length of each alternative route that would fall within the foreground visual zones (one-half mile with unobstructed views) of parks or recreational areas, major highways, and FM roads. There are no interstate highways located within the study area. The alternative route lengths within the foreground visual zone of parks or recreational areas, US and State highways, and FM roads were tabulated and are discussed below.

All of the alternative routes have some portion of the routes located within the foreground visual zone of parks or recreational areas. Alternative Route 16 has the longest length of ROW within the foreground visual zone of parks or recreational areas, with approximately 21.0 miles, followed by Alternative Route 11 with approximately 20.0 miles. Alternative Route 21 has the least, with approximately 4.7 miles followed by Alternative Route 20 with approximately 7.0 miles.

All of the alternative routes have some portion of the routes located within the foreground visual zone of US and State highways. Alternative Route 26 has the longest length of ROW within the foreground visual zone of US and State highways, with approximately 40.8 miles, followed by Alternative Route 23 with approximately 39.7 miles. Alternative Route 31 has the least, with approximately 5.7 miles followed by Alternative Route 16 with approximately 6.3 miles.

All of the alternative routes have some portion of the routes located within the foreground visual zone of FM roads. Alternative Route 23 has the longest length of ROW within the foreground visual zone of FM roads, with approximately 54.0 miles, followed by Alternative Route 29 with approximately 52.5 miles. Alternative Route 10 has the least, with approximately 30.9 miles, followed by Alternative Route 22 with approximately 31.4 miles. A summary of the lengths for each of the alternative routes within the foreground visual zone of parks or recreational areas, US and State highways, and FM roads is presented in Table 4-1.